

Circular Economy and ESG – A European Perspective for Sustainable Development and Mitigation of Climate Change Effects

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Abstract: *This research presents, from two perspectives (the global perspective and the European Union's), the urgency of fighting climate change as an essential element for achieving sustainable development. In this context, it explores the synergy between two concepts that are usually approached separately: circular economy and ESG (environmental, social, governance). This synergy and its benefits are set forth in the larger scope of the 2030 strategy of the United Nations for Sustainable Development Goals. Within this framework, an assessment of the EU's leading role (in supporting and implementing ESG and circular economy) showcases that, in the past quarter century, the European Union has become a supplier of valuable solutions for sustainable development and a catalyst for the rest of the world in the mitigation of climate change effects.*

Keywords: *climate change, sustainable development, circular economy, ESG, European Union.*

JEL classification: O44, Q20, Q54, Q56.

Approach and Methodology

The research framework addresses the objective of the urgency to mitigate climate change effects, based on global meteorological data, and with a focus on the European Union. It introduces the contribution of circular economy and ESG to achieving sustainable development (which includes as a key component in keeping climate change under control). In order to both speed up the process of mitigation of climate change and increase the efficiency and effectiveness of this process, the research proposes a fusion of the two approaches (the circular economy and ESG).

1. The seriousness of climate change and the EU's perspective

Climate change represents one of the greatest challenges of contemporaneity, if not the biggest. This statement is far from being a matter of scientific debate, as climate change affects our daily lives, economic activities, and the prospects of humankind in the medium to the long term. On July 27, 2023, based on data from the European Union and the World Meteorological Organisation, the United Nations Secretary-General presented the current climate situation in a rather dramatic way: "The era of global warming has ended; the era of global boiling has arrived" (United Nations, 2023). On a similar note, on July 20, 2023, US President Joe Biden made the following remarks on the climate

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crisis: “[...] And that’s what climate change is about. It is literally, not figuratively, a clear and present danger.” (White House, 2023). Multiple data concerning the seriousness of climate change have been confirmed by reputed international organisations and by numerous scientific institutes, such as: The Intergovernmental Panel on Climate Change (IPCC) or World Climate Research Programme (IPCC, 2023; WCRP, 2023).

With reference to recent years, the data points to the fact that during the period 2013 – 2022, the average near-surface air temperature at the global level has been 1.13 to 1.17 degrees Celsius higher than during the period before the mature stage of the first Industrial Revolution (1850 – 1899). This proves that the temperatures in the aforementioned time interval have been the warmest recorded so far. In the same context, the US National Oceanic and Atmospheric Administration announced: “The world just sweltered through its hottest June in the 174-year global climate record... The average global surface (land and ocean) temperature in June was 1.89 degrees F (1.05 degrees C) above average, ranking June 2023 as Earth’s warmest June on record. June 2023 was 0.23 of a degree F (0.13 of a degree C) warmer than the previous record set in June 2020” (NOAA, 2023).

What is of particular interest to the European Union is that the increase in temperature has been faster in Europe than on any other continent. During the period 2013 – 2022, the average temperature in Europe has been 2.04 to 2.10 degrees Celsius higher than in the pre-industrial era (European Environment Agency, 2023).

According to the Copernicus Climate Change Service, the year 2022 was, after 2020, the second warmest year on record in Europe. During the period 2018 – 2022, the average temperature in Europe has been 2.2 degrees Celsius higher than during the 1850 – 1899 period (Copernicus Climate Change Service, 2023). These figures are particularly important because they already exceed the limits envisaged in the 2015 Paris Agreement, which aimed at keeping global warming, until the end of this century, to under 2 degrees Celsius as compared to the pre-industrial era. They are in plain contradiction with the more ambitious target of keeping global warming under 1.5 C degrees (UNFCCC, 2023).

In light of the above, one can say that the European Parliament and the European Commission (European Parliament, 2023a), as well as other European institutions, are entitled to consider *the mitigation of climate change effects* a top priority, at least on two grounds:

- The effects of climate change are more severe on the European continent than in other regions of the world and, therefore, they require a more substantial and immediate response.
- The strong moral arguments in favour of supporting the sustainable development, which would ensure, in a responsible way, the wellbeing of future generations.

To these, one can add the leadership position shown by the European Union in areas related to environment protection, circular economy, or ESG that provide solutions for achieving sustainable development. The European Union has also been recognized as a leader in international climate diplomacy and as a pioneer in innovative environmental policies such as the Emissions Trading Scheme (Grabbe, H., Lehne, S., 2019) introduced in 2005. ETS was the first carbon market in the world based on the “cap and trade” principle and, at the same time, the largest one as far as the percentage of gas emissions is concerned (European Commission, 2023). In order to put the European Union’s

contribution to pioneering the Emissions Trading Scheme mechanism in the global context of 2023, one can add that China introduced an Emissions Trading Scheme on 16 July 2021 (16 years after European Union) and the Chinese mechanism only regulates the power generation sector (while the European Union scheme covers both power generation and manufacturing plants (European Parliament, 2023b). Due to the size of the Chinese economy and its focus on manufacturing, the Chinese Emissions Trading Scheme, even if limited to power generation, covered in 2021 4.5 billion tons of CO₂ emissions, while the European Union Emissions Trading Scheme covered in 2021 only 1.6 billion tons of CO₂ emissions (Roldao, R., 2022).

