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An Analysis on Sustainable Development and Green Economy

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Abstract: *Sustainability and the green economy are two of the topics most discussed by leaders, academics and the media over the past three decades. This study aims to investigate the understanding of the term 'sustainable development', its components (economic sustainability, social sustainability and environmental sustainability) and the different approaches it proposes relative to traditional growth theories. This study explains that the concept of a green economy will be addressed by demonstrating its role in supporting countries on their path to sustainable development. The paper ultimately concludes that sustainable development and a green economy will be described and implemented through green policies.*

Keywords: *Sustainable development, Green economy, Green Polices, Economic Sustainability, Social Sustainability, Environmental Sustainability*

1. Introduction

Sustainable development and green economy are two of the most commonly discussed topics by leaders, scholars, and media over the past thirty years. They due their popularity to several world-wide key raising issues, such as degradation of the environment, resource scarcity and depletion, climate change, and increasing inequalities, etc., which were and are undermining future generations' development. It is in this view that the United Nations declared the Millennium Development Goals (MDGs) in 2000 and the Sustainable Development Goals (SDGs) in 2015, to guide countries towards a sustainable development path.

This essay first will present a wide range of standpoints to understand the term "sustainable development", its components and the different approach it suggests with respect to traditional growth theories. Then the concept of green economy will be addressed by evidencing its role in supporting countries' sustainable development path. Last but not least, sustainable development and green economy will be illustrated and implemented by green policies.

2. Sustainable Development

In 1980, at the World Conservation Strategy, the term "Sustainable Development" appears for the very first time as associated to a kind of development which considers simultaneously "social and ecological factors, as well as economic ones". However, a more broadly shared definition of sustainable development arrives seven years later as a contribution of the Brundtland Commission: A country's "development" is considered "sustainable" if it "(..) meets the needs of the present without compromising the ability of future generations to meet their own needs".

Over the years, some UN branches provided further specifications and improvements to the Brundtland Commission's definition of Sustainable Development, enhancing its diffusion and usage all over the world. An example is given by the UNDP that, inspired by this new approach, introduced the Human Development Index to measure the development of a country by considering key socio-economic dimensions other than the most common GDP. In addition, at the Earth Summit in 1992, sustainable development was defined as a "long-term continuous development of the society aimed at satisfaction of humanity's need at present and in the future via rational usage and replenishment of natural resources, preserving the Earth for future generations". More considerations were also added during the World Summit on Sustainable Development in 2002, where the three main pillars of sustainable development were defined (social, environmental and economic one) and summarized into

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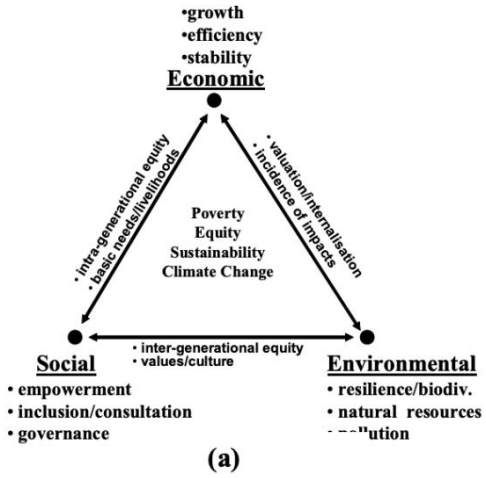
the motto "People, Planet, Prosperity". This mention is useful to introduce a common practice in sustainable development literature, aimed at organizing research studies in three areas: the economic, the social and the environmental ones. The World Summit Outcome Document that in 2005 specifies that those three defined elements of sustainable development must be intended as "interdependent and mutually reinforcing pillars". In this view, figure 1 shows one of the most famous explanations for this structure provided for the very first time by Munasinghe (2001).



