

Environment and sustainable development

البيئة والتنمية المستدامة

Leila BOUDIA

University Oran 02 (Algeria), l_demographe@yahoo.fr

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Abstract :

The concept of sustainable development is directly related to population, since the people are the ones creating wealth and the economies reap the sowed benefits. On the same line of thought, the real level of development in a society depends on the quality of its human resources.

Based on that, this research paper seeks to study sustainable development in light of its relationship with the green economy, which means sustainable economic growth in relation to the preservation of the environment and its various elements. In other words, studying the environmental balance and its role in reducing carbon emissions resulting from industries based on non-renewable energy sources represented in coal, petroleum and fossil fuels, which led to Increasing the harmful carbon footprints, as well as a threat to these scarce resources, which are estimated to run out in the short term. To achieve this goal, the research at hand aims to answer the following question: What is the relationship between achieving sustainable development and environment?

Keywords: sustainable development, green economy, population, human development, environment

ملخص:

الحديث عن التنمية المستدامة لا يكون بمعزل عن السكان حيث إن الثروة تنشأ بهم ولهم في الوقت ذاته وتجنّي الاقتصاديات بذلك ثمارا ولهذا السبب أيضا فإن المستوى الحقيقي لتنمية مجتمع ما يتوقف على نوعية موارده البشرية . تتمثل مشكلة الدراسة في التنمية المستدامة وعلاقتها مع الاقتصاد الأخضر الذي يعني بنمو اقتصادي مستدام في ظل الحفاظ على البيئة وعناصرها المختلفة بمعنى التوازن البيئي ودوره في تخفيض الانبعاثات الكربونية الناتجة عن الصناعات القائمة على مصادر الطاقة غير متجددة والمتمثلة في الفحم والبتروول والوقود الحفري مما أدى الى زيادة الاثار الكربونية الضارة وأيضا تهديد لهذه الموارد التي تتميز بالنفاذ في الأجل القريب.. انطلاقا من الهدف المنشود و وضع التساؤل التالي: ما علاقة تحقيق التنمية المستدامة بالبيئة؟

كلمات مفتاحية: التنمية المستدامة، الاقتصاد الأخضر، السكان، التنمية البشرية، البيئة.

1. Introduction:

The various commitments and activities that serve the economy, especially in the major industrialized countries caused an increasing pressure on the environment. This increased pressure enabled the achievement of growth and sustainable development without violating the environmental system with the provision of aid to poor countries in order to advance education, health and infrastructure, thus achieving justice and equality in development.

The focus on an environmentally friendly economic activity and one of the ways to achieve sustainable development began with the Rio de Janeiro Earth Summit in 1992, and after twenty years again at the United Nations Conference on Sustainable Development RIO + 20 which is titled New Horizons Towards Achieving Sustainable Development, and a conference Rio +20 obliges governments of countries to implement their promises of fair and sustainable economic growth.

Achieving sustainable development and high growth rates indefinitely has become one of the desired goals globally and locally, as all countries of the world are striving to achieve sustainable development that includes all aspects (economic, social, environmental, political, and technical).

Based on the aforementioned aim, we ask the following question:

What is the relationship between the achievement of sustainable development and environmental economics and the need to maintain ecological balance?

2. Challenges of transformation and transition to an economy that maintains an ecological balance:

There are many challenges that countries will face in their transition to clean (green) energy, but they must intensify their efforts in order to overcome these challenges such as:

- Lack of careful planning in the field of development policies.
- Shifting jobs from one sector to another, as the increase in jobs in certain sectors is offset by a decline in a number of jobs in other sectors, especially in the transitional phase, and this leads to the spread of the

unemployment problem among a large group in society, especially the youth group. (Saud, 1981, p.182)

- The possibility of creating additional protection policies and technical barriers to trade poverty which still affects nearly seventy million people in the Arab world, including the lack of minimum health services and clean water for more than forty-five million Arabs, and the lack of efficient use of freshwater and energy sources.
- The option of switching to a green economy is an expensive one and may not result in an automatic and equal victory at the economic and environmental levels, and this may be at the expense of other developmental goals.
- The high cost of environmental degradation in the Arab countries, which amounts to ninety-five billion dollars annually, equivalent to five percent of the total gross domestic product.

