

# UNDERSTANDING CIRCULAR ECONOMY AND SUSTAINABLE DEVELOPMENT AWARENESS "

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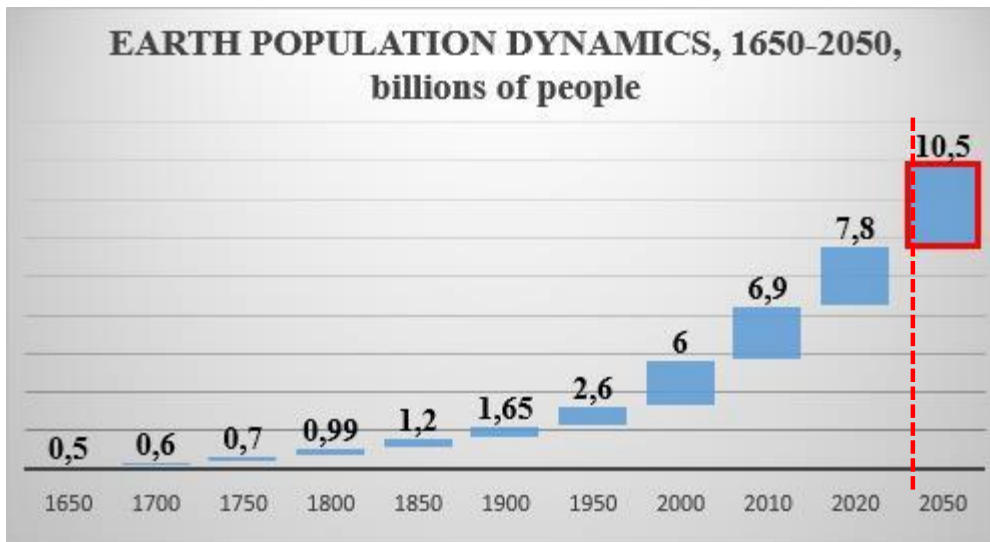
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The basic objective of this scientific approach is focused on shaping the theoretical and conceptual framework on the circular economy and highlighting the importance of awareness of each of us of the need to implement circular principles, sustainable development in all economic sectors and our daily practice.

The circular economy and sustainable development are not limited to certain materials or sectors, but represent a systemic change due to the contribution of each of us regardless of institution, sector of activity, ethnicity or race.

Education for circularity, sustainability plays a very important role in this regard, assigning itself the function of spreading and promoting from an early age a rational, responsible, conscientious behavior of natural capital.

As early as 1798 Thomas Malthus in his work „Essay on the Principles of Population” predicts the risks of population growth. According to Malthus’ theory the population grows in geometric progression, while livelihoods increase in arithmetic progression.(Malthus, 1798)



Source: Elaborated by the author according to the sources (Meadows, 1972)

The rate of population growth in recent decades is downright explosive, while the rate of availability of natural resources is worrying.

This pessimistic view of Malthus was to be shared by other nineteenth-century authors disillusioned by the disastrous consequences of the industrial revolution and economic progress that led to social inequalities, but above all to the deterioration of the environment.

John Stuart Mill, Thorstein Veblen, Walter R. Stahel, David Pearce, Kerry Turner are just a few of them.

„Why prosper, produce and consume if these actions lead to waste and depletion of natural resources?”

In fact, this question still seems to be relevant, and the answer and solution is a no waste production and consumption, so a circular economy.

Chapter 2 of the book „Designing for the Circular Economy” describes the concept of the circular industrial economy stating that in fact sustainable development and the circular industrial economy are the two sides of a coin, the first representing a „qualitative” world with happiness as an objective, the second a material world with the objective of decoupling the creation of wealth from the consumption of resources, referring here to the efficient use of resources and their capitalization. (Charter, 2019)



Fig 1. Situating society, sustainable development and a Circular Industrial Economy Source: (Stahel, 2017)

Thus, the concept of circular economy emerged as a reaction to the aspiration for sustainable growth, in the context of the growing pressure that production and consumption exert on resources, the environment and the planet.

Making a generalization of events and works on circularity, we distinguish several historical periods of formation and development of the circular economy: the embryonic period, the intermezzo period, the period of expansion and the period of political validity.

