SUSTAINABLE CIRCULAR ECONOMY
AN OVERVIEW

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A circular economy is a systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the ‘take-make-dispose’ linear economy, a circular economy is restorative and regenerative by design and aims to decouple growth from the consumption of finite resources.

Circular economy works on the following principle:
- Reuse
- Reduce
- Recycle
- Refurbish/Repair
- Remanufacture

The concept of circular economy is a crucial tool in reversing the environmental crisis by promoting the reuse of materials and the efficient utilization of expired products to minimize the negative impact on the environment. Additionally, it encourages the responsible use of natural resources and extends the service life of environmentally hazardous products such as plastics and electronic appliances. It is not only beneficial for the environment, but it also creates job opportunities and adds value to the economy. Furthermore, it holds manufacturers accountable for the waste generated by their products, which is why regulatory bodies like the CPCB in India have implemented regulations such as the EPR authorization, which requires companies to develop a plan for managing the waste generated by their products to reduce environmental damage.
STRATEGIES TO MAKE BUSINESSES SUSTAINABLE AND CIRCULAR

1. Circular Inputs

In a circular economy, production processes utilize renewable, recycled, or highly recyclable inputs, enabling partial or total elimination of waste and pollution. Rather than being a liability that incurs disposal costs, waste becomes an asset.

2. Product Use Extension

This allows for the creation of new revenue streams through repairs, upgrades, and maintenance, as well as the ability to retain control of the product and its materials for future use. The born-circular also benefits from increased customer loyalty, as the customer is more likely to return for future needs and services due to the longevity and durability of the product.

3. Sharing Economy Concept

It aims to maximise the use of idle assets across a community, providing customers with affordable and convenient access to products and services. This includes sharing industrial assets such as conveyor belts, forklifts, machinery, and warehouses. Access to these assets no longer requires purchasing or renting from traditional suppliers, but is instead provided by individual people and companies.

4. Resource Recovery

It centres on the recovery of embedded materials, energy, and resources from products that have reached the end of their useful life. Born-circular companies prioritise the extraction of all recoverable value from their products, designing their products for easy and effective value recovery. These companies ensure that their business models incentivise users to return products through contractually binding agreements, deposits, or through a product-as-a-service model.

5. Product as a Service

Under this model, customers purchase a service for a limited time while the provider maintains ownership of the product and is incentivized for its ongoing maintenance, durability, upgrade, and treatment at the end of its use. This shifts the focus from volume to performance, maximising the usage factor and useful life of the product. The provider gains access to potential untapped opportunities for businesses, such as a new remanufacturing/refurbishment market and benefits from continued customer contact and insights into how their products are used.
SUSTAINABLE CIRCULAR ECONOMY IN INDIA

India has been one of the fastest growing economies in the world. This robust economic growth coupled with rising household incomes have resulted in increased consumer spending (individual and organization), which is expected to reach USD 4 Trn by 2025. With a population of 1.3 billion people, accounting for 18 per cent of the global population, living on only 2.4 per cent of the world’s surface, India is poised to face significant resource constraints. In order to sustain this growing population, achieve the desired economic growth rate and tackle the issue of resource scarcity, the country must embark on a positive, inclusive and environmentally sustainable model of development. Unlocking circular economy opportunities holds the key to lead this transformation towards building a low carbon resource efficient economy.

The need for India to adopt a circular economy model in order to reverse the environmental crisis has become increasingly pressing, given the country’s rapidly expanding population, swift urbanisation, and escalating environmental pollution and climate change. A circular economy approach, which emphasises the need for an integrated view of processes and products, is essential for minimising resource dependency and gaining a competitive advantage. The adoption of such a model could yield substantial annual benefits and result in a significant reduction in congestion and pollution, which would have a multiplier effect on the economy.

