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Green economy: Between weak sustainability and strong sustainability

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Abstract:

This paper aims to present the green economy and to explain why and how this economy plays a role in both types of sustainability proposed by sustainable development. To achieve this, a qualitative method using literature review as a data collection tool was employed. The analyzed literature review highlighted that the first strides of the green economy in economic thought were taken by physiocrats, classics, neoclassicists and heterodoxes. The different perceptions of these economic schools regarding the environment gave rise to two (02) pioneering branches of the green economy, distinguished from each other by their goals and foundations. These branches take the form of the environmental economics based on weak sustainability and the ecological economics based on strong sustainability.

Keywords: Green economy; weak sustainability; environmental economics; strong sustainability; ecological economics.

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1. Introduction

The ecological crisis that we have witnessed in recent years has led us to reconsider the logic and the coherence of the economic and social system that has been put in place. The mode of operation adopted by this system is leading the planet into a perilous situation that is constantly worsening. Thus, the call for a fundamental change in paradigm and lifestyle is becoming urgent. This change is brought about by a new vision of development known as sustainable development.

In her seminal report "Our Common Future," published in 1987, Gro Harlem Brundtland (Norwegian Prime Minister), defined sustainable development as a kind of development that addresses the current needs without compromising the capacity of future generations to fulfill their own needs. This concern encourages us to take into account new parameters aimed at a development based on an interaction that ensures viable, equitable and bearable relations between the economy, the environment and the society.

According to the literature, this harmonious and sustainable development can be materialized in two ways (Perret, 2009), namely through weak sustainability (allowing for the substitution between capitals) and strong sustainability (which restricts it and advocates the complementarity).

Achieving both types of sustainability requires the adoption of responsible behaviors and economies. Among the responsible initiatives proposed by economists, are those related to environmental protection, aiming, such as, valorizing natural spaces, recycling and combating waste, etc. These actions which contribute to the establishment of new economic reasoning logics, acting to green the economy, are part of the green economy’s field.

Thus, this paper examines the origins and positioning of the green economy in relation to these two types of sustainability. Firstly, we seek to understand what drives or *why* the green economy is involved in the discourse surrounding weak and strong sustainability. Secondly, we aim to explore *how* this commitment to sustainability manifests itself.

To achieve this objective, a qualitative method utilizing literature review as a data collection tool was used.

Accordingly, this document will be structured around three (03) main points. In the first point, the positions of different economic schools (physiocrats, classical, neoclassical, and heterodox) regarding environmental protection will be presented to highlight the origins of the green economy and therefore give an answer to the question ‘‘Why’’ of this present paper.

As for the second point, the focus will be on defining and distinguishing between weak and strong sustainability for a better assimilation of the content of the third point.

The last point will focus on presenting the foundations of the two (02) pioneering branches of the green economy, environmental economics and ecological economics, derived from the reviewed literature. An overview of the context and definition of each branch will precede the outline of the type of sustainability advocated by each one (positioning the green economy between weak and strong sustainability) and concluding with the adopted decision-making methods. Thus, this last point will have contributed to addressing the question ‘‘How’’ of this current study.

2. Environment and Economic Currents

The definition of "Economics" by L. ROBBIN[i] in 1932, considered the most famous, states that economics is the science that studies human behavior as a relationship between ends and scarce means with alternative uses.

This definition was complemented by E. MALINVAUD[ii] in 1963iii as follows: Economics is the science that studies how scarce resources are employed for the satisfaction of the needs of individuals living in society. It is concerned, on one hand, with the essential operations of production, distribution, and consumption of goods and, on the other hand, with institutions and activities aimed at facilitating these operations.

Economics is thus based on two (02) concepts: utility and rationality in the allocation of goods. The principle of utility postulates the existence of a satisfaction function for agents that guides the preference relations they establish with goods. The pursuit of efficiency in the allocation of goods, i.e., the way that goods are distributed among agents, derives from initial individual rights and the workings of voluntary exchange that ensures the highest possible level of collective well-being or wealth. The joint action of these two (02) elements populates the economic field with quantities and prices (Jollivet, 1992).

