

THE INTERACTION BETWEEN ENVIRONMENT AND ECONOMICS TO REALIZE A STABLE DEVELOPMENT: AN ANALYSIS OF THE COMPATIBILITY COST



Mostéfaoui Sofiane^{1,*}

¹ University of Ahmed Draia –(algeria)

Mostéfaoui_sofiane@univ-adrar.edu.dz

Submission date: 13/02/2023 Acceptance date: 29/05/2023 Publication date: 04/06/2023

=====

Abstract: The environment constitutes nowadays a sound pillar of the economic development. It is by then an unequal factor to be taken cautiously into consideration when the government or any economic institution attempts to draw a blueprint for its strategy. In addition to this, many researches had revealed evidently that the environmental indicators play a pivotal role in defining the growth process of many economic indices. Here, the issue is revolving around a pro-cyclical dilemma: does the economic development bring a considerable amelioration system or cause harm? or does the improvement of the eco-system have the needed prerequisites for the development? The paper tries to answer these questions by highlighting how far the nexus economic development-environment is interrelated through the measure of the compatibility paradigm.

key words: Environment; Economic development; Compatibility; Strategic Alliance; Polluting Industries

JEL classification: Q01; Q56; Q57

ملخص: تشكل البيئة في الوقت الحاضر دعامة سليمة للتنمية الاقتصادية ولكن قد يكون هذا عاملاً غير متكافئ يجب أخذه في الاعتبار بحذر عندما تحاول الحكومة أو أي مؤسسة اقتصادية رسم مخطط لاستراتيجيتها. بالإضافة إلى ذلك، فقد أوضحت العديد من الأبحاث أن المؤشرات البيئية تلعب دوراً محورياً في تحديد عملية نمو العديد من المؤشرات الاقتصادية. هنا، تدور القضية حول معضلة مسابقة التقلبات الدورية للتنمية الاقتصادية: هل تؤدي التنمية الاقتصادية إلى نظام تحسين كبير أم تتسبب في ضرر؟ أم أن تحسين النظام البيئي له المتطلبات الأساسية اللازمة للتنمية؟ تحاول الورقة الإجابة على هذه الأسئلة من خلال تسليط الضوء على مدى ترابط العلاقة بين التنمية الاقتصادية والبيئة من خلال مقياس نموذج التوافق.

الكلمات المفتاحية: البيئة؛ الاقتصاد البيئي؛ التوافق كلمة؛ كلمة؛ (من 05 إلى 07 كلمات).

تصنيف جال: Q01، Q56، Q57

1.Introduction:

The environment concern had attracted the focus of business strategy field because of the great sensitivity of industry, the companies as well as the governments in an attempt to decipher the clear prerequisites for the sustainable development. The result of this environmental emphasis had generated the scope of the environmental management considered as a pathway of the economic institutions to reduce their environmental risk exposure. In this regard, the respect or neglect of the environmental considerations is now a prominent factor to determine the management efficiency of the company and its credibility. Consequently, many benefits are acquired by the company through the proper integration of the environmental needs and the true understanding of the proactive interaction between the economic institution and its surrounding environment. As an example of the benefits' package, we cite the efficient management process of the energy, the business orientation towards the waste minimization process, the brand of the company and its competitive advantage as well as the awareness of the company to the importance of the corporate social responsibility in general.

THE BUSINESS COMPANY AND THE ECONOMIC SYSTEM

The environmental management system is an interesting issue should to be tackled and understood wisely inside any economic institution. This consideration comes from the fact that the business company is at the core of any environmental debate both as a cause and as an effect. At the side of effect, the economic development is considered as an evident root of the environment destruction. This is due to the exploitation of the natural resources and the high magnitude of the industrial waste. This issue paves the ways to take into consideration the interrelation between the economic development and the pollution as a result. In this context, the issue of environmental pollution is not the result of today, but it is an old one. The reasons are mainly due to the excesses of the developed world, especially in the consumption of various natural resources, whether renewable or non-renewable. This is added to the expansion of production of fossil energy sources, the exploitation of agricultural land and forests are the main causes of increased pollution of air as well as water and soil (Amber & Barla, 2006); (Davidson, 2000); (Davis, 1995); (Ekins, 2000); (Gray & Ronald , 1998)