Source: Munasinghe (2001)

Figure 1: Elements of Sustainable Development

As it can be seen, the three components are linked in a system in which each of them is equally important, while maintaining its own specific forces and drivers. Social and economic components are now included as separated and distinct entities. On the economic side, some traditional measures are considered (such as growth and efficiency) to improve people's welfare, but they are now asked to be integrated with environmental concerns (resilience, pollution, natural resources) and social issues (empowerment, inclusion, governance). To enhance those connections, new activities are required: for instance, the evaluation of the environmental assets is mandatory to achieve economic efficiency; and the provision of basic needs is fundamental to both improve inclusion and growth.

Economic Sustainability

In general terms, economic sustainability has always been related to the maximization of income on one side and to the maintenance of a stable and optimal level of capital and assets for future generations on the other side. In a second moment, economic sustainability has been linked to a responsible use of natural resources so as not to reduce their utility and to guarantee an equal access to next generations and to a low rate of consumption of non-renewables for a smooth transition towards economic models based on renewables. Later, it has been also associated with innovation, competition and public debt levels to be maintained over time. However, it should be noticed that the importance of the economic component has evolved over time. The main reason is related to the 2008 financial and economic crisis, which suggested the need to change the dominant approach on economic growth. It is in that occasion that policymakers and academics all over the world questioned the old economic models focused only on measurements of economic growth and started considering integrated systems with targets of both growth and sustainability.

In this new context of sustainable development, traditional dimensions (such as consumption) are presented in a different guise and issues that were ignored before are now included. As a consequence, measures for diversity, innovation and peaceful integration with the environment are needed. For instance, the goal is no more improving resource efficiency to foster growth, but rather doing that by reducing the environmental degradation of a production process. It is not just increasing GDP, but improving the GDP per capita and eradicating poverty. Lastly, it is no simply upgrading infrastructures for supporting the economy, but also for adopting cleaner and improved technologies. In other words, those indicators show that economic measures must be interlinked with social and environmental concerns in an integrated system in which each component benefits from the other one.

Social Sustainability

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During the debates on sustainable development, one issue that emerged was the alarming low attention to social targets, which had been downgraded with respect to the environmental and the economic components in the most recent approach towards countries' development. A greater recognition is needed to social issues, by proposing new frameworks for improving the quality of human life and suggesting structural modifications to the global economy model.

The theories on the social component of sustainable development are possibly the most diverse among the three categories, since they involve emphasizing inclusion, enriching human relationships and achieving social justice. Generally speaking, social sustainability can be defined as the possibility for identified social issues, such as social values, identities, and relationships among institutions, to survive in the future. In this view, social sustainability requires more cohesion to achieve goals which benefit everyone, such as education, well-being and cultural values' preservation. It can be affirmed, that the social component of sustainable development should be considered as people-oriented, aimed at reducing disruptive conflicts, preserving cultural systems and cultural diversity and encouraging pluralism. Also, it should be devoted at reducing vulnerability and increasing key values such as solidarity.

However, besides those efforts to provide exhaustive definitions of social sustainability, the topic remains highly debated especially when it comes to the need to provide practical measures and targets to be achieved. Some key indicators in this section include increasing opportunities for women and youths to both participate to society's activities and to get employment; others are related to decreasing inequalities, eliminating violence and harmful practices or improving chances for partnerships and social cohesion.

Environmental Sustainability

Environmental sustainability is probably the most developed component within the research on sustainable development, but it is worth reminding here that considering it as an isolated entity is wrong and misleading. Environmental sustainability is due its popularity to many institutions that started using this term during international conferences and public reports. A first demonstration of that is given by the increasing number of journals focused only on environmental concerns such as climate, energy, aquatic and terrestrial systems and carbon cycles (Moldan et al., 2011). Another important contribution was given by the OECD with its Environmental Strategy for the First Decade of the 21st Century, where key environmental objectives were presented in the context of enhancing sustainable development (OECD, 2001). In this report the OECD presented different criteria for assessing environmental sustainability summarized into four principles: regeneration, substitutability, assimilation and avoidance of irreversibility. Another example is given by the Millennium Ecosystem Assessment (2005), which identified ecological services within four categories (provisioning, regulatory, cultural and supporting) and which evidenced their strong relationship with human well-being, by showing how the latter depends on the former.