However, the study of specific objects in economics has led to the formation of specialties, such as green economics, which takes into account the peculiarities of the ecological environment.

Before defining this green economy and its various branches, it is useful to recall how the question of nature (the ecological environment) was addressed by economic sciences. This involves

explaining how nature was perceived by certain economic currents for whom it was a fundamental aspect of their modes of thinking, tracing back to its origins. Therefore, we present below the perceptions of physiocrats, classical, neoclassical, and heterodox schools.

2.1.Physiocrats' School

During the time of the physiocrats, around the mid-18th century, land was considered the essential (active) factor of production for an economy. F. QUESNAY, the leader of the movement, believed that only agricultural production could generate a net product or surplus, or a spontaneous multiplication of physical quantities produced thanks to the free gift provided by nature through the land. The annual social product of a nation is nothing other than what would be called today the National Agricultural Product. For the physiocrats, national wealth was therefore fundamentally tied to land, agriculture was the sole creator of wealth, and land was a critical input. The environment, limited to the protection and exploitation of land, held a central place in the economy (Hamaide, et al., 2012)

In essence, the economy, as envisioned by the physiocrats, is represented by a dual circuit of physical and monetary flows where only nature adds something. It is governed by natural laws that must be respected to ensure the sustainability of wealth creation. Environmental concerns are thus reflected in the preservation of the land as a source of wealth. This economic school inaugurated studies on the economic circuit and its interaction with nature.

2.2.Classical's School

The Classical School emerged in the last quarter of the 18th century, with prominent figures such as A. SMITH, T. MALTHUS, and D. RICARDO. According to A. SMITH, land is a natural,

marketable resource that plays a critical role in both agriculture and industry. Unlike the physiocrats, who believed that wealth was solely derived from land, SMITH recognized that wealth is also generated through labor and capital.

A common denominator among classical economists is the belief in a stationary state in the long term, where economic growth cannot persist indefinitely and will inevitably tend towards stabilization. T. MALTHUS believed that absolute scarcity of land was the root cause.

D. RICARDO later argued that this scarcity is relative (as one can start cultivating the most fertile lands before moving on to less fertile ones), relying on the explanation that population pressure on land increased land prices. This price increase encouraged the cultivation of less fertile lands that were not profitable at previous prices. This sustained pressure led to legislation in England in 1817 allowing the enclosure of lands, introducing for the first time in history a right of ownership over land, which was an environmental asset par excellence (Ricardo, 1817).

While the stationary state was widely seen as an inevitable failure, John STUART MILL advocated for it in the 19th century. He recognized that the growth of population and production (economic growth) comes with significant social and environmental costs; the ideal society would strive to move towards this inevitable stationary state before being compelled to do so (Hamaide, et al., 2012).

By the end of the 19th century, this school was supplanted by what is now known as the neoclassical school.

2.3.Neoclassical's School

In neoclassical economics, land is seen as easily replaceable by labor and/or capital. This is can be attributed to two (02) primary reasons: firstly, the abundance of many natural resources makes them less scarce and likely to be considered economic goods, like factors of production. Secondly, natural resources such as land, whose price encompasses not only extraction costs but also subject to transactions in the land market, are already included in the capital factor (Bina., & La Camera., 2011).

The neoclassical school introduced a rule stating that every decision-maker compares costs with the benefits expected from their decision. The key innovation of this school is the concept of marginal analysis. This concept means that it is the additional (marginal) costs and benefits compared to the situation before the decision that are decisive. Rationality, in this case, refers to the attributed ability of the decision-maker to perform this cost-benefit calculation at the margin using all available information. This reasoning is also applied to address environmental issues, for example, by comparing the cost of an environmental protection measure with the expected benefits (Burgenmeier, 2008).

