

# Analyzing Circular Economy Policies and Initiatives in India and The Way Forward

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## **Abstract**

The circular economy model, the most recent solution in the drive to achieving sustainable development goals. The concept goes beyond the purview of pure economics and finds itself within the threads of state policy as well. The circular economy model refers to a system where goods live beyond their primary use to be recycled, reduced and prevented from becoming a pollutant. The model works on the principle of minimal yet efficient use of resources. Circular economy models have applications in a variety of fields: from water conservation and energy resources to waste management. This model however has inherent problems which are being observed and worked upon over time. Some of these problems are the systematic application of policy to the deficit in technological information. This paper focuses on various policies based on this model applied in India, their impact and challenges. India is committed to fulfilling Sustainable Development Goals in every aspect, therefore it is imperative to study the effect of the initiatives proposed and executed by the state. This paper touches upon policies such as Swachh Bharat Abhiyan, National Resource Efficiency Policy, Atal Innovation Mission, Financial Incentives, Resource Efficiency and Circular Economy Industry Coalition (G20 Initiative). This paper also tries to understand the challenges that are faced by the model, some of them include a lack of finance to develop infrastructure and develop production units, research to study more energy and cost-efficient systems and awareness that impacts consumer patterns that encourage sustainability-based commercial activities; and presents recommendations to resolve these challenges, awareness and global platforms are examples of the same. as well as conducts an introspection of policies implemented by other nations.

## **Introduction**

### **The concept of circular economy**

Climate change threats looming over, landfills a common sight, and air and water pollution rampant, all of these phenomena have become a part of our everyday lives, and their long-term effects are now palpable. In a situation as dire as current, a complete system overhaul is required. Preceding industrial

revolution producers have followed a linear system of production where mountains of waste can be observed in pre and post-production. This is yet not the end of the waste generation process, the end consumer in a bid for convenience and ignorance will contribute to generation of waste that is the result of heedless overuse of limited resources.

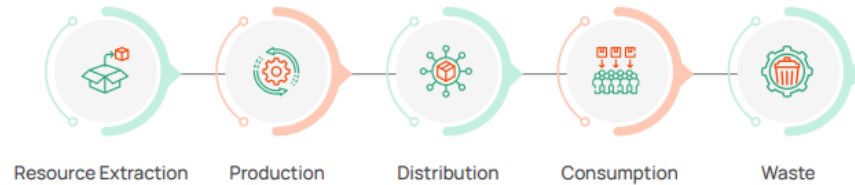


Fig.1. Representation of Linear Consumption Model<sup>1</sup>

As per the European Parliament, the Circular economy is a model focused on production followed by consumption that promotes sharing, reusing, recycling, repairing and refurbishing pre-existing materials in order to extend their life cycles. The invention of the circular economy model is out of the necessity of this very wasteful yet commonplace practice. The circular economy model is a tool devised to bring about achieving Sustainable Development Goals (SDGs). It focuses on end-to-end use of every resource needed, forming an arrangement where each factor involved in production is used with optimum efficiency to extract maximum out of minimum and closing the loop of material utilization. It is an order that enforces the philosophy of cradle-to-grave and designing products that live beyond primary use, done through reuse, recycling, repair, refurbishing, remanufacturing, redistribution and renewing.

The principles of the circular economy model go beyond the purview of reforming manufacturing traditions, its applicability transcends fields and sections of society. Forming and enforcing policies fall under the responsibilities of governing bodies, local or national. Encouraging and demanding the shift towards sustainability customs as a natural norm is the duty of consumers who drive demand-side economics. Research and policy formation have to be undertaken by academicians and analysts who conduct an in-depth study of such concepts. At the moment only 8.6% of the world is estimated to be circular, showing that much work is yet to be done globally.<sup>2</sup>

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<sup>1</sup> (“Kalaari Capital” 2022)

<sup>2</sup> (Fraser 2022)