3. Sources of an economy that maintains an environmental balance:

3.1. Renewable Energy:

Increasing the supply of energy through renewable sources reduces the risks of high and unstable fossil fuel prices in addition to mitigating the effects of climate change, as the current energy system based on fossil fuels is one of the biggest causes of climate change and is responsible for increasing the proportion of carbon emissions and greenhouse gases (Akram and Hanafi, 2014, p.p.439-441). On the same token, renewable energy represents a major economic opportunity with this sector requires by replacing investments in energy sources that rely heavily on carbon with investments in clean energy, which are represented in:

- Conventional renewable energy (biomass energy): It depends on the use of biomass materials (Biomass) and biogas (Biogas). It also includes plant and animal organic waste that can be treated by bacterial fermentation or thermal combustion.
- New renewable energy: It consists of solar energy, wind energy, hydro energy, and geothermal energy. One of the critical elements that make up the transition to a green economy is the development of environmentally sound technology and the availability of access to it, and the technological means of our time help us to find cleaner and more sustainable production methods, so it is necessary to pay attention to scientific

research and methods of developing energy use to be in the interest of climate and low emissions. .

3.2. Green Buildings:

The transition to an economy based on environmental balance requires focusing on the use of environmentally friendly materials that preserve water in light of the limited water resources, and reduce the consumption of electric energy despite the increase in demand for it, in order to reduce emissions that change the climate (Deeb, 1993, p. 823). Construction is an important economic and social issue in terms of creating new jobs and industries, and this construction will have a far-reaching impact that encourages the transition to it to achieve sustainability and economic growth.

3.3. Sustainable Transportation:

Sustainable transport provides the basic needs of individuals and communities in a safe and secure manner, without causing harm to health, the ecosystem and the interests of future generations. For the reason that the means of transport in it are dependent on renewable energy sources, cars and public transport partially operate on electricity.

3.4. Water management:

Water is an essential component of sustainable development, and ecosystems have a major role in conserving water in quantity and quality. In addition to that, water management is linked to irrigation and the provision of drinkable water, health and sanitation. It is estimated that about half to two thirds of water is wasted in surface irrigation, and some solutions are found in changing the institutional structure of water management. Based on this, there is a reason to invest public and private capital directly in water supply networks, and doing such efforts will not just lead to reducing water wastage, but also implies that it will provide low job opportunities for the average skills, the green economy will collect rainwater and reuse it, desalinate sea water, generate energy from water, and also reuse used water in order to preserve the water stock.

3.5. Waste Management:

This concept revolves around recycling waste to produce other products of lower quality than the original product, including, recycling paper, plastic, metal

waste, glass, as well as recycling biological waste through aerobic fermentation treatment, anaerobic fermentation, worming fermentation process, and treatment of toxic waste, as the green waste management works to create jobs and provide unique investment opportunities in recycling, organic fertilizer production and energy generation (Nasser, 2010, p.p. 135-136). It guarantees achieving clean agriculture, protecting the environment from pollution, improving the economic and environmental situation, and improving health, social and rural levels.