The 1970s, marked by two (02) oil shocks and evidence of the depletion of an increasing number of resources, brought environmental concerns back to the forefront. Of course, this does not imply that no neoclassical economist considered environmental issues before this time. Indeed, L. WALRAS and W. JEVONS each had their approaches to these concerns. Also, in the 1930s, two (02) economists contributed to creating what would later be called branches of green economics: HOTELLING, through the analysis of the exploitation of exhaustible resources, and PIGOU, through welfare economics and the internalization of externalities (Rennings and Wiggering, 1997).

The "optimists" argue that resource scarcity will reverse, thanks to alternative resources that can economically develop in case of an increase in the price of exhaustible resources. By adopting standard neoclassical behavior and extending the works of H. HOTELLING (Hotelling,. 1931) and A.C. PIGOU (Pigou.,1920) two (02) branches of green economics were created in the 1970s: natural resource economics and environmental economics, both incorporating environmental issues into their analytical framework.

The "pessimists," belonging to another school, contributed to the creation of a third branch, ecological economics, which emerged in the 1980s. This discipline assumes that the environment can only be studied in a transdisciplinary manner by including economics and natural sciences (primarily ecology and thermodynamics). The analytical framework extends beyond that of neoclassical economics as the economic system is now perceived as part of a larger system, the Earth, or the biosphere (Hamaide, et al., 2012).

2.4.Heterodox's School

Focusing solely on the environmental field, criticisms of the orthodox neoclassical paradigm have been categorized into two (02) main streams as follows (Godard, 1992):

2.4.1. American Conservationist's thought

Among the critics of the American conservationist movement led by G. PINCHOT, J. MUIR, A. LEOPOLD, and others (with backgrounds in forestry or hydrology and facing management responsibilities), the views of A. LEOPOLD stand out. He argued that intensive management of renewable resources, focused on productivity even with the constraint of "sustained yield," could

reduce biological diversity and lead to ecological collapses triggered mostly by climatic accidents.

2.4.2. Institutionalists's thought

Institutional economist K.W. KAPP criticized the orthodox paradigm for not measuring the outcomes of an economic organization by recognizing things deemed "economic" and those deemed "non-economic," which are, in principle, closely connected and should be studied together.

In 1950, he published his pioneering work on social costs (referring to things deemed non-economic) of private enterprise. He placed at the core of his analysis the active tendency of companies to "internalize profits and externalize costs." Introducing this concept, KAPP shed light on the ties between the functioning of the economic sphere and the role of the state. The state, according to him, has the dual responsibility of limiting the process of cost externalization and, to some extent, assuming the social costs of private activities. These social costs, for the author, include environmental costs (air and water pollution, degradation of renewable resources, rapid exploitation of non-renewable resources), on par with other social costs such as harm to human factors and the effects of economic fluctuations (unemployment, excess capacities, etc.).

He also proposed the gradual removal of disciplinary barriers within the social sciences. By leveraging achievements in psychology, sociology, politics, law, history, and ethics, a better assimilation and understanding of economic problems would be possible. (Berger,. 2013).

By highlighting the concept of the environment through the various economic currents mentioned earlier, it becomes evident that

the interface between "Environment" and "Economy" gives rise to environmental economic disciplines. The ambiguity of the very object of these disciplines is reflected in the varying terms used to describe this branch of economics. Thus, depending on the authors, terms like Environmental Economics, Economics of the Environment and Natural Resources, Natural Resource Economics, Ecological Economics, Sustainable Development Economics, etc., are used, perceived through two (02) problematics: weak sustainability and strong sustainability, which are explained below.

3. Weak Sustainability and Strong Sustainability: What's the difference?

A set of capitals is used to achieve sustainable development. The way that these capitals are combined differs between two (02) approaches: a weak sustainability approach and a strong sustainability approach. In the following, we will first outline the different capitals and then discuss the various types of sustainability that result from the way they are used and combined.

