

Circular Economy

Mains: GSIII - Economic Development

Why in News?

The World Circular Economy Forum (WCEF) recently concluded in Gandhinagar, highlighting the growing importance of the circular economy (CE).

What is Circular Economy?

- **Circular economy** - It is an economic system that seeks to minimise resource extraction and waste generation by keeping products, materials and resources in use for as long as possible.
- Unlike the traditional linear model “take, make, use and dispose”, a circular economy promotes:
 - Reduce, Reuse, Repair, Refurbish, Remanufacture, Recycle, Recover.
- **Objective** - To decouple economic growth from resource depletion and environmental degradation.
- **Evolution of the Concept** - The term “circular economy” is associated with Pearce and Turner (1990).
 - However, the underlying ideas existed earlier through concepts such as closed-loop economy, cyclic economy and closed spaceship economy.
- Initially, the focus was on resource scarcity, pollution and waste containment.
- Later, CE has evolved from a defensive environmental approach into a broader economic and development strategy.



3 Dimensions of Circular Economy

1. How - Principles

- Reduce resource use and waste.
- Reuse, repair and refurbish products.
- Remanufacture and recycle materials.
- Recover resources where necessary.
- Design for durability and recyclability.

2. Why - Objectives

- Reduce waste and pollution.
- Conserve resources and improve efficiency.
- Minimise environmental degradation.
- Promote sustainable economic growth.
- Ensure intergenerational sustainability.

3. Who - Enablers

- Government and policymakers
- Industries and businesses
- Consumers and communities
- Academia and researchers
- Waste-management sector

What are the Key Gaps in the Circular Economy Approach?

- **Overemphasis on Recycling** - A major concern is that CE is often reduced to recycling alone than reduction, reuse and repair.
 - Incineration or recovery may also be wrongly presented as circularity.
 - This can allow fundamentally linear production systems to continue under a "circular" label.
- **Neglect of "Reduce"** - Reduce receives comparatively less attention than reuse and recycling.
- **Business Model Gap** - Although business models are considered central to CE, they appear explicitly in only a minority of definitions.

- A genuinely circular business model could involve: Product-as-a-service, Leasing + Repair + Take-back systems + longer product life.
- **For example**, simply recycling discarded mobile phones does not make the entire business model circular if products continue to be designed for rapid replacement.
- **Social Equity Deficit** - Social equity and the interests of future generations remain relatively weak elements in CE frameworks.
 - A truly sustainable circular economy should also address -
 - Employment transitions.
 - Informal waste workers.
 - Access to affordable products and services.
 - Distribution of costs and benefits.
 - Intergenerational equity.
 - Country and Sector-Specific Approaches
 - Circular economy does not have a single universal implementation model.

Specific examples

- **China** - Circular Economy Promotion Law, 2008, emphasises the 3R approach — Reduce, Reuse and Recycle.
- **European Union** - Focuses on resource efficiency, closing material loops and circular supply chains.
- Industry-specific examples -**
 - **Textiles** - Reuse, recycling and employment transition.
 - **Automobile sector** - End-of-life recovery, remanufacturing and component reuse.
 - **Construction** - Deconstruction and reuse of building materials.
 - **Eco-industrial parks** - Exchange of waste and by-products between industries.
 - **Packaging/FMCG** - Increasing use of recycled materials and closed-loop packaging systems.

What is its Significance for India?

- **Resource Security** - Reducing dependence on virgin raw materials can improve resource and supply-chain security.
- **Waste Management** - India faces growing challenges from plastic, electronic, construction and municipal waste.
- **Employment** - Repair, refurbishment, recycling and remanufacturing can generate green jobs, particularly for informal workers.
- **Industrial Competitiveness** - Efficient resource use can reduce input costs and improve the competitiveness of Indian industries.
- **Climate Goals** - Reducing extraction, production-related emissions and waste can contribute to India's climate and sustainability objectives.
- **Sustainable Urbanisation** - Circular approaches can support sustainable cities through resource-efficient infrastructure, waste management and reuse of materials.

What could be done?

- **Follow the Waste Hierarchy** - Policy should prioritise Reduce, Reuse, Repair, Refurbish, Remanufacture, Recycle, Recover rather than treating recycling
- **Promote Circular Product Design** - Encourage durability, repairability, modularity,

recyclability and longer warranties.

- **Transform Business Models** - Promote leasing, product-as-a-service, take-back systems and sharing models rather than only end-of-life recycling.
- **Integrate Social Equity** - Recognise and formalise the role of informal waste workers while ensuring a just transition towards green employment.
- **Develop Sector-Specific Strategies** - Circularity should be adapted to sectors such as textiles, automobiles etc. while maintaining common national principles.
- **Strengthen Measurement** - India needs clear indicators measuring material consumption, product lifespan, reuse rather than just measuring recycling rates.

What lies ahead?

- Circular economy should not become merely a new label for conventional recycling.
- Its transformative potential lies in redesigning how products are made, used, repaired, reused and eventually recovered.
- The focus should therefore shift from a narrow “waste-to-value” approach to a whole-system transformation of production and consumption, while ensuring social and intergenerational equity.

Reference

[Down To Earth| Circular Economy](#)

