



Original Article

# An Analytical View towards Implementation of Circular Economy to Protect Against Environmental Degradation. A Study with Respect to India

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## Abstract

A circular economy model can be stated as that type of economic model in which normally products will be designed in such a way so that they can have durability alongwith the capability to reuse and recyclable. The growing problem of environmental degradation throughout our world has urged the researchers, academicians, governments, business organisations and other concerns to think and judge on the idea of introducing the processes of circular economy with its principles of reuse, recycle, refurbish, etc to protect against the modern day's environmental degradations as well as to reduce all types of pollutions. At present India is moving through a phase from the general economic model to much needed circular model to have a economic system whose main aim will be to reduce overall waste production and maximise resources utility to have more economic benefits. This study was conducted to understand the advantages what can be achieved by transforming from a general model to a circular model to help in creating our planet Earth a better place to live in. This study has basically been explorative to find out the general awareness and understanding of a normal, educated and a rational individual of our modern societies regarding the need and the benefits of living a proper environment friendly life to protect not only the current generation but also the future generations of living beings from the bad effects of environmental degradations. The data needed for this research was collected by applying various methods of primary and secondary collections methods which then went through some standard scrutiny and coding procedures and thereafter the edited data was analysed and presented below.

**Keywords:** Carbon Emissions, Circular Economy, Economy, Environmental Degradation, Green Jobs, Indian Economy, National Resource Efficiency Policy, Pollution.

## Introduction

### Background of Indian Economy

Starting from the time of Indian independence in 1947 till 1991, governments of India followed the Soviet model and emphasised on various protectionist economic policies and the successive governments of India had a number of public sector organisations including railways, airports, highways, ports, etc, which were totally under the control of Indian government. Thereafter the Indian governments also had significant control over other important sectors like banking, insurance, telecommunications, fertilizers, chemicals, other essential utilities, which were nationalised at various different points of time after the Indian independence from the british ([https://en.wikipedia.org/wiki/Circular\\_economy](https://en.wikipedia.org/wiki/Circular_economy)).

### Current State of Indian Economy

Some situations like acute balance of payments alongwith the end of cold war between U.S.A. and U.S.S.R. helped Indian economy to move towards adopting economic liberalisation polices ([https://en.wikipedia.org/wiki/Circular\\_economy...](https://en.wikipedia.org/wiki/Circular_economy...))

The current state of Indian economy can be termed as a very fast developing mixed economy with some significant and important sectors like service, agricultural, etc, with a strong focus of achieving development with developments of infrastructure throughout the country.

Currently Indian economy is undergoing a strategic transformation from the orthodox "take-make-dispose" economic model to a much discussed and needed circular economic model to reduce overall productions of waste, to maximise resource utility to achieve better economic benefits. This strategic shifting will mainly focus on initiating activities like reducing wastes and recycling and reusing of already used materials (Ananthi Rajayya, Rajiv Nair, Viswanathan Korthiayani, 2025).

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### Circular Economy :

The idea of Circular Economy processes deals with considering a product as a service and using it as long as possible by implementing measures like repairing , reusing , recycling , refurbishing , etc ([https://en.wikipedia.org/wiki/circular\\_economy..](https://en.wikipedia.org/wiki/circular_economy..)).

### Benefits of Circular Economy Model

Some of the benefits of having circular economy model are as follows :

- 1) **Reduces Carbon Emissions** : The foremost benefit of all circular economy model will be a much needed shift from the age old practices of using fossil fuels causing environmental pollution through carbon emissions and using other raw materials for once and then discarding them causing and scarcity of natural resources(<https://gaiacompany.io>)
- 2) **Conserving Natural Resources**: The second most important benefit of implementing circular economic processes will be to prevent unnecessary wastages and try and increase the use of energy sources like Sunlight , wind energy , water energy , etc( <https://simplyeducate.me/what-is-the-circular-economy>) .
- 3) **Minimising waste** : The term minimising waste in context to circular economy means implementation of some well thought out practices where products and materials are kept in use for as long as possible through practices like repair , reuse , recycling and refurbishing , etc , which in turn goes on to help in conserving scarce resources and reduces environmental impact (<https://gaiacompany.io>) .
- 4) **Creates Green Jobs** : Green jobs refer to those types of jobs which goes on to help in protecting the surrounding environment by reducing different types of wastes which obviously includes industrial wastes caused from various industrial processes , alongwith helping in conserving natural resources and reducing carbon emissions to control the environmental pollution (<https://gaiacompany.io>).
- 5) **Extends Product Lifespan** : The basic concepts like repair , reuse , recycling of products , etc , of any circular economy model not only goes on to help in extending products lifecycle but also helps in preserving or conserving scarce and costly natural resources(<https://gaiacompany.io>).