3.6. Land Management (Sustainable Agriculture):

It is necessary to pay attention to the concept of a green economy in order to clean the agricultural sector, support rural livelihoods, integrate poverty reduction policies into development strategies, adapt new agricultural technology to mitigate the effects of climate change, and strengthen development partnerships to confront contemporary environmental challenges such as desertification, deforestation, encroachment, unsustainable urbanization, soil erosion, and biodiversity loss, and this requires the formation of a common understanding of green growth and the development of a theoretical model in this regard, as well as the development of a set of indicators that cover economic, environmental and social aspects (Mosad, 2002). Greening the agricultural sector mainly aims to:

- Restore and enhance soil fertility by increasing the use of natural and sustainable inputs of produced nutrients, diversified crop rotation, as well as the integration of livestock and crops.
- Reducing food spoilage and loss by expanding the use of post-harvest storage processes and equipment.
- Reducing chemical pesticides and herbicides by implementing integrated biological practices for managing weeds and pests, and organic farming , in addition to reforestation to purify the air
- Reducing the greenhouse effect by using the no-till farming system as a result of the great lack of need to operate agricultural machinery, and thus we can reduce carbon dioxide in the atmosphere, and reduce the use of fuel, as well as leaving a large proportion of organic carbon without decomposition.

4. The Entities concerned with the eco-conservative economy:

- The government: it enacts laws, the policies it pursues, encourages entrepreneurship and environmental innovation
- The private sector (a special role for new entrepreneurs and small and medium enterprises): designing innovative goods, adopting environmental management systems, and new environmental investments.
- Financial Institutions: Environmental Investments
- International organizations: providing technical assistance, supporting technology transfer, encouraging regional cooperation, urging the achievement of sustainable development
- Civil society organizations: legal advice, building local capacities in the preparation of green, income-generating projects
- Consumers: They are considered the strongest ally for the growth of a balanced economy, by embracing a culture of sustainable production and consumption (**Najri and Hanafi, 2000**)

5. The concept of sustainable development and its characteristics:

5.1. The concept of sustainable development:

Sustainable development can be defined through: raising the standard of living of the Arab community in a civilized manner that guarantees a good life for people, and includes: the steady development of human wealth and Arab partnership on the basis of knowledge and the Arab cultural and civilizational heritage and the continuous upgrading of economic conditions on the basis of knowledge, innovation, development and exploitation of local capabilities (Radi, 2014, p.p. 55-58).

Arab investment and the intent to use natural resources while rationalizing consumption and maintaining a balance between construction and the environment and between quantity and quality.

The Portland Report issued by the International Commission on Environment and Development in 1987, entitled "Our Common Future," defined sustainable development as development that meets the needs of the present without jeopardizing the ability of future generations to satisfy their needs.

The Food and Agriculture Organization (FAO) defines sustainable development (adopted in 1989) as:

Sustainable development is “managing and protecting the natural resource base and directing technical and institutional change in a way that ensures the achievement and continued satisfaction of human needs for current and future generations. Such sustainable development (in agriculture, forests and fish resources) protects land, water, plant and animal genetic resources, does not harm the environment and is appropriate from Technically, economically appropriate and socially acceptable.”

5.2. Characteristics of sustainable development

The term sustainable development was introduced in 1974 in the wake of the Stockholm Conference, which was followed by the Rio Summit for the first time on the environment and sustainable development, which announced in 1992 the characteristics of sustainable development, which are summarized as follows:

- It is a development that is based on the dimension of time. It is necessarily a long-term development, which depends on estimating the potential of the present, and it is planned for the longest future period of time during which variables can be predicted.
- It is a development that puts meeting the needs of individuals in the first place. Its priorities are to meet the basic and necessary needs of food, clothing, education and health services, and everything that is related to improving the quality of human material and social life.
- It is a development that takes into account the preservation of the biosphere in the natural environment, whether its basic elements and compounds such as air and water, for example, or the vital processes in the biosphere such as gases. Micro and macro in the biosphere, through which resources and elements are transported and purified to ensure the continuation of life.
- It is an integrated development based on coordination between the disadvantages of resource use, investment trends, technological choice, and how to make them all work in harmony within the environmental system in order to preserve it and achieve the desired continuous development.
- It is a development that seeks to meet the future needs in the natural resources of the vital space of the planet.