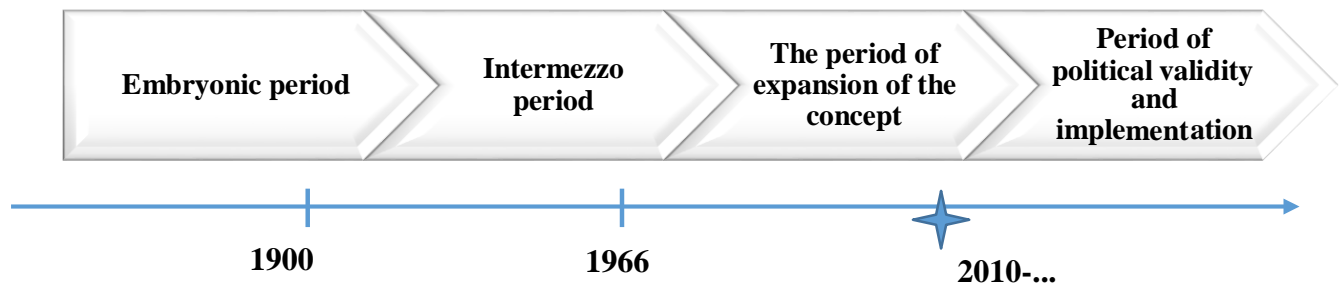


Fig.2 Chronology of formation and development of the concept of circular economy (made by the authors)

**Embryonic period** - (... 1900) is characterized by the occurrence of various works on the environment, which highlights the need to protect natural capital but also raises the issue of waste management.

During this period, an attempt was made to design an organized waste management and collection system, the main waste from that period being coal ash from brick manufacturing.

Also during this period, devastating outbreaks of cholera occur as a result of the dramatic increase in waste. As a result, incineration plants appear (1874), but they prove to be harmful due to toxic gas emissions and their production is stopped.

Industrial recycling of metals, especially metals such as iron and steel, is beginning to be practiced.

**The intermezzo period (1900-1966)** - intensifies strategies regarding waste management. The attitude towards sanitation and equity towards the environment changes in a positive way. A significant impact in this regard had the famous work *“Silent Spring”* in 1962 written by the American biologist **R. Carson**.

**This book** rigorously describes the effects of excessive and random use of synthetic pesticides, especially of the pesticide called “DDT - Dichlor-Diphenyl-Trichloroethane” on the ecological system.

The book sparked heated political debates in the United States, which eventually led to a ban on the use of DDT. “Silent Spring” was also an incentive to set up an Environmental Protection Agency in the United States in 1970.

At the same time, during this period, the application of recycling was extended to bottles and plastics. Attempts to repair and recondition is attested in the automotive industry.

**The period of expansion of the concept (1966-2010)** - the transition point to another period in the formation of the concept of circular economy, from our point of view is marked by the publication of Boulding’s publication “The Economics of the Coming Spaceship Earth” in 1966.

This paper, incorporating the theme of circularity, was a point of reference, a source of inspiration and reflection on sustainability and global environmental challenges for other researchers.

There are more and more works in which we find the idea of establishing a global state of balance between the social, economic and environmental components.

The 1972 Report “The Limits to Growth”, which actually laid the ground for understanding the interrelationships between global ecosystem support and the future of human civilization, then the

Brutland Report "Our Common Future" in 1987 which establishes the intention to compromise, and the need to conserve especially non-renewable resources had a particular impact on the expansion of the circular economy concept.

However, the circular economy as an applicability only gained consistency in the 2010s, with the emergence of the Ellen MacArthur Foundation, whose mission is to accelerate the process of transition to the circular economy.

The year 2010 marks the beginning of a new period of development of the circular economy.

**The period of political validity and implementation (2010-present)** - with the founding of the Ellen MacArthur Foundation, the circular economy gains political validity and conceptual clarity in the true sense of the word. There is a more critical and responsible involvement in the conduct of business and the use of natural capital.

At the same time, this period must be focused on promoting an education towards circularity, towards sustainability, in order to shape in the future a conscious, responsible behavior of every inhabitant of the Earth towards its resources, **regardless of institution, sector of activity, ethnicity or race.**

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