### Disadvantages of Circular Economy Model :

Some of the disadvantages of having Circular Economy model are as follows :

- 1) **High Initial Costs** : As obvious the transition phase to circular economic model may need a huge amount of investments in developing infrastructure and introducing and implementing modern technologies to work with circular economy processes (<https://simplyeducate.me/what-is-the-circular-economy>).
- 2) **Problems in introducing supporting rules and regulations** : Some problems or challenges can come up from the existing population or employees of the organisations while introducing supporting rules , regulations , processes or procedures for proper

functioning of the circular economy model(<https://simplyeducate.me/what-is-the-circular-economic>) .

- 3) **Normal marketing activities can be disturbed** : The introduction of circular economic processes in various different types of business organisations can initially cause some problems for performing normal marketing activities (<https://simplyeducate.me/what-is-the-circular-economic>).
- 4) **Needs Changes in the normal behavioural pattern of the normal customers** : Adjusting to the circular economic practices and procedures needs the ordinary consumers of the organisations to change their existing habits and may be customs also which is not a easy aspect to achieve and can really cause some problems in proper implementation of circular economy model(<https://www.developmentaid.org>) .

### Benefits of Transformation to Circular Economic Model :

- 1) **Creation of Wealth from Wastes** : The main idea behind this point is to make wastes already generated from various different types of activities into proper and usable resources by adopting methods like recycling , repairing and reuse of those already generated wastes from different activities (<https://tipa-corp.com>).
- 2) **Improve the resource utility factor** : The introduction of measures like reuse , recycling , etc , will go on to improve the resource utility factor(<https://tipa-corp.com>) .
- 3) **Improve the surrounding Environment** : By protecting against emissions of big amount of green house gases, it helps in improving the surrounding environmental conditions (<https://tipa-corp.com>) .
- 4) **Economic Benefits** : This transformation to circular economy will go on to help in creating more jobs which in turn will create more economic outputs (<https://tipa-corp.com>) .

### Limitations of Transformation to Circular Economy Model :

- 1) **Obstacle from the existing citizens of a country** : The first form of obstacles or resistances are expected to come from the current generation of human beings who without properly understanding the ideas and concepts of implementations of circular economy model will start objecting or will try to resist to the implementation of activities just out of their personal feelings like fears , emotions , etc (<https://www.manutan.com/blog/en/circular-economy>) .
- 2) **Technical Issues** : The basic technical issues lies in the fact that even though we promote the ideas of reusing , recycling , etc , all types of materials cannot be properly recycled .(<https://www.manutan.com/blog/en/circular-economy>) .
- 3) **Increase in Financial Requirements** : A desired shift to circular economy processes will increase the financial needs which can give returns only in the long



run , creating a blockage on the capital invested for some time .

(<https://www.manutan.com/blog/en/circular-economy>).

#### **Objective of the Study :**

The first and foremost objective of undertaking this research study is to protect our scarce natural resources from unnecessary wastages and also to understand the level of awareness among the common people of the modern society regarding how to live a proper environment friendly life to protect not only the current generation but also the future generations of living beings in our planet from the bad effects of environmental degradations .

#### **Literature Reviewed:**

The literature review on the subject shows that with growing environmental degradations throughout the world the need for implementing circular economic model is increasing day by day which has attracted academicians ,researchers and other professionals of the modern world to conduct various different types of research in this area from which some were chosen and summarised below .