The ability to improve resource efficiency, reduce the consumption of existing resources, and the emergence of new business models will serve as an incentive for India’s transition towards self-reliance.
EFFORTS BY THE GOVERNMENT IN MAKING INDIA A SUSTAINABLE CIRCULAR ECONOMY

The Government of India has been actively formulating policies and incentivizing projects to drive the nation towards a circular economy.

- **Rules** such as the Plastic Waste Management Rules, e-Waste Management Rules, Construction and Demolition Waste Management Rules, and Metals Recycling Policy have been notified in this direction to achieve sustainable economic growth.

- The government has established 11 committees, comprising representatives from NITI Aayog and MoEFCC, SMEs and industry representatives, for eleven focus areas in order to accelerate the transition from a linear economy to a circular economy. These committees will develop extensive action plans for transitioning from a linear to a sustainable economy in their respective focus areas and will take necessary measures to ensure the efficient implementation of their recommendations and findings.

- **The National Solar Mission**, which aims to increase the use of solar energy in India and reduce dependence on fossil fuels.

- **The National Electric Mobility Mission Plan**, which aims to have at least 30 per cent of all vehicles in India be electric by 2030.

- **The National Action Plan on Climate Change**, which lays out a comprehensive strategy for addressing climate change in India, including measures to reduce emissions, adapt to the impacts of climate change.

- **The Pradhan Mantri Fasal Bima Yojana**, which is a crop insurance scheme that helps farmers mitigate the risks associated with climate change, such as droughts and floods.

- **The National Clean Energy Fund**, which is a fund established to support the development and deployment of clean energy technologies in India.
Securities and Exchange Board of India (SEBI) has introduced guidelines for companies to disclose their environmental, social, and governance (ESG) performance in order to reduce greenwashing. These guidelines require companies to disclose information on their environmental and social policies, performance, and risks, as well as their governance structure and practices also under the rules, corporates will have to provide information with regard to more than 120 metrics, including from the past financial two years. The aim of these guidelines is to provide investors with more information about a company’s ESG performance, which can help them make more informed investment decisions. Additionally, these guidelines will also help companies to improve their ESG performance by providing them with a framework for disclosure and reporting. These new rules will start from fiscal year 2023-2024.

Government of India, as part of its overall market borrowings, will be issuing Sovereign Green Bonds (SGrBs), for mobilising resources for green infrastructure. The proceeds will be deployed in public sector projects which help in reducing the carbon intensity of the economy.

The implementation of a circular economy has numerous advantages, including direct and positive implications for the competitiveness of companies, individual stakeholders, and the overall industrial sectors. Evidence suggests that the circular economy can generate new business opportunities, create jobs, reduce emissions of greenhouse gases, and provide other benefits. However, there is a potential pitfall to be aware of; economic growth does not always guarantee sustainable human development. The benefits of economic growth tend to be concentrated among a select few, leading to increased inequality. The ‘trickle-down’ effect, once believed to alleviate poverty and provide a basic standard of living for all, has largely failed to reach those who need it most in recent decades, and the impact of industrialization on the climate has been ignored.

To achieve a true circular transition, planning must occur at a macro-economic level, leaving no stakeholder behind. It is crucial to train the population for new kinds of jobs, as well as provide rehabilitation for workers who may lose their jobs as demand shifts away from non-renewable resources and virgin materials. The 7 Rs of circular economy - Reduce, Reuse, Recycle, Redesign, Remanufacture, Refurbish, and Repair - should serve as guiding principles while designing new ventures, business parks, and industrial clusters. With a systems-level approach and favourable economic conditions, India can become a sustainable manufacturing hub.
KEY CHALLENGES

The implementation of a circular economy in India faces several barriers. Some of the key challenges include: limitations in the supply chain, absence of pricing signals, limited access to capital, physical constraints, shortcomings in technology and infrastructure, lack of targets and benchmarks, negative customer perceptions of remanufactured products, lack of public information to support participation in the reuse, recycling, and remanufacturing, complex recycling processes, challenges in monitoring product quality throughout its service life, difficulty in maintaining product quality with remanufactured materials, and issues in tracking the composition of materials before initiating the recycling process.

