Vol.2 Issue-1, SEP 2021 (e-ISSN: 2582-8223)

JUST AGRICULTURE
multidisciplinary e-Newsletter

Circular Economy and Sustainable Development for Economic Growth

V.David Chella Baskar[1], Sunder Pal[2]
Rani Lakshmi Bai Central Agricultural University, Jhansi, UP
ARTICLE ID: 026

Introduction

The circular economy is a method of utilizing resources in which elements are reduced, reused, and recycled, produce as little as possible, and when it's necessary to use the product, re-use the parts that can't be recycled. Businesses and consumers alike will significantly benefit from the circular economy. Linear economies consume raw materials, transform them into products, and then dispose of them. An economic model built on a circular economy will close the gap between the production process and the natural cycles of ecosystems - which are ultimately vital to human survival.

Circular Economy (CE) is a concept that has emerged in food supply chains due to the need for organizations to be more sustainable. The circular economy is an alternative to the linear economy (make, use, dispose) where resources are kept in use, the maximum value is obtained from them during use, and at next utilization, the products and materials are recovered and regenerated. In realizing short-term consumption, the current model of production, management, and flow of resources, goods, and services are creating an unsustainable position for the planet. Linear consumption factors explain the limits of make-use-dispose and identify risks involved in global economic growth. By implementing this system, companies are proving that it is much more cost effective to repurpose resources than to create them from scratch. There will be a presentation on the constructs for transforming businesses with innovative business models in a sustainable direction, introducing a circular business model geared towards value addition.

1. The Principles of Circular Economy

Waste is a resource: All components of the biodegradable material return to nature, as well as the components of the non-biodegradable material.

JUST AGRICULTURE
multidisciplinary e-Newsletter

Second-handuse: The reintroduction of products that do not meet the needs of the original consumers back into the economic circuit.

Reuse: Create something new using items, or parts of those items that still work, that can be repurposed.

Reparation: The second life for damaged products. The validity of the products can be extended with this principle.

Recycle: Materials derived from waste can be used. The purpose of the material can be available in real time even after its shelf-life. A common feature of the circular economy, rental properties are often established to eliminate product sales.

2. Benefits of Circular Economy Model

1. Reducing Greenhouse gas Emission

The linear model of production and consumption has been followed by humanity since the industrial revolution. The raw material is integrated into goods that are subsequently sold, used, and turned into waste that has often been unconsciously discarded and managed. The circular economy is, on the other hand, an industrial model that is committed to ecological regenerative design and aims to improve the performance of resources as well as combat climate change's volatility. Despite its operational benefits, it also has many strategic advantages, and it is bringing together a lot of value creation potential within the economic, business, environmental, and social spheres. By optimizing the agricultural productivity and by decreasing the negative externalities brought by the linear model the emission of a greenhouse can be reduced with the application of circular economic models. This is because of the use of renewable energy, which is less polluting than fossil fuels over the long run.

2. Resilient and regenerative soils

By utilizing anaerobic processes to increase soil nutrients, the circular economy has a positive impact on agriculture. By returning "waste" to the soil in this way, the soil gains health and resilience in addition to fewer residues to deal with, encouraging the ecosystems that surround it to thrive. As a result of a circular economy model applied to the food system in Europe, 80 percent of the use of artificial fertilizer would be reduced and soils would be

JUST AGRICULTURE
multidisciplinary e-Newsletter

restored to a natural balance, according to the study conducted by Ellen MacArthur Foundation.

3. Externalities

There are better steps taken to manage externalities such as land use, pollution of soil, water and air, and the emission of toxic substances by following the principles of the circular economy.

4. Enhanced Economic growth

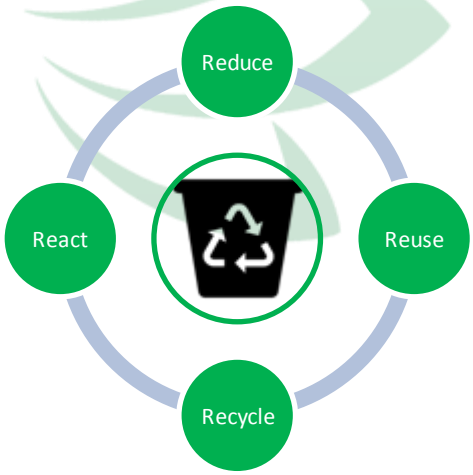
Economic growth is intertwined with resource consumption, and this has to be decoupled.GDP can increase through an increase in revenues from new circular activities and a decrease in production costs by getting products and materials to be more functional and disassembled and reassembled easily.

5. Conservation of Natural resources

A circular economy model has the potential to contribute more than raw material extraction, which is common with linear models which can save up to 70% of materials savings.

6. Economic engine (Employment)

As a circular economy produces more entry-level and semi-skilled jobs, new regulations (including taxes) and a restructured labour market can increase local jobs as denoted by the world economic forum. By adding designers and mechanical engineers, one could create products and materials that are easy to disassemble and last longer after being transformed; Innovation processes and business models have led to the creation of new businesses (and niches); Lower prices lead to an increase in spending and consumption.



Basic Circular Economic Model

JUST AGRICULTURE
multidisciplinary e-Newsletter

3.Challenges for Circular Economy:

Circular economies are not yet well established in the current economic system, due to some issues, such as:

- Externalities such as social and environmental costs aren't considered in prices, giving priority to economic decisions based on market signals instead of people and nature.
- During a time of low raw material prices, alternatives such as good quality secondary resources are not competitive.
- Developing circular economy business models is more difficult since most investors still work within linear economies, and upfront investments are occasionally necessary.
- Since most investors still operate under linear economy logic, developing circular economy business models is usually difficult; upfront investments are sometimes required.
- It is still difficult to find circular alternatives to products and services, but the demand is growing.
- During the past decade, it has become increasingly difficult to find qualified professionals with technical skills or knowledge of information and communication technologies (ICT).

4. Conclusion

In order to promote sustainable development, the circular economy is needed today; however, these scientific areas are not independent of each other, their relationships, interactions, and synergies should be developed further and studied. To reach sustainability goals, the sciences must also work in interdisciplinary ways and connect with one another as well as overcome potential economic disruptions, expand technological capacity, and address various environmental issues. To address circular economy and sustainability issues, a new scientific dialog is needed, and new directions are being developed to bring all the sciences together to strengthen the nexus between engineering and the natural sciences. In the context of circular economy and sustainability, promotes innovation processes related to technological and economic solutions and solutions for social, economic, and environmental problems.