However, environmental sustainability is also characterized by different and, sometimes conflicting, theories. During the first years of the nineties, "Environmental Sustainability" has been defined as (1) improving people welfare and (2) ensuring that the amount of waste does not exceed the maximum absorbable. In this definition, the linkage with the economy is straightforward, when considering as environmental concerns the use of renewable and non-renewable resources and the generation of pollution and waste. Moreover, environmental sustainability is about protecting the biosphere and preserving biodiversity and biogeochemical integrity through a responsible use of land, air and water. In general terms, the main conclusions that can be derived from the studies on environmental sustainability is that human beings must learn (1) how to live and survive in a world which has biophysical limitations and (2) how to increase the resilience and capability of their economies to be able to adapt to changes.

3. Green Economy

Since the industrial revolution, countries have developed and grown at the expense of the environment: exploiting resources, generating pollutants, degrading ecosystems and endangering biodiversity. However, this process has not been the same all over the world. Figure 2 shows how countries perform in terms of the Ecological Footprint per person (which measures the ecological assets required by a population to support its economy and standard of living) and in terms of the Human Development Index (HDI, measures the development of a country). According to the Global Footprint Network (GFN, 2020), the Ecological Footprint of a region should be equal to its Biocapacity,

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which measures the ability to produce the demanded resources within a certain area and absorb their waste. At the current level, the world biocapacity per person is estimated at 1.7 global hectares, which means that those countries with an Ecological Footprint higher than 1.7 are demanding, on average, more resources and wastes than what the Earth is now able to regenerate and absorb. As it is shown in figure 2, on one hand, there are the Western countries and some Asian countries which use a high percentage of resources, more than it is at their disposal (represented by the Ecological Footprint on the vertical axes) and which enjoy a high welfare (represented by the Human Development index on the horizontal axes); on the other hand, there are some developing countries with alarming low levels of welfare and which consume less than what an equal division of resources would predict (1.7). Thus, not only there are countries which overexploit natural resources and which put under pressure the planet, but also there are huge gaps among different areas of the world, with the African countries which seem the most affected ones.

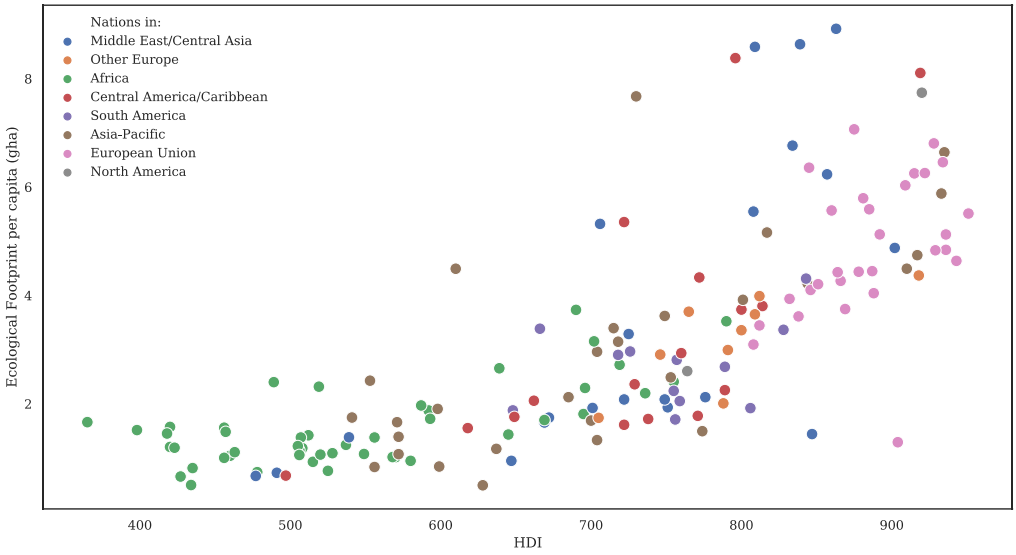

Figure 2: HDI and Ecological Footprint

Source: elaboration of the author, data for Human Development Index from "Human Development Report 2016" (UNDP) and Global Footprint Network database (GFN, 2020).