3.1.Types of Capitals Required for Sustainable Development

To ensure sustainable development, economic activities must be environmentally and socially responsible. These activities depend on the existence of a stock of resources, referred to as capital, from which it is possible to draw. This capital stock, which varies over time and is collectively termed "total capital," includes natural capital and capitals resulting from human activity. These capitals can be detailed as follows (Veyret, 2005):

3.1.1. Natural Capital

Natural capital plays two (02) roles: the role of a source and the role of a sink. As a source, it encompasses all stocks of resources (renewable and non-renewable) naturally present in the environment, capable of gaining value through their use by businesses for production or by individuals for consumption, examples include: fossil fuels, water, forests, etc. As a sink, it absorbs various types of pollution, such as atmospheric pollution.

3.1.2. Capitals Resulting from Human Activity

Five (05) types of capitals result from human activity:

- **Financial capital:** includes all forms of assets with corresponding liabilities (currency, bank deposits, securities, pension funds, insurance reserves, etc.).
- **Human capital:** corresponds to the mass of knowledge and experiences accumulated by each individual for production purposes, dependent on education, profession, and specific skills.
- **Social capital:** pertains not to the individual but to society as a whole, its culture, and the relationships formed among its members.
- **Institutional capital:** represents all constraints deliberately put in place by humans to organize their relationships, reduce uncertainty, and make the behaviors of individuals more predictable—these constraints serve as "rules of the game," including property protection institutions, competition surveillance institutions, etc.
- **Physical capital (or manufactured):** comprises all manufactured goods and services that can be used, stored, and made available to the community for producing goods and services that satisfy needs and improve well-being.

3.2.Substitution issue among types of capitals

The combination of different types of capitals allows for the production of goods and services, whether they are marketable or not. For a given production, two (02) possible combinations exist. The first supports the principle of substitution between capitals and thus gives rise to weak sustainability. The second, on the contrary, advocates the principle of complementarity to highlight the approach of strong sustainability.

3.2.1. Weak Sustainability

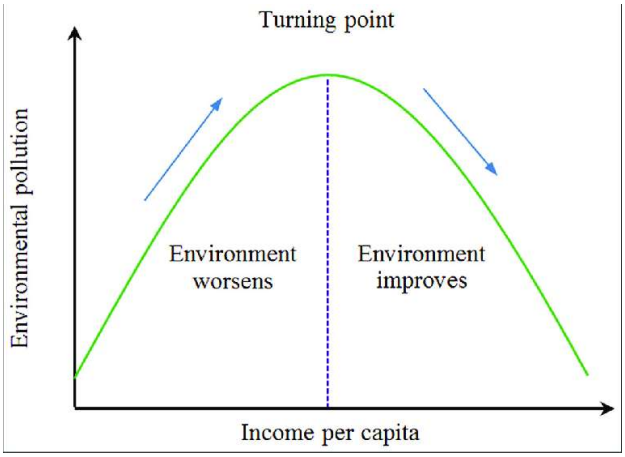
Advocates of weak sustainability believe that the possibilities of substitution between different forms of capital are significant (as all capitals are considered means of production that can replace one another). They argue that long-term sustainability requires the non-depletion of the total capital stock. For example, the depletion of natural resources can be compensated by developing new solutions. This implies that one form of capital can decrease as long as another increases at least as much to maintain the aggregate constant or growing (D'Humieres, 2005).

According to this perspective, development is sustainable if a generation can pass on to the next generation a capital stock at least equal, enabling the delivery of at least the same well-being to the population. Technological progress may allow humans to reduce their need for natural capital by providing a set of "replacement techniques''.

The Environmental Kuznets Curve, below illustrates this vision of sustainability, demonstrating that economic growth initially leads to environmental degradation but, as a result of the resources generated by growth, can reduce this degradation by developing

technologies less resource-intensive and more environmentally friendly (this means that the destruction or degradation of one type of capital can be compensated by investment in another form of capital).

Fig.1. Environmental Kuznets Curve



Source : (Stern, 2018).