The problem of pollution of the environment is of an international nature. Pollutants of a country do not stop at their political borders, but across thousands of miles to affect the environment and well-being of other peoples. The impact

of this pollution extends beyond that, the negative impact of this pollution is due to the coming generations, which will find themselves in a real dilemma and do not know how to get out of it. Therefore, it was incumbent on this generation to pay attention to this issue and try to understand its complexity to solve the issue and preserve the environment for both present and future generations.

The importance of studying the relationship between environment and development is due to the evidence of the economic indicators that are lacking in the achievement of sustainable development in the countries of the world. The absence of such indicators from the environmental data and the data on natural resource balances had a negative impact on the economies of these countries, so it was necessary to take into account both the environment and the development dimension in the formulation of economic development policies in the state. The United Nations Environment Program (UNEP) has defined it as a “set of natural and social resources available at a given time to satisfy humanitarian needs” ((Grossman & Alan , 1995); (Jaffe & Karen , 1997)

Or “is the framework in which man lives with other organisms, including the physical, chemical, biological, social, cultural, economic and political, and get the elements of his life” (Magnani, 2000); (Meyer, 1992). Development, in its general sense, is primarily aimed at satisfying the needs and aspirations of humankind. The development can be considered as a goal on two levels. The first is the eradication of poverty. The second is to achieve a quality of life that is higher than living in conditions that respond to the dignified human rights in life.

Development is one way to elevate human beings, but what is happening is quite the opposite. Development has become one of the means that has contributed to the depletion, damage and even pollution of the resources of the environment. Such development can be described as a factor that benefits the economy more than the environment. It is the “economic development” rather than the “environmental development” that benefits from the resources of the environment and harnesses it to serve the economy, which has led to the emergence of many problems.

If life goes naturally without intensive human intervention to exploit its resources to increase its productivity, to facilitate the way of life and to increase levels of well-being, the risks associated with these problems have decreased. The environment has been able to absorb the effects of its deterioration and pollution that accompany many economic projects. In this context, population with minimal goods and services alongside with the steady population increase leads to higher levels of waste accumulation (solid, liquid, gaseous) than the environment or biosphere can absorb directly (Peterson, 2006); (Selden & Song, 1994); (Stewart, 1993); (Xepapadeas, Vangelis, & Dimitra, 2007). Examples of this are the impact of burning fossil fuels into the air with harmful

emissions, as well as the misallocation and direct use of resources that lead to environmental degradation by depleting some resources and reducing land productivity. This fact leads to increasing desertification at the expense of fertile soil and negatively affecting wildlife as well as the degradation of the general resources of the population on the Earth's surface.

In other words, the relationship between environment and development is strong and not limited to production and consumption, but takes another dimension: redistribution of income, often from the poor to the rich, because the latter are the initiators of development projects that pollute the environment. This does not mean that the poor do not pollute the environment, as slums are always a source of pollution.

In developing countries, poor people do not make good use of the resources available to them, such as the soil they are spoiling by pursuing agricultural policies with unscheduled agricultural cycles, the forests they are going to cut and the grazing land they patronize in an unfair way. The Stockholm Conference, held in 1972, emphasized the need to link environment with development. The 1992 Rio de Janeiro Conference recommended that land should be considered as a natural resource to achieve development within the framework of environmental objectives and conservation (Stern , 2007).

THE BUSINESS COMPANY AND THE SUSTAINABLE DEVELOPMENT

In 1987, the important report of the World Commission on Environment and Development was issued, entitled “Our Common Future”. Its various chapters focused on the idea of sustainable development and the role of the international community in achieving this development, protecting the environment on the one hand and preserving the future generations on the other. The report defined sustainable development as “Development that responds to the needs of the present without sacrificing the possibility of satisfying the needs of future generations in the future”

At present, the essential needs of the population in developing countries have not yet been satisfied. Above all, these people aspire – and this is their right – to improve their quality of life. In a world dominated by poverty and injustice, this means the creation of ecological and non-ecological crises. Sustainable development means satisfying the needs of all, as well as satisfying their aspirations for a better quality of life.