Additionally, there is a lack of awareness among end-users, which limits their ability to make resource-efficient choices. Identifying opportunities to improve synergies and synchronize materials and supply chains between different actors can also be difficult. The high cost of effective waste treatment and remanufacturing for industries can also impede their efforts in this area. Furthermore, there is uncertainty about how a circular economy will function in the future and the lack of clarity on how it will benefit companies in the long term.

POST COVID OPPORTUNITIES: REALIGNMENT OF THE GLOBAL SUPPLY CHAINS

The COVID-19 pandemic caused disruptions in the supply chain, but with the growing emphasis on “Make in India” and “vocal for local” the Indian business ecosystem has been more resilient than most emerging economies. The pandemic provided an opportunity to recalibrate and support responsible consumption by pivoting to circular business models and downstream innovation. For instance, to support the dairy farmers the government provided subsidies and aid to cooperatives to convert liquid milk into value-added products with longer shelf life like milk powder, and leading brands like Amul bucked the trend and launched more than 100 products post COVID.
GLOBAL BEST PRACTICES AND INDUSTRY TRENDS ON SUSTAINABLE CIRCULAR ECONOMIES

Today, private industry players have become critical partners in designing and delivering effective, scalable, and practical solutions for promoting Circular Economy. A study by KPMG indicated that N100 companies have continued to steadily increase their reporting rates. Ten years ago, 64 percent of N100 companies presented their sustainability report. In 2022, 79 percent of these companies report. It is heartening to note that today practically all the world's top 250 companies (G250) report on sustainability. In 2022, approximately 96 percent of the G250 companies reported. So, the trends in sustainability reporting indicate that companies are inclined to adopt full disclosure to enhance their credibility and reputation amongst their clients and consumers. Against this backdrop, it would be worthwhile to analyse the trends by Indian companies. A study by CRISIL involving a study of 586 Indian companies across 53 sectors, based on fiscal 2021 data, reflected an improvement in the ESG scores of companies, especially in metrics pertaining to renewable energy, gender diversity and Board independence.

India’s commitment to sustainability was evidenced by India’s decision to ratify the Paris Agreement in 2016. Further India’s updated climate pledge to the Paris Agreement received the Union Cabinet’s nod on August 3, 2022. The pledge will lay out India’s clean energy transition pathway from now through 2030 and will be communicated to the United Nations Framework Convention on Climate Change (UNFCCC). Thus, the global treaties and pronouncements made by India have paved the way for companies operating in India to improve their rate of disclosure and reporting on sustainability metrics.

As waste to wealth is one of the leading trends in the circular economy, there is growing emphasis on upcycling the waste to energy by incineration, gasification, anaerobic digestion, and pyrolysis. Although every industry produces waste, nevertheless, some industries, like energy, food, agriculture, and fashion, are the biggest contributors of waste. Across India a growing number of Start-ups are working on waste upcycling solutions that focus on waste from such polluting industries. For instance, the fashion industry is now upcycling textile waste to produce new apparel, shoes, and accessories. This reduces the cost of raw materials and makes companies more sustainable. Thus, in the Indian startup ecosystem we have companies like – Trash to Treasure, Alcis Sports, Ecokaari – that are creating fabrics from plastic.

In keeping with the United Nations (UN)
Sustainable Development Goals (SDGs) “Agenda 2030” vision, India has made impressive strides from 18 per cent waste processing in 2014 to 70 per cent in 2021. Presently, about 377 million citizens reside in urban areas, producing 55 million tonnes of municipal solid waste (MSW) per year. The amount of waste generated is expected to reach 125 million tonnes annually by 2031. Estimates show that by 2050, India could reap annual benefits of approximately US$ 624 billion (Rs 40 lakh crore) by reducing the negative externalities. India is soon poised to become the third largest economy in the world and by 2030 will account for approximately 8.5 per cent of the world’s GDP. National Chemical Laboratory (NCL) and PET Packaging Association for Clean Environment (PACE) estimate that the recycled Polyethylene Terephthalate (PET) plastic industry in India is estimated to be worth around USD 400-550 million. Further, it is heartening to note that PET is recycled at a rate of 90 per cent, which is higher than in Japan (72 per cent), Europe (48 per cent), and the United States (31 per cent).