This approach of weak sustainability poses some difficulties, as presented below (D'Humieres, 2005):

- Natural capital fulfills certain vital functions that are not replaceable by manufactured capital in the current state of technology (e.g., the ozone layer).
- Components of natural capital can undergo irreversible damage compromising the production of manufactured capital. Therefore, the precautionary principle must be introduced in the exploitation of natural capital. However, doing so would imply admitting a preference for natural capital.
- The values of the components of natural capital are not entirely assessable, making it difficult to arbitrate between the utility of different components.

These difficulties have led researchers to think about another way to conceive sustainability, giving rise to the concept of "Strong Sustainability."

3.2.2. Strong Sustainability

According to the hypothesis of strong sustainability, different types of capital are not substitutes but complements (one cannot replace another). Therefore, it is crucial for current generations to protect all forms of capital without depletion. It is especially crucial to ensure that future generations inherit a stock of natural capital that is at least as large as the current stock. Sustainability is then understood as the non-depletion of natural capital. This definition of sustainability advocates limiting the extension of "productive" capital, as increasing its stock without destroying natural resources is impossible. Economic growth inevitably depletes non-renewable capital and may deplete renewable capital if the rate of extraction exceeds the rate of regeneration (Daly,. & Farley,. 2011).

Two (02) key ideas underlie the concept of strong sustainability (Sikod, et al., 2013):

- *A conservationist idea:* where social and economic concerns can be relegated to the background in the name of preserving existing natural resources. The idea is that certain services or environmental systems are irreplaceable, serving as inputs in certain production processes or as symbols of the well-being or identity of a social group. In this perspective, sustainable development is defined as development that can be achieved without a decrease in the assets of the natural stock of Nature, considered over time, while maintaining stocks of economic capital.

- *An idea aiming at maintaining critical natural capital*: in this context, sustainability requires the introduction of standards or usage rules for each resource. Several conditions for the use of natural capital must be respected (the rate of use of renewable natural resources should not exceed their regeneration rate, the rate of depletion of non-renewable resources, the rate of development of substitutes, the amount of waste pollution that the environment can absorb, etc.). The goal is to preserve critical natural capital, i.e., all natural assets that, at a given geographic scale, fulfill vital functions and for which no substitute in terms of human or manufactured capital exists. The strong sustainability concept finds its primary application in the field of non-market natural resources.

In the following section, we will provide an overview of the definitions proposed for the most mentioned types (branches) of green economies in the literature, namely: environmental economics and ecological economics, built on the foundations of weak and strong sustainability.

4. Green Economy Branches: Navigating the spectrum from weak to strong sustainability

Based on what has been stated before, the economy can employ various approaches to analyze the environment, giving rise to the following concepts: Natural Resource Economics, Economy of the Environment, Environmental Economics, Ecological Economics, etc. We have chosen to discuss the two last, as they are considered the most frequently mentioned and cited concepts (i.e., pioneering) in economic literature for addressing environmental issues. This observation was made after analyzing existing documentation in this field.

4.1.Environmental economics

In this section, we will present the concept of the environmental economics, explaining the context in which it emerged and its main foundations.

4.1.1. Context and Definition

In response to market failures (economic production which utilizes a set of natural resources considered as common and collective goods without prices, production that generates pollution or externalities that are not accounted for in various economic calculations), environmental economists proposed incorporating into economic calculations what had remained external until then, through a "price signal" to include "hidden" information. The environment should be recognized as an economic good to accurately assess its value. Thus, environmental economists have devoted their efforts to develop conceptual frameworks (such as use values and non-use values, etc.) and methods best suited to express them in monetary terms (Froger, et al., 2016).

Therefore, the environmental economics broadens the analytical framework by integrating external effects on the market (incurring a social cost) through regulatory or incentive measures. These measures can take the form of taxes (on waste, transportation, gasoline, pesticides, etc.), competition policies, social policies, etc. The key economic concepts involved include public goods, property rights, natural resources, and externalities (Simonneaux, 2007).