Over the past 25 years, by means of its numerous decisions, activities, and participation in international negotiations, the European Union has become a supplier of best practices (related to environment protection and fighting climate change) for all the other major actors participating in the global economy (Ruiz-Campillo, X., 2020).

In order to accurately place the European Union in the global context as regards the responsibilities for climate change, it is useful to clarify the share of the European Union in global population, global Gross Domestic Product (GDP), and current accumulated carbon dioxide emissions (CO₂). This data is synthesised in *Table 1*.

Table 1. Share of main actors of global economy in total population, GDP, current and cumulated CO₂ emissions - in %

Country, organisation, or geographical region	Share in global population 2023	Share in nominal global GDP in 2023	Share in global CO ₂ emission in 2021	Share in cumulated CO ₂ emission during the period 1715 - 2021
Europe	9.22%	22.09%	14.27%	37.24%
EU – 27	5.57%	14.74%	7.52%	20.32%
USA	4.22%	23.84%	13.49%	29.24%
Japan	1.53	3.91%	3.15%	4.44%
China	17.70%	17,2%	30.90%	17.28%
India	17.75%	3.32%	7.30%	3.96%
Africa	18.16%	2.79%	3.90%	3.41%
South America and Caribbean region	8.34%	5.61%	2.88%	3.07%
Total	8.048 billion	112.6 trillion US \$	37.12 billion tons CO ₂	1.5 trillion tons CO ₂

Source: Data compiled by the author from different sources, mostly from: www.population.com – Countries by GDP (for share in global GDP); CEIC data global database at www.ceic.com; Our World in Data, <https://ourworldindata.org/co2-emissions> (for CO₂ emissions).

The data from *Table 1* deserve an in-depth analysis because they reflect both the current contribution of the European Union to global CO₂ emissions (a mere 7.52%) and the share of its member states in the cumulated CO₂ emissions since the beginning of the

first Industrial Revolution (a more consistent 20.32%).

The current low level of EU's contribution to the global CO₂ emissions is the outcome of several factors, such as:

- The long-term commitment of the European Union and its member states to reduce the impact of polluting activities on the environment, and their resolve to fight climate change.
- The declining share of the European Union in the global GDP from 36.3% in 1960 to 14.74% in 2023 (Guardia, A.B., 2019). It is noteworthy that a declining percentage in global production does not necessarily imply an absolute reduction (meaning smaller physical quantities), it just indicates a smaller percentage of a total that has grown at a faster pace.
- The reduction of environmental pollution thanks to the breakthroughs of science and technology, two areas in which the EU excels. Though this argument is valid, it should be accepted with a certain reserve. Even if scientific and technological innovation, as well as modern management, allow for the decoupling of *production growth* from *the increase of environmental pollution*, there is another issue we should consider: the correlation between how much of the global output is produced in one country or region and how much that country or region negatively impacts the environment. The more one country or region produces, the more it pollutes, even if the correlation is not linear.
- The delocalisation of the European production to other regions, as a result of globalisation and the emergence of global value chains. This means that European companies are still major economic players in the world economy, in terms of output and financial results, but many of them carry out their operations, to a significant extent, in other regions.

At the same time, with reference to the data in Table 1, an important clarification is necessary regarding CO₂ emissions. Although CO₂ (carbon dioxide) has a major contribution to global warming, greenhouse gas (GHG) emissions also include other gases, such as: methane (CH₄), and nitrous oxide (N₂O), as well as gases used in various industries: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), nitrogen trifluoride (NF₃) or ozone and even water vapor (US Energy Information Administration, 2022). Therefore, the design of a successful programme for fighting climate change needs a holistic approach. It should include and deal with all the types and sources of emissions that contribute to global warming and climate change.

A comment is also necessary regarding the European Union's low share of CO₂ emissions at present (only 7.52%). One may wonder why the EU takes a particular interest in the reduction of CO₂ emissions if its current contribution to global CO₂ emissions is only 7.52%. The answer is more complex if we view this matter from two perspectives:

- **From the historical perspective** the European Union with its current 27 member states contributed 20.32% to the total cumulated CO₂ emissions, since the beginning of the first industrial revolution. This level is almost 3 times higher than its present-day contribution to CO₂ emissions (7.52%). Hence, the EU, as a responsible organisation, is addressing the issue in a

long-term perspective.