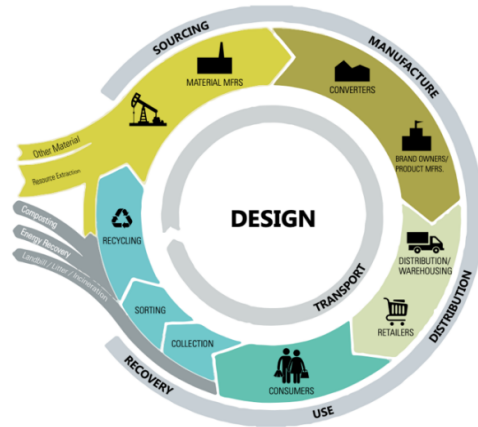


Fig.2. An Illustration of the Circular Economy Model<sup>3</sup>

### Inherent problems of the model

One of the biggest observable problems of the model is the lack of uniform definition and scope. While its objective is clear, what aspects of economics and the ecological sphere entail within are debatable. Application of policies heavily rely on political and social intent. The model does not address ontological and epistemological factors that are imperative to long-term practice.

A critique that is inherent to the model is the end goal of no waste creation, an order of closed material loops. This very goal in itself is impossible from physical sciences perspectives. The goal determined needs to be in accordance with the laws of nature.

The biggest problem observed within the model is that it fundamentally fails to challenge the neoclassical economic view that warranted no intrinsic value to the limited economic growth as a trade-off for environmental protection. Inefficiencies within the model do not garner an unanimous conviction that is required to propel it forward without reservations.

### Literature Review

India's engagement with the circular economy model can be best understood through the working paper 'India's Tryst with a Circular Economy'. It provides a comprehensive account of the model in focus, starting from India's current linearity to gradual transition to a circular system. It promotes reservation on natural capital keeping in mind India's primarily agrarian economic system, therefore having natural access to rich biodiversity. Along with analysis of current policies in practice, this paper also studies challenges that are predominately hindering effectiveness, some of these challenges include unsystematic waste management processes, lack of closed-loop mechanisms for products i.e., discarding products rather than recycling and practice of other R's of environment. One of the major

<sup>3</sup> Source: spcadavance.com, 2015

problems faced is lack of access to recycled raw material. Some recommendations provided by the paper entail publishing and publicizing a document describing a national level vision demonstrating the need for circular practices, along with self-regulation, a body to monitor, track and evaluate advances which bring about rapid inclusion of sustainable practices in daily life. An incentivisation program has also been suggested to encourage recycling, reusing and reducing waste. (Shanka, Bhalla and Kumar, n.d.)

One of the emerging policy aspects in the circular model is moving towards Bioeconomy. The term refers to development of methods of production, distribution, management and other economic activities that moves a nation on the path of sustainability. India is one of the earliest embracers of bioeconomy. This can be observed by already practiced use of biogas and food waste, however these processes need an efficiency boost to enable the nation to derive advantage out of its core-strengths. A phased manner of processing is advised due to the sheer scale of industries present. Clustering groups transitioning to a circular economy will drive the nation's ambitions. ("MOVING TOWARDS A SUSTAINABLE, CIRCULAR MODEL", n.d.)

Circular economy model especially focuses on waste management, with the context of today's world e-waste and plastic waste make-up a major component of waste deposits. E-waste in particular is difficult to dispose of due to several components of different materials that are used to make electronic equipment. Some nations have severe legislations that demand producers to acquire disposed electronic parts and dispose of them in appropriate ways. India while enforcing such norms can focus on integration of formal and informal e-waste collection centers and incentivize usage of recycled materials. (Goel 2022)

Plastic on the other hand poses a different range of problems. Objects made of plastic are essential for the biomedical industry and thus cannot be banned completely and while attempts to ban single-use plastic have been made, the widespread usage has been persistent. There has been a change that can be observed for instance the widespread use of paper and other renewable materials, raw material of disposable utensils, growing awareness regarding harmful effects of plastic use, shopping malls and grocery stores promoting use of private shopping bags or selling paper or cloth bags, adhering to government regulations. Methods to recycle plastic that has already been disposed yet needs to be developed but actions in that direction are being taken. (Bharat 2023)

This paper focuses on qualitative evaluation of initiatives currently in practice for specific areas as well as generally applicable policies, it views challenges from a bird's eye view as well as provides some recommendations for the same. (guide, n.d.)