What is required today is a structural and radical transformation to overcome those burdensome inequalities and shift towards a more sustainable economic model. In other words, developed nations must reduce their impact on the environment without impairing citizens' well-being; whereas underdeveloped countries must improve their quality of life without affecting the planet. And it is exactly in this context that the concept of Green Economy arises as a driver for change.

The UNEP defines green economy as an economy "that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. It is low carbon, resource efficient, and socially inclusive" (UNEP, 2011). Thus, a green economy can be interpreted as an economy that invests in its natural capital (such as fisheries, agriculture, forests, lands, water resources, etc..), as considered one of its most critical assets, and which provides measurable benefits for the society as a whole. Also, it improves the efficiency usage of its resources, by increasing the percentage of renewables, cutting wastes and pollutants, preventing biodiversity losses and reducing the environmental impact of some of its key-services, such as transportation and tourism.

Shifting towards a green economy model requires an expensive and structural transformation process of the whole economic system, an issue that is delaying the green revolution in many developed countries. However, the same situation, looked from the perspective of developing countries, can represent an opportunity. As a matter of fact, for those countries, the "system" that must be converted into a green one does not exist or it is at its very first phases of development. Most of the energy and urban infrastructure that characterizes every economic model is still at its infant stage in the case of developing countries; thus, the "transition" required to developed economies does not take place. In this case, the greening process can be interpreted as the starting point for developing, which overcomes the first phase of unsustainable development that other countries have witnessed. Following

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the example of advanced economies, thus choosing the "grow now, clean up later" approach, would be costly and irresponsible (UN, 2019).

Moreover, most of the studies which deem green policies as detrimental for developing countries, do not consider the new opportunities that green economy models provide. Here it is suggested a different perspective, in which potential synergies that would arise between development and conservation of the environment are taken into account as tools which support developing countries in the transition towards a sustainable development path. It is believed that those countries may leverage new competitive advantages, such as innovative technologies and products and green skilled workers; moreover, it is believed that green policies could smooth unemployment issues, tackle gender inequalities and reduce poverty across sectors which are crucial in developing economies, such as the agriculture, forestry, energy and fishery ones.

Another point that must be considered here is the strong relationship between developing countries and natural resources. As a matter of fact, developing nations suffer the most for environmental pressures because they highly depend on natural resources for what concerns consumption and income generation. This high vulnerability asks them to consider even more seriously the need for changing the growth path towards sustainable practices. In those contexts, environmental improvements could have the double positive effect of bringing higher quality environmental goods (with positive effects on human health), and of reducing the risks related to the high dependency of the growth model from depleting natural resources.

Green economy could represent an important opportunity for developing countries. Up to this point, it is worth clarifying that there is not a universal green policies' package that should be implemented by a country to be successful. Moreover, as for developed countries, the role of international aid and institutional support becomes even more important for low-income countries. The green growth path of each economy will depend on its institutional settings, resource endowments, environmental needs and degrees of development. And thus, challenges and opportunities will be necessarily distinct for different countries.

4. Green Policies

It is useful to provide some practical examples of green policies, to have a better understanding of their formulation and usage. In this sense, a cross-analysis of the most relevant pioneering works on green measures provided by the UNEP (2011) and the OECD (2011) has been conducted and the most significant elements have been highlighted here.

- ***Long-term orientation***. Shifting towards a green model requires structural changes and radical transformations which need some time to reveal both the positive and negative externalities they cause to the economy; thus, ignoring a long-time perspective would lead to under- or overestimate the overall impact that a green policy could have on a country.
- ***New measurement tools***. A Green Economy, whose ultimate aim is that of preserving the environment while supporting the sustainable development of the country, needs practical and reliable measures, appropriate assessment methods, policy evaluation platforms and exhaustive data to track progresses. If reliable tools are absent, the risk is to undertake a wrong path and move towards other unsustainable practices.
- ***Government's engagement.*** Public policies must support and fund research and development, provide subsidies to entrepreneurs, regulate property and investment, facilitate information diffusion and learning, monitor both improvements and delays and contribute with incentives for the whole population.