A public good is accessible and can be consumed by everyone. The good is considered public when it meets two (02) key criteria: non-rivalry and non-exclusion.

Non-rivalry implies that one individual's consumption of the good does not prevent another individual from consuming it in the same way. On the other hand, non-exclusion, it means that a person cannot be deprived of consuming the good under any circumstances (Varian, 2014).

Property right is the right held by a natural person or a legal entity to use, enjoy, and dispose of property of any kind (tangible or intangible) under the conditions set by law. The owner is the one who holds this right, and the property title formalizes it (Kaplow, & Shavell,. 2001).

A natural resource is a good made available to a population by nature and has economic value (Hartwick,.1990).

In economics, an externality or external effect occurs when the production or consumption of an economic agent (a company or an individual) has a positive or negative impact on the well-being of other economic agents without any transaction or financial counterpart (Mankiw, .2014).

In conclusion, environmental economics can be conceptualized as a science dedicated to internalizing environmental externalities. On one hand, it proposes to identify, quantify, and monetarily assess pollutants. On the other hand, it studies economic tools to reflect the social cost of these pollutants. It involves finding the most effective tools to internalize externalities, essentially applying the polluter-pays principle (Roman, 2015).

In the following, we will see that the environmental economics is built on the principle of weak sustainability and the cost/benefit analysis method for decision-making.

4.1.2. Type of sustainability defended

Environmental economists believe that if relationships with the environment are properly understood through market or administered prices, agents' calculations will no longer be distorted, and the allocation of resources will be more optimal, even for those provided by the environment. Therefore, a properly established price system allows one resource to substitute for another (Ngo Nonga, 2012), thus supporting the concept of weak sustainability.

4.1.3. Adopted decision-making method

In terms of decision-making, the environmental economics justifies a decision if the sum of the benefits it generates is greater than its costs (cost/benefit analysis method). This requires identifying its socio-economic and environmental effects and quantifing them in monetary terms to aggregate them as a net gain (benefits minus costs) (Froger, et al., 2016), (Bontems & Rotillon, 2005).

The environmental economics' perspective has been criticized by ecological economics. It argues for the need to give a place to the analysis of physical flows to objectify social relations with the biosphere. Details regarding this objective are presented below.

4.2.Ecological Economics

We present here the second branch of the green economy, ecological economics, by explaining the context in which it emerged and its main foundations.

4.2.1. Context and Definition

Ecological economics emerged as a distinct discipline in the 1960s and 1970s, drawing inspiration from a range of theoretical and methodological frameworks. It incorporates principles from systems thinking, which analyzes complex systems and their intricate interactions, enabling a comprehensive understanding of the interrelationships between the biosphere, the human sphere, and the economic sphere. Additionally, it draws insights from biology, systemic ecology, and thermodynamics (Froger et al., 2016).

Ecological economics is based on the intersection of social sciences (beyond economics) and natural sciences adopting an "in comprehension" approach to the specificities of environmental issues. It combines principles from the natural sciences (metabolism, coevolution, etc.) with an expanded reflection on economics within a holistic approach considering phenomena in their entirety, not disjointedly. It also takes into account social and political aspects, as well as issues of environmental justice.

Thus, ecological economics starts with the view that the economy is embedded in nature; it takes the form of a subset integrated into a larger system, the biosphere on which it depends.

To conclude this point, ecological economics is a branch of economics which focuses on the relationships between social and ecological systems and studies the conditions for their compatibility. In other words, it emphasizes the balances of the biosphere by adopting a systemic approach (Roman, 2015).

4.2.2. Type of sustainability defended

Strong sustainability is one of the hallmarks of ecological economics (Loiseau & al,. 2016). Advocates of this branch question

the assumptions of substitutability between human-created capital and natural capital. Therefore, we can say that the "weak sustainability/strong sustainability" dichotomy is one of the main dividing lines between ecological economics and environmental economics.