### **Areas of Concern**

As mentioned earlier the circular economy model is designed to perpetuate the practice of causing minimal damage to the society and it focuses on several industries in an economy. It is not limited to

just commercial activities but the target is to prevent and reverse environmental damage. Therefore, out of several areas of application, this paper focuses on the starting points of the production cycle, the natural resources such as soil, water bodies and energy. Waste management practices and financing of activities related to sustainable development will be looked upon as further linkages.

### Natural resources: Soil, Water and Energy

Preservation and efficient utilization of natural resources are essential for the growth of an economy but also more importantly sustenance of human life. This paper sheds light on four aspects of these resources.

**Soil** plays a very important role in more than one. High-quality fertile land is required to produce food for a growing population as well and forested land prevents damage caused by intense natural disasters. Soil is a non-renewable capital that once lost will not only impact the production of food but will also cause a great disturbance to the ecosystem dependent on it and unrecoverable damage to groundwater stores as well. Policies include diversification of crop patterns, soil-based research education for farmers, and reduced use of chemical insecticides. Such initiatives can be observed through Krishi Vigyan Kendra- a center to promote agricultural practices in sync with technology to maintain soil health without trading off food production quantity and quality. Micro irrigation initiative- Per drop more crops to utilize limited water resources to the maximum. However, soil management goes beyond agriculture as one aspect requires reforestation and native biodiversity. Policies reprimanding uncontrolled felling of trees and clearing of land of vegetation form an integral part of soil preservation.

**Water-** once presumed abundant is now realized to be rapidly depleting. Water conservation efforts make an impact in areas ranging from environmental protection to the fulfillment of basic human needs. As such water management takes into consideration preservation of water bodies, reusing wastewater and collection of waste water. Jal Shakti Abhiyan essentially promotes rainwater harvesting to manage drinking water resources as an example. Promotion of wastewater treatment plants is undertaken to prevent linear water management and polluting existing water bodies.

**Energy** access is a necessary condition for the development of any economy. The source of energy is a matter of concern that the circular economy model addresses. Deriving energy from non-renewable sources not only acts as a major polluting factor, it is also evidently not a long-term term solution for power needs. Global efforts are concentrated on pushing forward energy transition towards greener modes, especially renewable methods such as solar power plants, wind farms, and hydropower plants. Nuclear energy, once deemed the cleanest form of high-quantity power source poses its own sets of problems much like previous renewable forms. The circular economy model pushes for not only research on the use of various energy sources but an emphasis on conservation efforts as well. Green

Hydrogen Mission is an initiative to achieve Net Zero and ultimately lead to decarbonization of energy. It will focus on providing energy throughout the economic spheres within the nation and outside.