- **From the present-day perspective**, the European Union contributes also in indirect ways to the global CO₂ emissions: the European companies have delocalised parts of their industrial activities to countries in other regions and, therefore, they are responsible for the CO₂ emissions in those countries/regions. At the same time, companies in the European Union are importing products from countries located in regions with lower pollution standards and thus they sustain a chain of polluting activities that are generating climate change.

In our view, a more comprehensive answer to the question “Why should the European Union take so much interest in reducing CO₂ emissions, if its contribution to global CO₂ emissions is only 7.52% currently?” is that:

- The EU aims at providing practical scientific and technical solutions for mitigating climate change effects not only in Europe, but also in the other countries and regions that are part of the global economy.
- The European Union intends to set an example of best practices that could be shared with its Western partners and with the developing countries as well.
- The EU is fully aware that global issues, such as environmental protection and climate change, cannot be solved by means of local solutions and approaches. Global issues require global solutions, and the European Union can act as both a provider of solutions and a catalyst for the discovery and implementation of adapted solutions in other parts of the world.

Securing sustainable development and fighting climate change represent two sides of the same coin. Solutions for these intertwined goals are complex, given the dimensions and contexts of the systems involved: planet Earth is inhabited by more than 8 billion people, located in more than 195 countries (World Population Review, 2023). These countries have different levels of development, different resources available, different cultures and values and different historical responsibilities.

The scale of these complexities may inspire a less optimistic perspective, but, in our view, good communication and persistence may lead to better alternatives. In general, local solutions are not useful at the global scale. That’s why we should refer to local examples and best practices that can be replicated regionally and globally. In our common endeavours, we should continue to communicate with all responsible entities, governmental and non-governmental, from all the countries in order to identify and implement more feasible solutions. **For global issues, such as climate change, local solutions may be useful only as pieces of a planetary puzzle acting together in a synergic way.**

In this context, by focusing on the EU’s perspective, our research explores how sustainable development and fighting climate change can be achieved through a holistic approach to circular economy and ESG (environmental, social, and governance). This holistic outlook would imply a combination of new designs, strategies, policies, and behavioural changes at the level of individuals, organisations, and societies.

In our opinion, the establishment of a synergy between circular economy and ESG may contribute to achieving sustainable development in general, and the goals related to fighting climate change in particular, as defined by the Paris Agreement as well as other national, regional, and international documents.

2. Circular Economy and ESG, as synergic solutions for sustainable development and mitigating climate change

Circular economy and ESG may be perceived as individual concepts, but both imply – either directly or indirectly - sustainable development. In fact, they are instruments for achieving this type of development. In this section our analysis focuses firstly on the content and significance of sustainable development and, secondly, on the gradual emergence of ESG and circular economy perspectives as vectors contributing to sustainable development.

Sustainable development is already a classical concept, popularised by international documents such as:

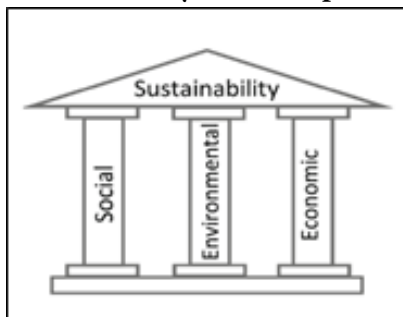
- The Stockholm Declaration of 1972, adopted at the first World Conference on the Human Environment and which led to the creation of the United Nations Environment Programme (UNEP).
- The UN Report – *Our Common Future*, also known as the Brundtland Report (1987).
- Agenda 21 of the United Nations, a result of the Earth Summit held in Rio de Janeiro (1992).

At the same time, sustainable development represents a globally accepted vision or strategy, as demonstrated in 2015 by the adoption by all UN member states of the 2030 Agenda for Sustainable Development. Although there are many definitions for sustainable development, basically it may be explained as: **“the development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”** (Brundtland Report, 1987).

To enable the further exploration of its meanings, sustainable development can be represented graphically as a three-pillar structure (*Figure 1*) or as a Venn diagram intersecting environmental, economic, and social dimensions (*Figure 2*).

The three-pillar structure representation of *sustainable development / sustainability* focuses on the essential dimensions that must be simultaneously dealt with for achieving sustainability: the environmental, the social and the economic dimensions. The three-pillar design emphasises the need for an equal and concurrent contribution of each dimension to achieving or maintaining sustainability in balance. The idea of placing the environmental pillar in the middle shows the centrality of the environmental protection in any approach that aims at achieving sustainability.

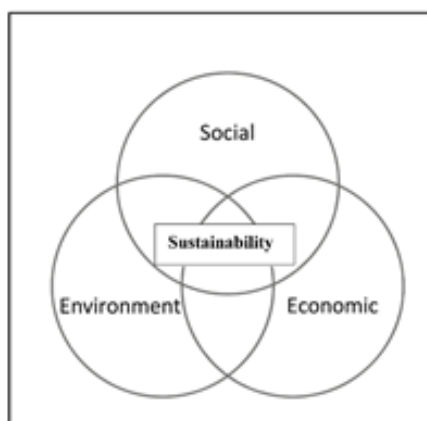
Figure 1. Sustainability as a three-pillar structure



Source: Purvis, B., Mao, Y. and Robinson, D. (2018): *Three pillars of sustainability: in search of conceptual origins*, the University of Sheffield, p. 3.