For what concerns the topics which are covered the most by green policies, the following non-exhaustive list provides some valuable examples.

- ***Innovation***. Fostering innovation is fundamental. As a matter of fact, economies in general are usually stuck in systems and structures they are familiar with and which make them reluctant to change even when radical benefits would be provided. Innovation could help to shake the status quo, but it needs trustable incentives, especially when a coherent and robust protection for investors lacks. This is why countries should provide a well-designed framework to improve investors' safeguarding through specific intellectual property rights (IPRs); also, governments should try to attract foreign direct investments (FDIs) and transfers of technologies by reducing trade barriers and making transactions easier and effective.

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- ***Education*** and ***Training***. Governments must invest in education, training and communication in order to increase awareness among the population and build up new skills to absorb incoming technologies and innovative way of living and doing business. In this way, people by themselves will turn into drivers for a green change instead of passively receive what is decided for them at the governmental level.
- ***Waste Management***. Waste represents one of the most severe challenges that the globalized and developed world needs to face. After years and years of uncontrolled development, a high amount of resources has been depleted and wasted at its maximum level; this is why today human beings are in a condition in which they have not enough resources for their survival and, at the same time, they are overwhelmed by the amount of waste they have produced. However, in the last decades new techniques have been introduced in the green economy to face waste issues. It is often used the term "circular economy" to refer to those models in which waste is taken and reused within the production system, with the goal of maximising the value of products and materials which "circulate" within the economy (OECD, 2020). Another example is the "sharing economy", which allows people to share underused goods or services to optimize their consumption and reduce waste.
- ***Renewable energy***. The implementation of renewable energy technologies is considered of utterly importance because of the different economic effects (besides the environmental ones) it determines, such as increasing energy access for people living in "energy poor" countries or creating new jobs. However, governments are required to provide valuable and effective incentives to enhance the shift towards renewables within the energy sector.
- ***Green cities***. Green cities are needed to foster efficiency and to reduce the impact of buildings and transportation services. Cities account for about the 67% of global energy use and 71% of global energy-related CO_2 emissions. Moreover, urbanization is increasing at utterly high rates to support a growing population, especially in Asia and Africa. In conclusion, when countries commit themselves towards green growth goals, they must include urban planning issues within their policy programs given the central role cities play in the environmental impact of a country.

5. Concluding Remarks

What should be clear is that countries, including China, are now moving towards a different model of development, defined "sustainable", which considers at the same time economic, social and environmental issues. However, there is not a universal model which works for the whole world, thus each country must define the structural change that its own characteristics, need and culture require. It must be also highlighted here that in a sustainable development strategy, social development is mandatory as well as protecting the environment, and that it has been exhaustively demonstrated that one does not come at the expense of the other. In this context, the green economy approach has been introduced as a tool for achieving sustainable development, and whose aim is evidencing the importance of green policies as a driver for an economy as a whole.

References

[1] Global Footprint Network (GFN). 2020. Ecological Footprint [EB].: Footprint Network.
[2] Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-being [R]. Washington D.C.: Island Press.
[3] Moldan B., Hak T., Janoušková S. 2011. How to Understand and Measure Environmental Sustainability: Indicators and Targets [J]. Ecological Indicators, Volume 12: 4-13.
[4] Munasinghe M. 2001. The sustainomics transdisciplinary meta-framework for making development more sustainable: applications to energy issues [J]. International Journal of Sustainable Development, Volume 4 (2): 6-54.
[5] OECD. 2001. OECD Environmental Strategy for the First Decade of the 21st Century [R]. Paris: OECD.
[6] OECD. 2011. Towards Green Growth: A Summary for Policy Makers [R]. Paris: OECD.
[7] OECD. 2020. Environment at a Glance 2020 [R]. Paris: OECD.
[8] UN. 2019. Sustainable Development Goals: Knowledge Platform [EB].: Sustainable Development ORG.
[9] UNEP. 2011. Towards a Green Economy [R]. New York: UN.