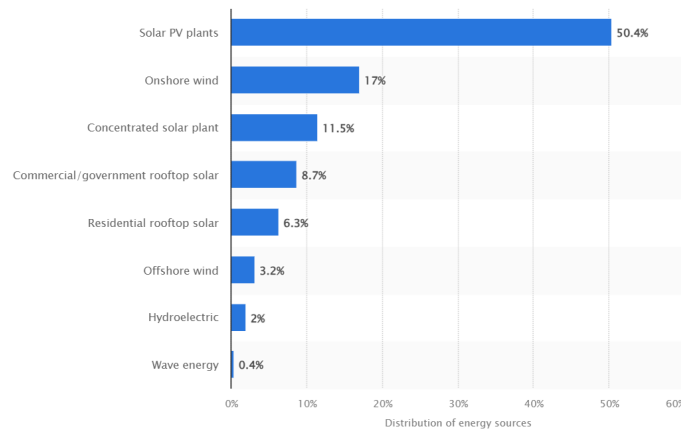


Fig.3 . India's Energy Outlook by 2050<sup>4</sup>

## Waste Management

A major portion of pollution is caused due to massive quantities of waste deposits. Waste is categorized based on its contents and therefore each category requires a customized management process. With increasing economic activities and rapid consumerism landfills and improper waste disposal have become commonplace practices. Waste management requires adequate technology, substantial infrastructure investment, various processing systems as well and reverse supply chains. Circular economy initiatives intended for waste management work on reducing, reusing, recycling, repairing, refurbishing, and remanufacturing, as a result, waste management efforts start from the design of the product and end with consumers discarding it. Reduction of waste accumulation from the very source is an extremely important waste management practice, this not only reduces the pressure on the segregation system but on the processing front as well. To promote waste management, the efficiency of private sector players needed for the creation of value through reverse supply chains has been observed to be the most effective way of bringing in businesses specializing in waste management, reducing the burden of the same on public capital. A sector as humongous with direct and indirect impacts on several allied industries faces a number of challenges from behavioral to logistical and technological deficits.

## Role of SMEs

To carry out developmental activities while being on a path of sustainable development is an extensive effort that cannot only be undertaken by public enterprises but needs support from the private sector

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<sup>4</sup> Source: Statista

as well. Small and medium enterprises play a big role in carrying out activities required for sustainable development goals. SMEs that have focused on supply chain systems have proven to be efficient not only in terms of their objective but also in maintaining environmental preservation requirements which ultimately create awareness and garner consumer support. Technology-oriented systems developed by these organizations have brought a massive impact in improving circular economy activities that include R's beyond reduce, reuse and recycling. While profit-motivated actions undertaken by SMEs provide solutions for challenges faced and improve resource allocation to achieve a circular economy oriented system. SME contributes to SDGs yet they have a plethora of challenges to deal with, Some of these include fundamental problems such as lack of adequate financing for research, problems associated with the flow of technology and upstream and downstream of material as well in quite a few situations. SMEs are capable of devising solutions tailored to a specific industry and nevertheless fail due to the aforementioned issues. Some of these obstacles can be tackled with government support and improving consumer awareness but obtaining their results might have long gestation periods without assistance from their respective industries.

## E-Waste Management

Electronic waste or e-waste is a rapidly growing problem in an increasingly digitizing world. Electrical parts and electronic products at end-of-stage ends up as waste material. These components, unlike other forms of waste when recycled, have quantifiable economic value. The problem that currently exists within the e-waste management is that of the informal sector. Major recycling activity for e-waste components is carried out by laborers in the informal sector, here lack of technological methods and safety precautions is observed.

As per ICEA report, 90% of e-waste is collected and segregated while 70% of the collected waste is recycled by the informal sector<sup>5</sup>. The projected electronic consumer market in India is the size of 30.6 Billion USD for the year 2025<sup>6</sup>. With growth in consumption e-waste deposits will also increase. This form of recycling methods will not suffice as they pose serious health risks and prove to be inefficient in resource extraction.

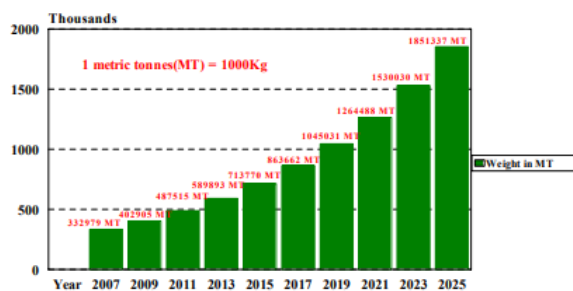


Fig.1: Growth of Ewaste in India

<sup>5</sup> ("E-Waste Management in India" 2023)

<sup>6</sup> ("India: online consumer electronic market size 2025" 2022)



Fig.4. Projected growth of e-waste in India<sup>7</sup>

E-waste recycling process is known as urban mining involves removal of precious metals like gold, silver, copper and palladium from printed circuit boards, salvaging functioning parts from the devices. The reusing and reducing component involves cradle-to-grave design of the device that prevents product from becoming obsolete in a short duration. Another alternative is repairing and refurbishing products to be resold as second hand products for renewed use. Second hand trade of electronic equipment also leads to significant reduction in e-waste generation and subsequent release of greenhouse gasses.