The Venn diagram puts sustainable development/sustainability at the intersection of environmental, social, and economic dimensions (Figure 2). The order in this enumeration is not arbitrary because **the environment** (planet Earth) provides the basis for and includes **human society** which, in turn, develops and carries out **economic activity**. This order of mention is particularly important for avoiding partial analysis of the phenomena and, consequently, for avoiding the design of partial solutions. Partial solutions cannot solve the general problem but they can be components / parts of a holistic solution. Therefore, partial solutions should not be rejected from the beginning, they must always be placed in the overall context.

Figure 2. Sustainable development as a Venn diagram (intersecting the environmental, economic and social dimensions)



Source: Representation adapted from Purvis, B., Mao, Y. and Robinson, D. (2018): *Three pillars of sustainability: in search of conceptual origins*, the University of Sheffield, p. 3.

These clarifications were deemed necessary because nowadays there are many well-intentioned approaches for environmental protection or for rendering the economic activities less damaging to the environment, but many lack a holistic approach and

deal only with one component (such as the environment) or even a sub-component (e.g., energy sources). Thus, they miss the interrelatedness of the three dimensions of sustainability and, especially, the social one (that involves many aspects from consumer behaviour to unemployment, from values to education).

2.1. Circular economy and sustainable development

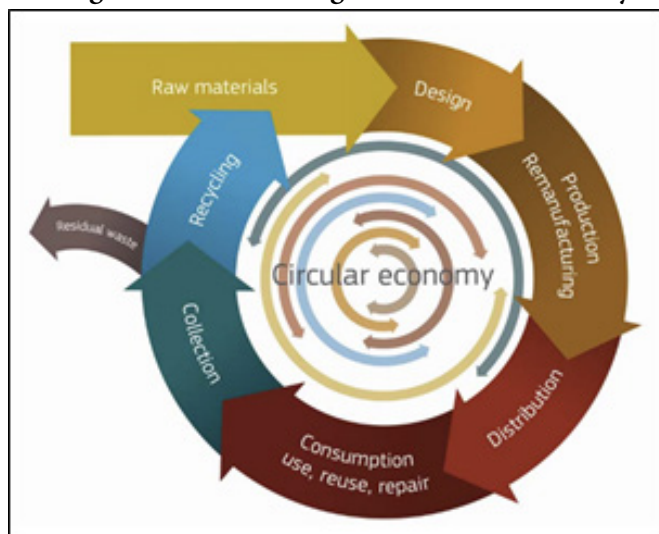
The relationship between circular economy and sustainable development is one from part to whole. A circular economy may contribute substantially to achieving sustainable development goals (SDGs), particularly environmental ones. In proof of this statement, a comprehensive analysis for understanding the impact of circular economy strategies on SDGs identified that circular economy strategies may positively contribute to the achievement of all 17 SDGs, but to a larger extent in the case of SDGs: 8 – Create Job opportunities for Youth, 12 – Recycle Paper, Plastic, Glass and Aluminium, 13 – Act Now to Stop Global Warming (Cris Garcia-Saravia Ortiz-de-Montellano, Pouya Samani, Yvonne van der Meer, 2023).

Though different from sustainable development (which is global and holistic in nature), the circular economy may be applied locally and, therefore, its implementation can start on a smaller scale and provide results faster. At the same time, only the large-scale implementation of circular economy principles by all stakeholders may lead to a true mitigation of climate change and improving environmental conditions, as it was demonstrated by a research on the relevance of circular economy on climate change (Khanna, M., Gusmerotti, N.M., Frey, M., 2022).

Circular economy is an approach to economy and society based on technical cycles and organic transformations, similar to natural cycles. At the same time, circular economy represents an economic model that aims to reduce to a minimum waste and energy consumption. In this sense, it promotes the design of long-term use products (which can be repaired, refurbished, and reused), as well as the recycling of products and materials. One of the definitions of circular economy, provided by a leading specialised organisation, the Ellen MacArthur Foundation, states that: “The circular economy tackles climate change and other global challenges like biodiversity loss, waste, and pollution, by decoupling economic activity from the consumption of finite resources” (Ellen MacArthur Foundation, 2023).

Instead of the linear economy based on an ever-growing model and a technology characterised by a “take-make-use-dispose of waste” approach, the circular economy envisages human activities as an almost closed-loop system in which resources are continuously re-introduced in the production process. This vision is reflected in *Figure 3*.