5.3. Dimensions of sustainable development:

Sustainable development has different dimensions, as it is not based on the environmental aspect, but also includes economic and social aspects. These dimensions are intertwined with each other. It is not permissible to deal with them in isolation from one other. (Abdullah, 2015)

The dimensions of sustainable development are represented in three basic dimensions:

5.3.1. Economic dimension

Sustainability means achieving continuity by generating a high income that enables part of it to be reinvested in order to allow replacement, renewal and maintenance of resources, as well as the production of goods and services on an ongoing basis and maintaining a certain level of balance that includes the following elements; Sustainable economic growth, efficient capital, economic justice, and the provision and satisfaction of basic needs.

5.3.2. The social dimension

The social dimension of sustainable development focuses on the fact that the human being is the essence of development and its ultimate goal through attention to social justice, combating poverty, providing social services to all those in need, in addition to ensuring democracy through the participation of peoples in decision-making in a transparent manner, sustainability of institutions and cultural diversity. (Ghoneim, 2010, pp.30-31)

5.3.3. Environmental dimension:

Environmental dimension which can be achieved by taking into account the environmental limits so that each environment system has certain limits that cannot be crossed from consumption and depletion, but if these limits are exceeded, it leads to the deterioration of the ecosystem and on this basis, limits must be placed in front of consumption, population growth, pollution, bad production patterns, water depletion, tree cutting and erosion Soil, which focuses on the basis of the stability of natural resources, avoiding the irrational exploitation of non-renewable resources, preserving biological diversity and using clean technology, which is able to adapt and achieve environmental balance. The environment is a control center for natural resources that aims to

raise the standard of living from all sides and organize environmental resources so that they constitute an essential element within any development activity that affects development trends and the selection of its activities and project sites in a manner that aims to maintain environmental integrity.

6. The interrelationship between the basic dimensions of sustainable development

The dimensions of sustainable development are interconnected (Geurek Meek, 2007, p.p.40-41):

- **Economically:** An economically sustainable system is a system that is able to produce goods and services on an ongoing basis, maintain a certain manageable level of economic balance between public output and public debt, and prevent social imbalances resulting from economic policies.
- **Environmentally:** An environmentally sustainable system must maintain a stable platform of natural resources, and avoid excessive depletion of renewable and non-renewable resources. This includes the protection of biodiversity, atmospheric balance, soil productivity and other natural ecosystems that are not usually classified as economic resources.
- **Socially:** The system is socially sustainable when it achieves justice in the distribution, and deliverance of social services such as health and education to those in need, while also providing gender equality, political accountability and popular participation.
- Secondary dimensions of sustainable development: In addition to the previous three dimensions, there are those who add secondary dimensions in the form of three dimensions namely:

The technological dimension or (the administrative and technical dimension). This dimension is concerned with the transition to cleaner and more efficient technologies that move society to an era that uses the least amount of energy and resources, and that the goal of this Technology systems (Farhat, 2012): the production of a minimum number of gases and pollutants and the use of certain standards that reduce the flow of waste and return the waste internally. The technological dimension is an important element in achieving sustainable development, because in order to achieve sustainable development, it is necessary to move from resource intensification technology to intensifying information technology and this blinds the shift from reliance on productive

capital to reliance on human capital and social capital. Sustainable development can occur only if production is carried out in ways and means that maintain and increase the stock of capital of the five mentioned types. Therefore, the three basic economic processes represented in production, distribution and consumption must be added to a fourth process, which is the preservation of resources.

A fifth dimension is added with another one called the cultural dimension, and the imperative of integrating this dimension came in 2005, after the ratification of the International Convention on Cultural Diversity. future as well as rational use of natural resources.