### E-waste Management and Circular Economy

Despite mentioning waste management, the reason e-waste management is studied again is due to overwhelming issues it presents and the importance of tackling it. E-waste management is one aspect that truly fits in with the circular economy model. The properties of e-waste that brings about profitable recycling processes makes it ideal to promote circular economy policies.

E-waste management is not just essential for dealing with the end-of-life product's disposal, concepts like urban mining can cause significant reduction in demand for raw materials required in production of new goods. Precious metals used and later extracted from electronic equipment are obtained through mining processes which end up causing considerable damage to the environment. Mining causes severe disruption in the soil ecosystem, increases fine dust particle ratio of air, contaminates groundwater, not to forget issues concerning gross violation of human rights.

E-waste management through the process of recycling, refurbishing, repairing, urban mining and many more will prevent toxic chemicals from ending up in the environment. Fumes released from degradation of electronic components coated with hazardous chemicals enter air, pollute the ground, these problems have a direct impact on human lives. Application of the circular economy model on e-waste is essential to reduce economic pressures on environmental restoration, bridging the gap between demand and supply of raw materials and most importantly as a result improve the quality of life.

### **Policies implemented in the country**

#### Swachh Bharat Abhiyan

Swachh Bharat Abhiyan was launched on 2nd October 2014 with the mission of attaining universal sanitation coverage and ultimately drawing social attention towards the importance of basic universal

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<sup>7</sup> (Chatterjee, n.d.)

sanitation. The objectives were surrounding waste management. It focused on eliminating the practice of open defecation by constructing individual toilets, promoting rural cleanliness, appropriate garbage and waste disposal mechanisms, and developing solid and liquid waste management systems. It primarily aimed to influence the mindset of society by sensitizing the need for basic hygiene.

### National Resource Efficiency Policy

Launched in 2019, the National Resource Efficiency Policy is designed to carry out commercial activities in tandem with environmental resources. It aims to promote activities that promote equilibrium between economic ventures and efficient resource allocation. The policy acts as a regulatory and facilitating body that guides structured waste management, technology transfer, increase in productive employment, reduction of waste generation at the source, creating high-value services with minimal resources and most importantly achieving SDGs. In more concise words the objective of the policy is to encourage sustainable production methods boosted by similar consumption patterns. However, since launch, the awareness regarding this policy among beneficiaries is low, this leads to a lack of intended results.

### Atal Innovation Mission

Launched in 2015 Atal Innovation Mission was put forth to kinder the spirit of innovation and entrepreneurship. It is a part of Niti Ayog and comprises two more divisions: Atal Tinkering Labs which inculcates the facilities required for innovative research and Krishi Vigyan Ken which work on providing agricultural solutions after thorough study of the land. The programme aims to promote circular economy practices on the principles of sustainable innovations.

### Financial Incentives

Other than the policies launched serving various goals and addressing issues, several forms of financial incentives have been provided by the Central Government. These monetary incentives are in multiple forms ranging from subsidies to tax concessions as well as easy access to credit lines. These incentives play an important role in bridging the gap between production and demand. Incentives promote exchange of all forms of information, techniques to raw material.

### Resource Efficiency and Circular Economy Industry Coalition (G20 Initiative)

This is an initiative launched at the G20 summit as a part of the global sustainable mission. This initiative promotes free flow of knowledge, exchange of goods and services and most importantly

pooling of financial resources. A vast number of multinational corporations have taken part in this initiative, many in the capacity of founding members. In the era of globalization no nation is isolated and thus just as goods, climate problems also cross borders, in the view of preservation efforts for the planet international programmes such as this are at the helm of protection, preservation and sustainability missions.