Figure 3. The main stages of a circular economy



Source: European Commission - Towards a circular economy: A zero waste programme for Europe, Document, Brussels, 2.7.2014 COM (2014) 398 final, p. 5.

The main features of the circular economy are:

- **Circularity by design:** Products are designed in such a way as to last longer and be easily repaired. They have components that can be disassembled, replaced and reused.
- **Efficient use of resources:** Economic activities maximise the use of materials and energy, while minimising the waste during the entire life cycle of products.
- **Possibility of remanufacturing:** The design of the products allows for their refurbishing and reconditioning in order to extend their life cycle.
- **Possibility of recycling:** The focus is on technologies that enable the extraction of useful materials from products at the end of their life cycle and the use of these materials in new production cycles.
- **The shift of consumer behaviour towards Sharing and Collaborative Consumption:** consumer education in view of responsible consumption, that encourages the sharing of assets and services, so as to reduce the overall demand for new products without affecting the living standards.

Based on these characteristics of circular economy, one can say that it may boost sustainable development by considerably reducing the need for energy and materials, on the one hand, and the pollution of the environment, on the other hand. As the circular economy has at its core the design of products and systems that prioritise resource efficiency, reduction of waste generation, and extension of the life cycle of products, it facilitates the attainment of the goals of sustainable development (European Parliament, 2023c).

In-depth field research regarding the perception of the private sector on the

relationship between circular economy and sustainability proved that most companies view circular economy as an instrument for achieving sustainability, especially in regard to using the resources in an environmentally friendly way (Walker, A.M., Opferkuch, K., Roos Lindgreen, E., *et al.*, 2022). At the same time, the business sector perceived sustainability as the larger concept, which integrates the circular economy.

To summarise, circular economy and sustainable development are interrelated concepts that mutually support each other, sustainable development being more comprehensive. Both recognise the need for a fundamental change in the approach to production, consumption, and resource management. The adoption of circular economy principles may significantly contribute to achieving the SDGs and creating a more resilient, ethical, and inclusive global society.

2.2. ESG and sustainable development: From ESE (Environmental, Social, Economic dimensions) of sustainable development to ESG (Environmental, Social, Governance dimensions)

Sustainable development, as a concept with a three-pillar structure (**ESE – Environmental, Social, Economic**), has been designed and operationalised in view of creating long-term compatibility of human activities with the planet Earth. It strives to render societies and economies more equitable and inclusive. The perspective of sustainable development is global and ethical, based on a top-down approach. The **ESG (Environmental, Social, Governance)** approach shares multiple common elements with the sustainable development but has a rather different origin and a specific historical evolution.

Around the year 2000, the entrepreneurs have discovered, in an empirical way, that companies which paid attention to environmental, social and governance factors (non-financial factors), had better financial results than the rest in the long run (Kennedy, E., 2022). Therefore, they sought ways to identify elements of corporate value not measured by traditional methods (accounting, return on investment indicators, etc.) and endeavoured to turn them into market value. In other words, they tried to capitalise on such intangible assets by taking appropriate measures. As a result, the ESG approach was, at its origin, microeconomic/located at the level of entrepreneurs or investors. It has been gradually adopted and largely implemented on a voluntary basis, in a similar way to the Corporate Social Responsibility (CSR). Nowadays, some of the requirements of ESG and CSR are included in official documents as recommendations or partially mandatory requests, without being legally imposed norms.

Historically, the origins of ESG may be related to the earlier concept of Socially Responsible Investing (SRI) that emerged during the 1960s and 1970s as a response to concerns about the social impact of large-scale activities, particularly that of multinational corporations. Later, in the 1980s, these concerns were complemented by the preoccupation with the environmental impact of business activities.

The concerns over the social impact referred mainly to activities harmful to health (like those of the tobacco industries), to industries producing armament, or operating in apartheid economies. The environmental preoccupations emerging in the 1980s stemmed from the growing public awareness of issues like pollution, climate change, and depletion of natural resources. The fusion of the two dimensions, social and environmental, took place in the early 2000s with the large-scale adoption of the concept of Corporate Social

Responsibility (CSR) (Bryne, D., 2023). From that moment on, responsible investors were more and more expected to consider not only the financial aspects of their business, but also the social and environmental ones.

The ESG concept was officially mentioned and promoted for the first time, on a large scale, in 2004, when the United Nations Organisation published a report entitled “Who Cares Wins - Connecting Financial Markets to a Changing World”, which requested that all businesses participants (entrepreneurs, managers, investors, analysts, brokers, etc.) implement environment, social and governance criteria (United Nations, 2004).

In essence, ESG is about being responsible as an investor, entrepreneur, or manager, and acting in good faith, based on business ethics. Nowadays, under the ESG denomination, one can find not only recommendations but also regulations and requirements, such as *The Sustainable Finance Disclosure Regulation (SFDR)* of the European Union, issued in 2019 and entered into force in March 2021. SFDR has as its main goal the increase of transparency in the market for sustainable investment products (EUR-Lex, 2019a).