7. Indicators of sustainable development:

These indicators contribute to evaluating the extent to which countries and institutions have progressed effectively to achieve the sustainable development goals, so that the

Policy makers use it in decision-making processes. The sustainable development indicator is the indicator that helps to clarify, where we are, which way we will go, and how far away from the desired goal .A good indicator is that which identifies the problem before it occurs or before we reach the disaster. Before referring to those indicators, it is necessary to know what should be available in these indicators so that we can rely on them, provided that they are as follows (Muhanna, 2000, p.22)

- National in terms of scope and size.
- Linked to the main objective of assessing progress towards sustainable development.
- Understandable, meaning that it is clear, simple, unambiguous, and Within the capacity of national governments.
- Limited in number, and can be adapted according to future development.
- Expanded to include the agenda of the twenty-first century and sustainable development
- Represent the global collective agreement to the greatest extent possible.
- Relies on data that is available or available at a reasonable cost, that is documented and of known quality and that can be updated regularly.

The measurement of environmental sustainability (Future Horizons, 2011) is based on 20 main indicators divided into 68 sub-indicators. It provides a comparative study of countries in their success in achieving sustainable development according to an accurate numerical method and methodology. From systematic criticism, but the indicators that are more accurate, comprehensive and able to reflect the reality of development in sustainable development are those indicators about the perceptions of the twenty-first century agenda set by the United Nations and labeled with indicators (pressure, status and response, and they are as follows:

7.1. Social indicators:

- The concept of social indicators is about creating the conditions upon which countries and people would be able to achieve the following: (Manea and Nasser, 2004)
 - Social equality, through fair distribution of wealth and combating poverty. There are two clear indicators to measure the extent to which countries achieved social justice or not, which are the percentage of the population below the poverty line, and the amount of disparity between the rich and poor.
 - Appropriate health care for all people, especially paying attention to remote and rural areas with controlling endemic, infectious diseases and epidemics resulting from environmental pollution.
 - Education, which is considered as the most important human right, because it is the most important means to achieve sustainable development in any modern society. Raising awareness among individuals, especially the poor, and introducing the importance of education for the individual and society. Among the indicators of education progress (the illiteracy rate, the extent to which the individual continues in the educational process, and the percentage of state spending on education and scientific research).
 - Housing and population, where rapid population growth and the migration of rural residents to cities affect the achievement of sustainable development and lead to the failure of the economic and urban development plans of the state, and two indicators have been executed to measure this (population growth rate and per capita urban buildings).
- Social security and the protection of individuals from crimes. This is attained through achieving justice, democracy and social peace, and it is measured by

the number of crimes committed per 1000 individuals in society (Mohamed Raafat, 1988)

7.2. Economic Indicators:

It includes issues of economic structure, production, and consumption patterns in countries which is reflected in the following:

- The economic structure as it is united through the rate of per capita GDP, the trade balance of the state, the ratio of external and domestic debt to the national income, the extent of aid received by countries, and the investment rate in the national income rate.
- Patterns of production and consumption: as most countries have turned to unsustainable production and consumption patterns, which are not well studied and drain resources quickly (Hamad and Talbi ,2008),. This can be measured through the extent of resource intensity in production, the rate of per capita energy consumption, the quantities of waste and its recycling, the availability of transportation.

7.3. Institutional Indicators:

- The institutional framework, which includes the establishment of appropriate institutional frameworks for the implementation of sustainable development through the development of national strategies for each country, and the signing of global agreements on sustainable development.
- The ability of state institutions to achieve sustainable development from the human, scientific, economic and political capabilities.

7.4. Environmental Indicators:

Contemporary environmental issues are:

- Change in the gaseous atmosphere of the earth, which is represented in: global warming, the ozone hole, and climate change, which is measured through limiting carbon dioxide emissions into the atmosphere, addressing excess air pollution, and improving air quality through the Keto and Montreal protocols.