## **Challenges faced**

### Lack of linkages between policy and practice

Policies are essential to bring about impact, however a disconnect between policy document and implementation renders the theory useless. It is often observed that policies that require thorough, perseverant execution of ideas on grassroot levels fail due to absence of motivation on the enforcing body which is often local authorities.

### Lack of required infrastructure

Activities such as waste management, river restoration, installing of solar panels or establishing wind farms are capital intensive activities that often require specialized infrastructure with high gestation periods. Shortfall of the same will not simply result in prevention of relevant activity but also create a leakage for income investment.

### Lack of research based solutions

Just as different types of waste deposits need to be disposed of through different methods. There is a one-shoe-fits-all solution for any aspect of the circular economy model. There is a severe need for research that is tailored to problems faced. Research along with custom recommendations, a global exchange of information platform is needed to facilitate rapid development with minimal loss of resources.

### Source- based awareness deficit

Circular economy based policies designed to impact supply side factors will not be effective without taking demand side factors in consideration. Awareness that impacts consumer behavior patterns is essential not only to advance sustainable practices among individuals but also promote commercial activities in the economy. Awareness among consumers will lead to societal pressures and awareness among businesses that will bring about sustainability norms.

## Need for capital

Developing required infrastructure and conducting research demands capital. Access to timely and adequate capital is essential for any form of developmental activity. Capital can be considered as both monetary and physical production units that can be used to acquire raw material and other factors of production. Capital here does not just refer to incentives provided by the government but by various financial institutions as well. Financial institutions aimed at impact investing can assist in providing working capital for activities ranging from expansion to research.

## Current Situation in the nation

In a country that is as vast as India in terms of population application of circular economy policies such as soil rehabilitation and e-waste management, efforts of just the Central Government is not enough. State Governments efforts are required to make an impact. Another factor that makes state-wise analysis important is difference in waste generation and as a result waste management strategies also differ. Currently 70% of e-waste generated in the country comes from 10 states.<sup>8</sup> Whereas e-waste management capacity, i.e., processing from segregation to mining to melting is nearly not enough.

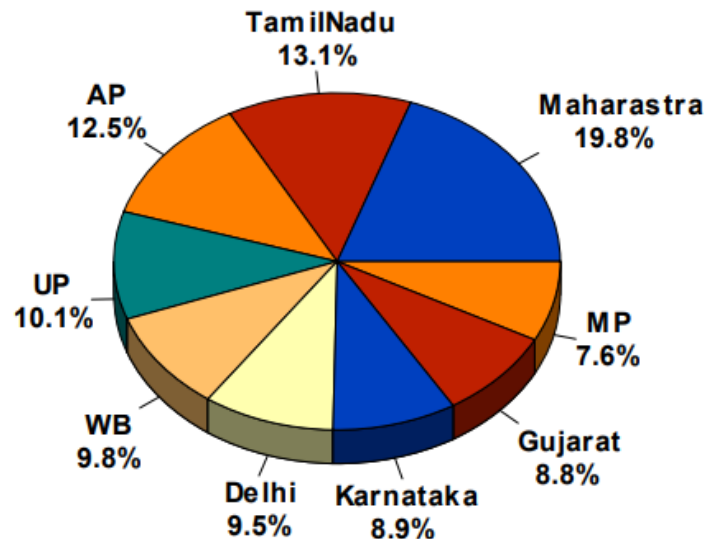


Fig.. Representation of State-wise e-waste generation 2023<sup>9</sup>

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<sup>8</sup> (Chatterjee, n.d.)

<sup>9</sup> (Chatterjee, n.d.)