India’s circular economy has attracted investments of USD 1.8 billion during the period 2016-21. Innovations related to carbon mitigation and adaptation have account for over 80 per cent in terms of deal value. The World Economic Forum indicated that the quest for decarbonisation presents a USD 15 trillion economic opportunity in India and could create as many as 50 million net new jobs. The increase in funding support from across the board (private industry and government) is a great sign. The next steps of funding and innovation support are poised to take place in verticals related to smart agriculture, waste, and environment.

The Indian sustainable debt market (known in the country as green, social, and sustainability (GSS)) has received a major push. Leading companies like Tata Power and JSW Steel are advocating for expansion of green finance. Consumer studies indicate that 50 percent young Indians —committed to using their money to support business sustainability. Importantly, the establishment of a Sustainable Finance Task Force by the Indian Ministry of Finance will pave the way for stringent disclosure rules for companies and entrepreneurs investing in India. Such measures are also important as India imports more than 80 percent of its crude oil, and hence, it is important for the country to invest in biofuels. Climate mitigation projects can be funded through green bonds. India’s first green bond was issued by Yes Bank in 2015 with the aim of raising INR 5 billion. In the year 2021, green bonds worth INR 6.11 billion were issued in India and constituted barely 0.7 per cent of India’s green bond market. Therefore, there is a lot of potential to attract new set of investors to India’s debt market through green bonds. CICERO, a reputed Norway-based Second Party Opinion (SPO) provider, was assigned the task of evaluating India’s green bonds framework. CICERO rated India’s Green Bonds Framework as ‘Medium Green’ with a “Good” governance score.
A study by Accenture posits that presently there is a USD 2.5 trillion gap in global SDG financing which is hampering progress especially in developing countries. Today 94 per cent of CEOs acknowledge the importance of sustainability to their business. An analysis of the industry trends post COVID indicate that companies operating in verticals related to banking (brand value up 16 per cent), IT services (brand value up 15 per cent) and telecoms (brand value up 7 per cent) sectors in India actually enhanced their brand value and offerings post COVID. The year 2022 became significant for the Indian IT services industry - as the industry crossed USD 200 billion in total revenue and USD 5 million in total workforce. More importantly, during the lockdown Invest India (India’s Investment Facilitation and Promotion Agency) played a pivotal role in facilitating COVID relief support by many private sector conglomerates under their CSR initiatives.

India’s digital landscape witnessed a high rate of digital transactions, the RBI reported 100 million transactions with a volume of USD 67 Bn daily post COVID. Additionally, Start-ups and industry titans have pioneered innovations domains related to ed-tech, e-health, etc., using 4IR technologies to disrupt traditional business models. More importantly, the geopolitics post COVID pushed the global players to look for alternatives to China, and pitch India as the new workshop of the world. This manifested in the form of a clarion call for enhancing the resilience of the local supply chain through the Government’s “Atmanirbhar” initiative. Consequently, India is today perceived as a desirable destination for electronics manufacturers exiting China. This became evident with the world’s largest manufacturer of electronic parts Foxconn entering a USD19.5 billion (USD 27.9 billion) joint venture with India’s Vedanta Group to make semiconductors in Gujarat. In this regard, incentives like the Production Linked Incentive Scheme by India have played a major role in attracting a greater share of FDIs within the country.