The rise of the ESG approach also reflects a major shift in the perception of economic activities over the past 45 years. A study released in 2020 showed that, between 1975 and 2020, the share of **intangible assets** (such as brand value, goodwill, intellectual property, human capital, and other elements, some of them being part of ESG) jumped phenomenally from 17% to 90% in the market value of the companies listed in the stock market index S&P 500 (Ocean Tomo, 2020).

This shift of focus from **tangible** (equipment, buildings, means of transport, land, merchandise) to **intangible assets** mirrors the shift from the preponderance of mechanical, electrical, chemical, etc. processes (taking place in manufacturing / economy) to a preponderance of information-based activities.

The common and different features of sustainable development and ESG are summarised in *Table 2*.

Table 2. The common and different characteristics of sustainable development and ESG

Characteristic / Concept	Sustainable development (Environmental, Social, Economic dimensions)	ESG (Environmental, Social, Governance dimensions)
Level of decision - institution	Global – United Nations Organisation, governments	Microeconomic - Entrepreneurs
Approach	Top-down: from governments or other authorities downwards.	Bottom-up: from company level upwards.
Environmental approach	Focus on the global effects of human activity.	Focus on the company-level effects of economic activity.
Social approach	Focus on food security, access to education and health care, housing, gender equality.	Focus on employees, customers and other stakeholders. Recommends acceptance of diversity, avoidance of discrimination on any criteria.
Economic approach	Focus on reducing differences/gaps in development among countries.	Supports Socially Responsible Investment and Corporate Social Responsibility in economic decisions.
Governance	Refers to long-term macro-economic governance.	Focus on observance of ethical business behaviour and on transparency in the companies' communication with all the stakeholders.

Source: Content produced by the author based on bibliography.

To sum up, **sustainable development** reflects awareness at two levels:

- The need to control the impact of human activity at a global level in order to keep it at acceptable levels for securing the interests of future generations.
- The need to provide durable solutions for all human societies as regards access to food, water, health care services, education, and housing.

A comprehensive illustration of sustainable development is provided by the United Nations 2030 Agenda for Sustainable Development with its 17 goals (United Nations, 2015). In contrast, **ESG** represents a perspective related to the investment and entrepreneurial areas. It calls for responsible behaviour regarding the environmental and social consequences of decisions that result from a certain type of governance at the micro-economic level.

3. The European Union as a supporter and advocate of ESG and Circular Economy in view of achieving sustainable development and mitigating climate change effects

Based on the conceptual and content clarifications regarding the relationship between **sustainable development**, on the one hand, and **circular economy** and **ESG**, on the other, we shall focus in this section on the position of the EU on the latter concepts, seen as possible solutions for sustainable development and mitigation of climate change effects.

3.1. *The European Union and ESG*

The European Union's position on ESG stems from its commitment to finding durable solutions to important challenges, such as climate change, social inequality, and ethical business behaviour. Besides its consistent support for ESG, the European Union defined criteria for measuring the performance of companies in various areas: environmental impact, social responsibility, and corporate governance. In this respect, the European Union formulated policy initiatives and regulations, among which ***The Sustainable Finance Disclosure Regulation (SFDR)*** and **The European Green Deal**, both presented in 2019.

Both the above documents are supportive of **the environmental objectives of ESG**. The SFDR requires that participants in the financial market disclose the ESG aspects of their products, and thus the potential investors gain access to the information about the degree of sustainability of their investments. At the same time, **the EU Taxonomy Regulation** provides a framework for classifying environmentally sustainable economic activities, and clarifies what a “green investment” actually is (EUR-Lex, 2020). In its turn, the *European Green Deal* has set targets for greenhouse gas emissions, the use of clean energies, and the implementation of circular economy principles (European Commission, 2019).

As for **the social component of ESG**, the European Union has always supported fair labour practices, social inclusion, and human rights. An important document in this respect is ***The European Pillar of Social Rights (EPSR)***, adopted in 2017 in Gothenburg. EPSR promotes principles for ensuring equal opportunities and access to the labour market, fair working conditions, and social protection (European Commission, 2018). A complementary document is the ***Non-Financial Reporting Directive***, which requires that large companies provide information about their social and environmental impact, in order to secure transparency and accountability (EUR-Lex, 2014).

The third component of ESG, governance, also represents a focal point for the European Union. Through its policies and legal acts, the European Union has consistently supported the enhancement of corporate transparency, integrity, and accountability. In this respect, the European Union has adopted the ***Shareholder Rights Directive II*** (EUR-Lex, 2017), which strengthens the position of shareholders and aims at reducing short-term targets and excessive risk-taking within companies traded on EU regulated markets. In addition, the European Union proposed a ***Corporate Sustainability Due Diligence Directive (CSDDD)*** which in mid-2023 was at the stage of interinstitutional negotiations between the European Parliament, the European Commission, and the European Council (Bosselaar, M., Bloemen, I., Pennink, S., 2023). Once adopted, presumably in 2024, the CSDDD will require responsible and sustainable corporate behaviour, so as to avoid negative impacts on human rights and on the environment, including along the global value chains.