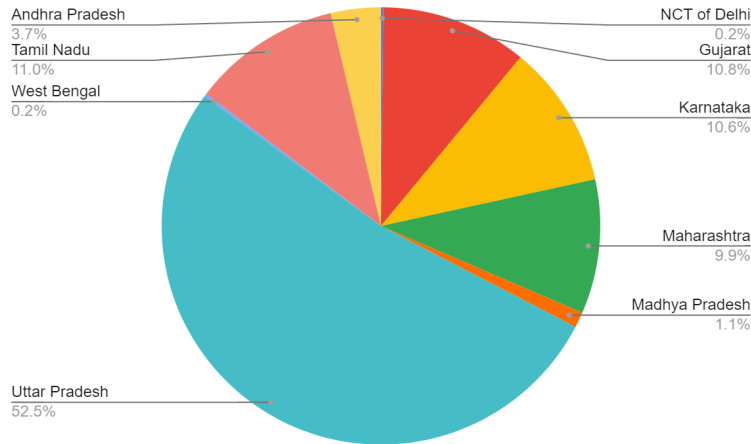


Fig.. Representation of e-waste management share of states mentioned in Fig..<sup>10</sup>

Waste management of all types along with Centre initiatives require efforts from State Governments as well to monitor progress and adherence to norms set by various agencies such Pollution Control Board and others . Along with monitoring State Governments also recommended to engage in data collection on waste generation, management, product reutilisation and other loop completing activities. This data is required to be collected based on their categorization. Data collection is essential to study the current situation in the nation and further research and development based on specific problems faced. Organizational activities carried out by the Governments of States can contribute to resolving issues associated with informal sector involvement in waste management.

As per projection by Ellen Macarthur Foundation December 2016 report India would gain benefits to the tune of ₹40 Lakh Crore annually by 2050<sup>11</sup> On the path of a circular economy, this will be earned while reducing negative externalities and greenhouse gas emissions. As per this report the circular economy in India has three primary areas of impact: construction, agriculture and vehicle manufacturing. Considering India’s development ambition and current global supply volume, circular economy policies take place of great importance. Presently India has already shifted towards the path of sustainable development in phased manner through policies targeting various areas of concern, private waste processing plants have been set up, and the Government has rolled out financial incentives schemes and programmes to ensure complete movement along the closed loop production process. Present G20 Presidency held by India has been utilized to pass resolutions calling for global cooperation for sustainability, this is tribute to the nation’s commitment towards maintaining a circular economy now and in the future.

<sup>10</sup> (Bagwan, n.d.) The statistics are taken from the mentioned paper and turned into pie chart form for visual representation of data by the author.

<sup>11</sup> (“Circular economy in India: Rethinking growth for long-term prosperity” 2016)

## **Lessons India can learn from other nations**

**China:** China focuses on implementation of circular economy principles in a phased manner starting from micro level- enterprises then industrial parks and moving upwards to macro levels. Enterprises in China have set up ecological supply chains to enable upflow of raw materials and downflow of finished products. The emphasis is put on acquisition of raw materials to over time completely phase-out toxic substances. This is undertaken while maintaining the target of maximum output from minimum input.

**Germany:** They have channeled a lot of their efforts towards waste management, this is done through legislations such as producers having to accept all forms of e-waste components free of charge, banning landfill dumping, phasing out landfill till the year 2020. They also stress on waste segregation before collection and maximum water utilization. Germany has set an example in terms of most efficient resource recovery.

**Japan:** On the contrary to China, Japan took a top-down approach where the society was guided by legislation and regulatory framework. They integrated public and private responsibility to abandon the use of non-renewable sources of energy for efficient renewable sources of energy mechanisms. Manufacturers here were encouraged to accept high-tech methods to facilitate reuse, recycling and repairing goods.

## **Policy Recommendations**

### **Auditing Process**

Here an audit process is recommended especially for the waste management sector. Circular economy model heavily relies on recycling of waste to reduce excessive use of virgin materials that cause environmental damage. To ensure the loop of the circular process is complete, efficient waste management is a necessary condition. Hence a formal, structured audit process is needed, this will also help in identifying areas that require further attention and possible leakages in the established system.

The below proposed audit system is designed for local governing bodies

1. Measure the collected waste volume and segregation

The amount of waste collected from a specified area should be measured in terms of metric tonnes. This collected waste then needs to be segregated by laborers as per a pre-set category. Basic training and safety gear will have to be provided to laborers employed for this process to maintain safety standards and quantity of raw material derived.