- The use of Land by protecting it from environmental degradation, combating desertification, stopping the removal of natural forests, and urban encroachment on agricultural lands, while working to achieve sustainable development of agricultural, forest and pastoral production.
- Water species and their protection from pollution by stopping overfishing, identifying the level of pollution in the water, and calculating the amount of water of all kinds and the amount that is lost every year, develop fisheries, protect endangered fish species, and solve the problem of rising sea levels in the coming years, which poses a major threat that will lead to the flooding of vast areas of islands and land.
- The relationship between environmental economics and sustainable development based on the aforementioned indicators of sustainable development and the elements of environmental economics, we can summarize the recent relationship between sustainable development and environmental economics (Hani Swailem, 2016). The first link is based on resources and how to preserve them for future generations and ensure their sustainability. In addition to that, environmental economics also claims to preserve resources, however, It has negative repercussions on the development process and the violation of its objectives, meaning that development cannot be based on weak environmental resources which would damage the environment and harm human needs. Therefore, sustainable development should be based on taking into consideration the environment and looking at the environment and development in the face of one and the same, because sustainable development will not achieve its goals without adopting sound environmental policies, i.e. a sound environmental economy.

Conclusion:

Sustainable development is considered as one of the most important challenges that face various countries, since its development is linked with eradicating poverty and improving the standard of living of the individual by increasing the average income to reach economic well-being. In order to achieve sustainable development, the environment and the economy must be integrated together in the decision-making process with the need to pay attention to human development.

References:

1. Abdullah Hassoun Muhammad and others, (2015), sustainable development, concept, elements and dimensions, PhD thesis, Diyala magazine, number sixty-seven.
2. Aida Radi Khanfar, (2014), Environmental Economics "The Green Economy" Assiut Journal of Environmental Studies - Issue 39
3. Frouhat Hadda, (2012), Renewable energies as an entrance to achieving sustainable development in Algeria: A study of the reality of the project to apply solar energy in the Great South in Algeria, Journal, Research, No. 11.
4. Future Horizons (2011), a political, economic, and strategic journal issued by the Emirates Center for Strategic Studies and Research.
5. Geurek Meek, (2007), The Green Champions, Germany Magazine, No. 3, Societies Publishing.
6. Hamad Sahel, Muhammad Talbi (2008), a research entitled the importance of renewable energy in protecting the environment for sustainable development - a presentation of the German experience - Al-Bahith magazine, No. 06.
7. Hani Swailem, (2016), The Development Strategy: Egypt's Vision 2030, Through Eyes from Outside.
8. Ibrahim Suleiman Muhanna (2000), Urbanization and the Dominance of Major Cities in the Arab Countries - Dimensions and Effects on Sustainable Development, Economic Studies, Emirates Center for Strategic Studies and Research, No. 44.
9. Manea Gamal Abdel Nasser, (2004), The Arab Maghreb Union: A Political Legal Study, Dar Al Uloom for Publishing and Distribution, Annaba
10. Mohamed Mahmoud Ibrahim El-Deeb (1993), Energy in Egypt, Anglo-Egyptian Library
11. Mohamed Raafat Ismail Ramadan (1988), Renewable Energy - Dar Al-Shorouk - Egypt.
12. Mosad Salama Mosad Mandour (2002), Solar radiation in Egypt, a study in climatic geography, Faculty of Arts, Mansoura University
13. Murad Nasser, (2010), Sustainable development and its challenge in Algeria, Faculty of Economics and Facilitation Sciences, Al-Tawasul magazine, No. 26 June 2010, pp.135-136
14. Nejri Youssef Gamal El-Din, Samir Akram Ahmed, Mohamed Hanafi Hassan, The Green Economy Concept and Requirements in Education, Institute of Educational Studies and Research, Cairo University
15. Othman Muhammad Ghoneim, Magda Abu Zant, (2010), sustainable development, its philosophy and methods of planning, and obstacles to development and its measurement tools, Dar Al-Safa
16. Samir Akram Ahmed, Muhammad Hanafi Hassan, Najwa Youssef Jamal Al-Din (2014), Green Economy, Education, third issue
17. Saud Youssef Ayesh (1981), Alternative Energy Technology

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