- 1) Kateshwar Chirumalla , Federica Balestrucci , Anna Sanno and Pejvak Oghazi , in their research article , “ The transition from a linear to a circular economy through a multi-level readiness framework : An explorative study in the heavy duty vehicle manufacturing Industries “ , stated that over the past decade , the basic idea of circular economy gained a lot of importance by providing practicable solutions to solve emergency environmental problems by providing opportunities to reduce unnecessary waste generations and save the scarce natural resources from getting extinguished .
- 2) GotteKumar in his research article titled ,” Recent trends in Indian Economy and Development “ , stated that as per the Central Statistics Organisation (CSO) , and the International Monetary Fund (IMF ) , the Indian economy is now regarded as a significant economy and can become much more powerful within a short period of time due to the factors like growth of service sector alongwith proper and timely implementation of measures like Goods and Services Tax , Make in India policy , Single window policy , etc , etc.
- 3) Ananthi Rajayya , Rajiv Nair and Viswanathan Korthiayani emphasised that the idea and concept of circular economy came into prominence due the growing environmental degradation alongwith the problem of solving the scarcity problem of natural resources which was caused by the orthodox production system of “ take-make-dispose “ model . The idea that the circular economic model can help in minimising waste and maximise the reuse of resources helped in promoting the idea of implementation of Circular Economy model which prompted various economic sectors which deals with scarce natural resources to adopt and implement policies and practices related to Circular Economic model as a important strategy to achieve Agenda 2030.

#### **Research Methodology :**

This study was exploratory in nature to find out the current level of understanding of the general population of our country, India regarding the idea and concepts of circular economy model.

First of all some suitable and relevant educational , professional and business organisations was selected based on their proximity to the knowledge regarding various economic models .

Thereafter in each of the selected organisations some respondents were selected on a random basis and was interviewed to collect their knowledge about the circular economic model and its benefits , etc , etc .

#### **Data Collection :**

The required data was collected by applying both the direct and indirect methods of collections of Primary and Secondary Data .

#### **Direct Method :**

In order to collect primary data first of all a structured questionnaire was developed .

#### **Development of a Structured Questionnaire :**

In order to conduct proper interviews on some randomly selected respondents from various sectors of the modern society to know their views and ideas on implementation of circular economy we developed a well thought out and structured questionnaire covering all areas .

#### **Conducting offline Personal interview :**

To collect normal or general view of people belonging to various different categories of the modern societies of the modern world regarding transformation from a traditional economic system to a much needed circular economic system some offline face to face interviews on some randomly selected respondents was conducted .

#### **Indirect Method :**

The collection of secondary data related to our study was done by consulting various published materials in print books , e-books , newspapers , magazines , journals , websites , working papers , edited volumes , etc .

#### **Data Analysis :**

Data obtained from both the primary and secondary sources was properly scrutinised and thereafter the edited data analysed and the results are given below .

#### **Findings :**

#### **Gaps in introducing Circular Economy Model :**

Some of the significant problems in introducing Circular Economy model are as follows :

- **Lack of proper technology and required infrastructure :** The basic problem of introducing circular economy model lies in the fact that there is a lack of proper and efficient technologies and infrastructures to collect , sort and reprocess or recycle materials(<https://www.amulyacharan.com>).
- **Lack of Proper and Supportive Legislations :** Proper and supportive rules , regulations and policies are needed both at the local or regional level and at the central level to enable a smooth transition to a circular economy .
- **Economic Problems :** Adopting new circular economic models both at the corporate or individual business level and at the overall country levels needs huge amount of investments which may be difficult for



individual business units alongwith the country to undertake, causing hindrances in overall implementations of circular economy model .

- **Insufficient Government Plannings /Incentives/helps** : Lack of proper planning alongwith inappropriate helps from the governments in providing proper and suitable incentives , subsidies or tax breaks will go on to deter individual organisations from investing in circular business practices leading to a overall delay in transformation to circular economy model(<https://www.amulyacharan.com>)
- **Improper Standardizations** :Improper standardization and measuring systems creates a great deal of blockage in measuring the proper progress done in introducing circular economy measures (<https://www.amulyacharan.com>).