The European Union's influence on the design and implementation of ESG is manifest in the internal market and in the global economy because its regulations are applicable to the activity of corporations at both levels (that is at EU level and at international level), since some European corporations operate in the EU's internal market, while others beyond it. Moreover, there are non-EU corporations operating in the European Union. At the same time, by its economic size and experience, the European Union may become a source of expertise and best practices for other regions,

thus contributing to the transition to a more sustainable and equitable world economy.

3.2. *The European Union and Circular Economy*

In response to the growing challenges posed by the environmental pollution (in all of its dimensions), climate change and the prospect of the depletion of many resources, circular economy has emerged as an alternative vision for economy and society. The European Union has been a pioneer in the advocacy of circular economy, by introducing new designs, principles and values, and also through its numerous strategies, programmes and the establishment of a legislative framework.

On December 17, 2012, the European Commission adopted its official position on the circular economy, in a document named “Manifesto for a Resource-Efficient Europe”. Its first paragraph stated that: “In a world with growing pressures on resources and the environment, the EU has no choice but to go for the transition to a resource-efficient and ultimately regenerative circular economy” (European Commission, 2012). For more than a decade, the European Union has had a comprehensive approach to circular economy that encompasses the design, manufacturing, consumption, and disposal of products at the end of their life cycle. By this comprehensive approach the European Union has in view to offer simultaneous solutions for the achievement of sustainable development, the efficient use of resources, the fight against climate change and the increase of economic resilience.

A key observation is that the European Union did not aim to find punctual solutions to punctual issues, but to address the contemporary challenges in a fundamental way and, in doing so, it replaced the linear economy with a circular one. The linear economy is based on the “ever-growing” model and the “more is better” philosophy. According to this model, human activities are organised in a “take-make-use-dispose of waste” sequence which is not sustainable in the long run, neither at local or regional level nor at global level.

The alternative represented by the circular economy is based on the decoupling of economic growth from the growth of energy and material consumption. This can be achieved by means of a new design of products and processes based on reuse, repair, recycling in an almost closed-loop system. Since 2015, there have been many official documents that reflect the European Union’s position on circular economy (Watkins, E., Meysner, A., 2022), including: the *Circular Economy Action Plan* - CEAP (2015 / 2020), the *European Green Deal* (2019), the *EU Zero Pollution Action Plan* - (EUR-Lex, 2021).

The first of the above documents, ***the Circular Economy Action Plan***, has been issued in 2015 and further updated in 2020. Although it stresses the importance of **circularity by design** (that is, ensuring circularity by conceiving products which are durable, can be repaired, reused in total or as spare parts, and recycled at the end of their life), **it is more a strategy for a transition period**. *The Circular Economy Action Plan* has set targets for recycling different types of materials, for reducing the quantity of waste disposed in the environment and for building infrastructure and establishing procedures for selective waste collection and recycling of materials. One can say that this document has been both visionary and ambitious. Yet, it insisted too much on the collection and recycling, and not enough on the circularity by design. A collateral challenge posed by this document refers to the impact of products with a longer lifespan on the business plans of modern market economy companies. Essentially, this impact may even question

the compatibility of circular economy with capitalism, a question which cannot have a simple answer (Bonciu, F., 2020).

A key moment in the consolidation of the European Union's support for the circular economy has been the adoption of *the European Green Deal* in 2019. The importance of this document consists in its ambitious goal and roadmap for turning the European Union into the first climate-neutral region by 2050. To underline this historical goal, the President of the European Commission, Ursula von der Leyen, presented it as "Europe's 'man on the moon' moment" (von der Leyen, U., 2019).

Although *the European Green Deal* has a much more comprehensive content than the *Circular Economy Action Plan*, the *circular economy* is explicitly presented as a major instrument for achieving sustainable development in conditions of climate neutrality. The Green Deal is also important because it mentions the need for a holistic approach, that implies the incorporation of *circular economy principles* in policies, regulations, business plans and business models for all economic activities (from research and innovation to manufacturing and consumer behaviour).

In this context, a practical approach which supports a circular economy is the position of the European Union against planned obsolescence (which benefits the increase of sales) and in favour of the right to repair. By means of binding legislative measures such as the Ecodesign Directive (EUR-Lex, 2019), the European Union requires that products be designed for a longer lifespan, easier to repair and with accessible spare parts. Although such a directive affects the interests of the producers, it creates new job opportunities for people specialised in repairing and reconditioning products for their reuse, as well as for those involved in maintenance activities.

As mentioned in a previous section, the European Union positions itself as a provider of solutions and best practices for sustainable development not only in its internal market, but also in the global economy. In this capacity, the European Union includes the principles of circular economy in international partnerships and agreements related to international trade, energy, manufacturing, and consumer behaviour.