2. Recording process

Materials after segregation need to go through data collection based on their category, quantity and quality of data collected as well as proposed further processing.

### 3. Processing of materials

After data collection each category will go to their processing plant. These processing methods can be undertaken by self-governing local bodies or can be auctioned off or sold to determined private waste processing firms.

### 4. Data reconciliation

Materials that have gone through the procedures to get converted into raw material can be used for post-processing data collection. This means analyzing how much metric tonnes of waste when passed through treatment yields what amount of raw material (for other industries) is generated. The data then can be treated on a state or national level to compare efficiency in processing systems and impact of other variables.

Data processing is an essential stage of the audit as it would uncover several gaps that can be researched upon to create well-defined customized solutions. An infallible waste management sector will reduce pressure and natural resources for raw materials, it will allow for a better redirection of financial and human resources, all while protecting the environment and reversing pollution damage.

## Organization for technology transfer

It is suggested that a separate organization should be established, the purpose of forming this distinct entity is amalgamating an unit composed of stakeholders belonging to all perspectives responsible for carrying out and regulating various ventures associated with mission within circular economy policies. A platform that facilitates pooling of resources by allowing an interaction between businesses within that industry globally, can have a major impact on exchange of knowledge. Such an organization can expedite transfer of ideas, can lead collaborative undertakings, open channels for communication within the industry as well as with governments. Industry councils can attract academic contribution, NGO support that will assist in adoption of circular economy practices while working on demand side consumer behavior.

## Awareness programmes

Transforming socio-economic structures towards sustainability based activities, awareness among individual members of society as well as entrepreneurs becomes the starting point of action. Awareness programmes are highlighted here to influence the behavioral economic side of campaigns. It is proposed to conduct comprehensive waste management and sustainable behaviors workshops for school students. It has been observed that children greatly influence the behavior of adults around them, enforcing road safety rules by children on parents is a vivid example of the same.

Teaching young children of all ages the necessity to practice 3 R's of the environment have shown tremendous impact on reduction of waste accumulation from the source. Further educating them on a number of other daily habits that they as a single entity can carry out will result in awareness among communities around them. These programmes should be more than just part of their school curriculum; interactive, practical application based workshops are recommended to ensure maximum value transfer. Tasks carried out by societies can reduce burden on public resources and contribute to restoring the natural environment.

### Development of waste management infrastructure

Waste management is a capital intensive task, here capital refers to both machinery and labor. Currently in India waste collected from source is sorted by informally hired laborers who then sell the recyclable materials to factories which either recycles them or discards the non usable objects. Neither of the two parts of this mechanism are fully efficient. Individuals that engage in manual segregation often work in hazardous conditions that either causes physical damage to them or leads to further depletion of input materials. The workshops that process the input tend to have rudimentary machinery that gives less than optimum output. Factories that are unable to advance themselves due to lack of capital tend to shut shop after consecutive fall in earnings. Considering these factors, the need for access to investment and information to develop waste management infrastructure is put forth. Currently only registered or part that falls under organized sector receive government incentives, the unorganized sector needs to be brought in the system to ensure the industry reaps benefits of infrastructural capital and receives relevant resources for the same.

### Conclusion

Circular economy with its advantages and shortcomings is the way ahead to maintain moving forward on the path of sustainable development. It is essential to study the impact of sustainable development policies to ensure the future generation have a healthy world to live in while ensuring it does not come at the cost of living conditions of the present population.

This paper began with understanding what circular economy model entails and loopholes within it. While understanding its composition, the paper studied the areas that require attention and efforts of the Indian government towards them. Some flagship initiatives and their missions were observed keeping in mind the challenges still present. Recommendations were provided to tackle the obstacles faced, also taking a look at the initiatives taken by other nations to address problems encountered by them.



In conclusion it can be said that India is undeniably on the path to achieve a healthier planet without missing out on economic growth. Despite stumbling blocks the path forward is not veered from. A long-term vision and perseverance powered by consecutive efforts will launch the nation towards the ultimate goal of becoming a sustainable developed nation.

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