#### Suggestions :

In order to overcome the above mentioned limitations we will have to take some well coordinated steps which are as follows :

- 1) **Increase Awareness among business units and common people** : First and foremost measures to be taken is to improve the level of understanding of the underlying principles of circular economies among the ordinary business units and the common people so that they get attracted or motivated towards the circular economic processes . (<https://www.copperberg.com>).
- 2) **Educate the final users about the benefits** : In order to increase the acceptance level all concerned organisations should try to educate the final users of the products about the benefits of this system .(<https://www.copperberg.com>).
- 3) **Proper measures needs to be adopted to have proper data exchanges** : Proper consensus on data sharing formats and methods are needed to asses and understand the progress of the circular economic models(<https://www.copperberg.com>).

#### Protection against deterioration of surrounding Environment\_:

Some points regarding protection of surrounding environment :

- 1) **Reduces Waste Pollution** : The basic principles of circular economy like reusing , repairing , recycling goes on to help in reducing generation of different types of waste including industrial waste(<https://www.europari.europa.eu>).
- 2) **Reduces Pollution** : By implementing the policies and attitudes of reusing , repairing , recycling , etc , goes on to help a lot in reducing the pollution of the surrounding environment (<https://www.europari.europa.eu>).
- 3) **Conserve Natural Resources** : One of the main importance of this concept lies in its target to guard against depletion of natural resources by reducing the demand for new products (<https://worldcomag.com/the-benefits-of-adoption..>) .
- 4) **Protection against adverse climate changes** : By reducing unnecessary wastages of scarce and costly energy resources which in turn goes on to reduce the

overall amount of carbon emissions which in turn helps in fighting the hazards happening from unwanted climate changes(<https://worldcomag.com/the-benefits-of-adoption..>) .

#### Circular Economy in India :

Presently circular economy in India is still in an early stage but it is supported by various government policies and has good potential for creating more amount of jobs leading to much better economic growth for the country.

Some of the initiatives which has been taken for smooth implementation of circular economy are as follows :

- a) An Circular Economy cell has been arranged at NITI Aayog to organise , coordinate and implement various different types of executive plans to properly implement circular economy model (<https://niti.gov.in>).
- b) Some rules and regulations in relation to waste management has been formulated (<https://www.mygov.in/home/blog/...>).
- c) Certain measures regarding waste disposal has been established (<https://www.mygov.in/home/blog/..>)
- d) The Indian Government has devised several strategies for industries to enhance the practice of recycling of previously utilised materials (<https://www.mygov.in/home/blog..>).
- e) Some policies like “ National Resource Efficiency Policy “ has been formulated to introduce efficient resources management systems and support the idea of “ Zero-Waste “ (<https://www.moneycontrol.com>).

To really make the shift towards circular economy there needs to be more teamwork and coordination among different members of the society to come up with better policies and measures to make the introduction process happen smoothly (<https://simplyeducate.me/what-is-the-circular-economy..>) .

#### Future Prospects:

The main idea behind circular economy lies in its concept of having a zero-waste future by accepting and implementing the policies and practices of repairing, reusing , recycling ,etc . but this vision of zero-waste future is facing various constraints like financial problems , inadequate technological and infrastructural problems , alongwith improper regulatory supports from the governmental levels .

Thereafter it is seen that while the processes of circular economy has made some progress in many developed countries it is facing some obstacles in developing countries in the infrastructural and financial front (<https://simplyeducate.me/what-is-the-circular-economy>)

So we can say that well coordinated efforts from all concerns is needed for smooth transformation (<https://simplyeducate.me/what-is-the-circular-economy>) .

#### Conclusion:

From this study it can be concluded that circular economy processes can cause reduction of unnecessary productions(<https://simplyeducate.me/what-is-the-circular-economy>) which will reduce unnecessary generation of various different types of wastes which in turn will obviously go on to help in proper sustainable use of scarce natural resources and reduction of carbon emissions to help





in fighting against the unwanted hazards of unwanted climate changes. Therefore, we can conclude by saying that implementation of Circular Economy is absolutely needed to not only protect the scarce natural resources but also to protect the environment from further degradations.

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#### Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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