In essence, one can say that the European Union displays several characteristics regarding circular economy:

- It has a clearly stated position in favour of circular economy, deemed to be a significant element for achieving sustainable development and climate neutrality.
- It has adopted a roadmap with well-defined deadlines and targets for 2030 and 2050.
- Its stance is multidimensional on the issues of environmental neutrality and sustainability, efficient and effective use of resources, economic resilience.
- Its strategy and implementation decisions refer specifically to both the internal market and the global economy.

During the period 2015 – 2023, the European Union has distinguished itself as a leader in the global transition to a circular economy based on sustainability, renewable resources, and resilience. Therefore, as a result of its strategies and programmes and their implementation, the European Union has a chance to share with the rest of the world feasible solutions for a more sustainable future. A better international communication regarding what has already been achieved may attract followers and generate useful and creative feedback. At the same time, a more comprehensive inclusion of circular economy

concepts and applications in the curricula, at all educational levels, can contribute to the training of future responsible European citizens.

Conclusions

In recent years, the global economy has been increasingly confronted with the consequences of climate change, as these have become immediate threats. Some regions, such as Europe, experienced faster than expected the repercussions of this dreadful phenomenon, while others, confronted with somehow less acute manifestations of climate change, have fewer resources and capabilities to mitigate it.

The global scale of climate change and its systemic nature pose a major challenge to designing an adequate response to it. This urgency in designing and implementing such an adequate response is first of all affected by the difficulty to attain consensus and coherence among a multitude of stakeholders. At the same time, this urgency is affected quite often by the diversion of public and state attention and resources due to the manifestation of multiple and simultaneous crises, a situation described lately by the concept of “polycrisis”: the war situation in Ukraine and the recent conflictual situation in the Middle East are only examples. “Polycrisis” as a concept was introduced by Edgar Morin and Anne Brigitte Kern in 1999, used by Jean Claude-Juncker in 2018, when he was President of the European Commission, and popularised by the economic historian Adam Tooze (Derbyshire, J., 2023).

A *polycrisis* is characterized by the simultaneous emergence of several crises at a global scale. The current polycrisis encompasses the consequences of the COVID-19 pandemic, the war in Ukraine, the tensions existing in different domains and in different parts of the world, the energy and cost of living crises, the climate crisis (Whiting, K., Park, H., 2023). In the 2023 edition of the *Global Risks Report*, the *polycrisis* is defined as a situation “where disparate crises interact such that the overall impact far exceeds the sum of each part” (World Economic Forum, 2023). Other authors relate the polycrisis to the fact that “too much is happening too fast” and include artificial intelligence among the already mentioned sources of concern (Soros, G., 2023).

In this context of urgency (for mitigating climate change) and complexity (in finding consensus for effective and efficient solutions), striking a balance between the needs of humankind and the protection of the planet Earth means both achieving sustainable development and fighting climate change. Though numerous responsible stakeholders from the national, regional and global levels, participate in this process, they should interact in a more effective manner. **Our suggestion is that more persistence and better communication are required; and there is also a need for pooling local and partial solutions to solve the planetary puzzle of our future.**

Circular economy and **ESG** represent just two of the responsible and effective ways to reduce the negative consequences of human activities on the planet. In our view, these two concepts and solutions could work in synergy to deliver faster and more substantial results, based on a wholistic approach to sustainable development and fighting climate change.

From our perspective, the merge of the two concepts and approaches may be useful and necessary for:

- Attaining synergies manifested through faster and more encompassing results

- Drawing more public and government attention by putting together the communication, strategies and results of both circular economy and ESG approaches.
- Putting together resources that otherwise are diverted at least in two directions (circular economy and ESG). The need to put together resources is more so acute as resources may be required nowadays in other high-impact areas, such as military, migrations, energy, food, water crises, etc.

For over a quarter of a century, the European Union has stood out as a pioneer and leader in exploring and implementing sustainable ways of interaction with the environment. At the same time, the European Union has put forward and enacted the most comprehensive strategies and legislative proposals relating to circular economy, ESG, and sustainability in general.

Therefore, the European Union is best placed to experiment with this fusion of the circular economy and ESG approaches. In our opinion, it should also focus on optimising the existing strategies, instruments, and mechanisms in order to gain the status of the first carbon-neutral continent by mid-century and, thus, to set an example for the rest of the world.

Based on its rich experience and achievements in the areas of sustainable development, circular economy, and ESG, the European Union can capitalise on what it has already accomplished by fostering better communication with its citizens and with the rest of the world and by gradually improving its existing accomplishments. With a view to preparing the younger generations in Europe for the world of tomorrow, the existing knowledge and know-how on sustainable development, circular economy and ESG should be included in adequate ways in the curricula of European schools and in the consumer and social behaviour of all the European citizens.

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