Reflecting on the trends in a post COVID world, Stanford economist and Nobel laureate Michael Spence declared that “India is the outstanding performer now,” noting that the country “remains the most preferred investment destination.” This can be attributed to the fact that India is not heavily dependent on any one growth engine whose might is fading — and its strengths are precisely in areas which are advancing in economic power.
G20 AND INDIA’S CLIMATE LEADERSHIP

India’s G20 Presidency presents a great opportunity to put the spotlight once again on the unique challenges facing the Global South. It harks back to the idea of “Common but Differentiated Responsibilities” (CBDR) that was declared at the Earth Summit at Rio de Janeiro in 1992. The CBDR principle acknowledges that all states have shared obligation to address environmental destruction but denies equal responsibility of all states regarding environmental protection. In other words, the CBDR principle was based on the premise that developed countries contributed more to environmental degradation and should have greater responsibility for climate change mitigation than developing countries.

Developed countries have fallen short in meeting their 2009 commitment to channelize USD 100 billion a year by 2020 to developing countries to help them mitigate and adapt to the impacts of climate change. The G20 Finance Track is a common platform for G20 finance ministers and central bank governors, and working groups like the Framework Working Group (FWG) and Sustainable Finance Working Group. Thus, India’s G20 presidency could play a role in steering the forum towards greater cooperation on catalysing climate finance.

Importantly, the G20 Presidency could be leveraged by India to push for reforms within Multilateral bodies so that emerging economies like India get to play a larger role in climate negotiations and allocation of funds to low carbon projects. The G20 commissioned an independent review of the MDBs’ capital adequacy frameworks (CAF), which define MDBs’ scope to leverage shareholders’ capital contribution for financing. The final report contains recommendations which pave the way for a reform of multilateral bodies, along with proposed measures to maximize the development impact of multilateral bodies.

In keeping with the principle of Vasudaiva Kutumbakam (One Earth, One Family, One Future), the Indian G20 Presidency will catalyse the creation of a sustainable global value chain. Developed nation members of the G20 (Australia, EU, Germany, UK, USA, etc.) have either developed or are in the process of developing regulations on sustainable supply chains, that will make it incumbent upon exporting/supplying country enterprises to adhere to ESG and quality standards requirements set by the buyers/brands. Thus, forging common ESG parameters amongst all member nations would help MSMEs and more domestic companies to reap the benefits of international trade.
CONCLUSION

In conclusion, sustainable development necessitates disruptive transformations in the way businesses and societies are organized. The circular economy model presents an opportunity for innovation and synchronization between natural ecosystems, businesses, lifestyles, and waste management. Though the circular economy in India is still at a nascent stage, most industries are making efforts to expedite their adoption of the model, which is helping the government to create social innovation in the way resources are reused and recycled.

The Government of India has taken robust measures to transition the country from a linear to a circular economy by establishing 11 committees—to be led by the concerned line ministries and comprising officials from MoEFCC and NITI Aayog, domain experts, academics, and industry representatives—for 11 focus areas. The primary focus will be on verticals related to municipal solid waste and liquid waste, agriculture waste, tyre and rubber recycling, electronic waste, industrial waste, solar panels, lithium ion batteries, scrap metals, gypsum, used oil waste, and tyre and rubber recycling. The COP 27 meet in Egypt last year further emphasised the importance of a circular economy.

It was encouraging to note the focus on sustainability within the Union Budget 2022-23. In keeping with the principles of a circular economy, the government framed the Battery Waste Management Rules 2022, Plastic Waste Management Rules as amended in 2022, e-Waste Management Rules 2022. These regulatory interventions are meant to promote utilisation of waste generated by laying down target waste disposal standards for all the stakeholders in the value chain. Further, it is important for us to remember that India achieved the targets mentioned in the 1st NDC on renewable energy and energy intensity before time. India led the way by pushing for the world to move way from a “use and dispose mode” to a circular and sustainable economy through the declaration of Mission LiFE by the Hon’ble Prime Minister at COP 26. Thus, the myriad policy interventions and sustainability focused initiatives by the Government have positioned India to emerge as one of the most prominent global forces on climate leadership.
REFERENCES


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