4.2.3. Adopted decision-making method

In terms of decision support and evaluation of public policies or projects, ecological economics highlights the limitations of the cost-benefit analysis promoted environmental economics. It explains these limitations by the inherent difficulties in monetarily evaluating natural goods and services and their ethical and political implications. Thus, ecological economics advocates the multi-criteria analysis method, which considers quantitative criteria, both monetary (for the evaluation of economic costs and benefits) and non-monetary, as well as qualitative criteria (for the evaluation of social and environmental effects) (Abdelmalki & Mundler, 2010).

In the sense of ecological economics, there is no simple metric to account for all relationships between the economy and the biosphere. To address this and inform collective decisions, a set of indicators expressing a plurality of incommensurable values should be established.

5. Conclusion

The objectives of this paper were, first, to examine, what drives or why the green economy is involved in the discourse surrounding sustainability (weak and strong). Second, to explore how this commitment to sustainability manifests itself.
To achieve these goals, a qualitative study was conducted using documentary research for data collection.

The analysis of the consulted literature review highlighted that the origins of the green economy trace back to the Physiocrats. For them, environmental concerns in economic thought translated into the preservation of land considered as a source of wealth (an essential factor of production for an economy). This was followed by the Classical school, which viewed wealth as produced through labor and capital, with land, an element of this capital, considered as a marketable natural resource. The Neoclassical school then supplanted the Classical school. On the one hand, it saw land as easily replaceable by labor and/or capital, implying that the scarcity of resources could be reversed through economically developing alternative resources in case of rising prices of exhaustible resources. On the other hand, Neoclassicals believed that the environment could only be studied in a transdisciplinary manner by incorporating economics and natural sciences. These ideas and propositions for instance faced criticism from heterodox perspectives. Conservationists, for instance, argued that intensive management of renewable resources could reduce biological diversity and lead to ecological collapses. Institutionalists, on the other hand, reproached them for not taking into account (internalizing) the social costs of an organization.

By highlighting the concept of the environment through the various economic schools mentioned earlier, it became apparent that the interface between "Environment" and "Economy" gave rise to several branches of the green economy (due to the various existing perceptions).

This result also highlights that the green economy plays role in the sustainability advocated by sustainable development. This commitment is manifested through the two pioneering branches of the green economy, namely environmental economics and ecological economics.

Environmental economics is defined as a science of internalizing "environmental externalities" built on the foundations of weak sustainability and the Cost/Benefit Analysis method. On the

other hand, ecological economics is based on a systemic approach, blending principles from the natural sciences with a broadened reflection on economics, considering phenomena in their entirety rather than disjointedly. Constructed based on the principles of strong sustainability, it advocates Multicriteria Analysis as a decision-making aid method.

In order to deepen and enrich the discussion on green economy and its impact on the achievement and promotion of sustainability, we propose a set of suggestions as follows:

- Continue analyzing and clarifying the differences between the concepts of weak and strong sustainability, as well as the foundations of green economy within each of these frameworks.
- Explore opportunities for collaboration and complementarity between the approaches of weak and strong sustainability within the context of green economy. And identify areas where closer integration could lead to more effective and sustainable outcomes.
- Study the current impact of green economy (with its two branches) on policies, business practices, and sustainable development initiatives. And identify concrete cases where green economy has been successfully implemented and those where challenges persist.
- Conduct a critical assessment of the successes and failures of green economy in promoting sustainability. And identify challenges encountered and propose improvement strategies.
- Consider the long-term implications of commitment to green economy in the context of sustainability. And propose research avenues to explore emerging trends and opportunities to strengthen this commitment.

- Encourage interdisciplinary dialogue among economists, environmentalists, policymakers, and other stakeholders to better integrate the concepts of weak and strong sustainability into economic policies and practices.

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[i] Lionel Robbins was a British university professor at the London School of Economics (LSE) from 1929 to 1973.

[ii] Edmond Malinvaud was a world-renowned French economist and the founder of the theory of disequilibrium.