Opinions differed about the relationship between environment and development as follow (Suri & Duane, 1998); (Selden & Song, 1994); (Ruttan, 1971); (Munasinghe, 1999); (Lieb, 2002).

- Preventers: Those who believe that no amount of pollution or degradation of the environment should be sacrificed for development, but that the environment must be preserved as it is, and that the responsibility of any generation to deliver it to future generations without change or modification adversely affects them.

- Conservatives: emphasize the need to preserve the environment, although it is used for development but it must be done in a selective manner. This group is known as the Greens, who merge in their vision between the conservatives and preventers.

- Economists: Those who believe that pollution cannot be prevented completely, since after a certain stage, the costs of removing more pollution will exceed its revenues.

- Exploiters: They see the need to continue development processes without reservation because the environment is able to absorb pollution and to correct the deterioration automatically; and if it fails, the 'modern technology' can deal with it can use new resources for the new population. As a result, the generations see no reason to stop development processes, or even reduce them, in order to preserve and protect the environment.

The relationship between environment and development is a close one: the environment is the framework in which man lives and receives from it the elements of life and the satisfaction of needs. This satisfaction of needs is achieved through the exploitation of environmental resources within the framework of the so-called development process, more comprehensive and inclusive of the meaning of economic growth. The latter is the result of development efforts (Knack & Keefer, 1995); (Grossman & Alan, 1991); (Martínez, 1995); (Rock, 2016); (Gangadharan & Valenzuela, 2001); (Anderson & Donald, 2001).

As a permanent human being seeking to satisfy his needs by raising the rates of economic growth in various economic and social activities, humans have caused a disturbance of the environmental balance, which has been manifested in environmental pollution, desertification, climate change and loss of biological diversity. To meet the needs of the present generations without compromising the ability and capacity of the environment, it is necessary to integrate the environmental considerations into the heart of development-oriented efforts, resulting in a new concept of development and economic growth as well as the sustainable development (Bulte & Daan, 2001).

Until the early 1960s, environmental problems did not attract sufficient attention to decision-makers and policy makers alike in society and organizations. However, in the early 1970s there was an increase in environmental awareness and a lack of commitment to the application of

environmental policies to preserve resources, resist pollution and prevent environmental disturbance. International trade and the acceleration towards economic growth have contributed to the lack of commitment and increased depletion and pressure on the environment. Many events, reports and political practices paved the way for the development of the concept of sustainable development: (Grossman & Alan, 1995); (Antle & Gregg, 1995); (Cropper & Charles, 1994):

- Stockholm Conference on the Environment and the establishment and creation of the United Nations Environment Program in 1972;
- The famous report entitled Growth Limits;
- The 2000 US Global Report to the President;
- International Strategy for the Conservation of Nature (WCN / UCN 1980);
- Report on Sustainable Development of the Atmosphere;
- Report of the United Nations under the title of our common future;
- The 1992 Rio de Janeiro Conference, also known as the Earth Summit on Environment and Development;
- RIO + 5 Conference.

The Arab world witnessed the launch of its sustainable development programs since the Arab Declaration on Environment and Development issued by the First Ministerial Conference on Environmental Considerations in Development held in Tunis in October 1986 and the Arab Declaration on Environment, Development and Future Prospects issued in Cairo in September 1991.

The definition of the Branded Tland Report (WCED 1987) for sustainable development has gained international fame in the economic sphere since the beginning of the dialogue on the concept. The 1987 report of our Common Future, an attempt to define sustainable development as the process of ensuring that our capabilities to meet our needs today does not negatively affect the ability of future generations to meet their ones (Copeland & Taylor, 2005); (Herman & Joshua , 2004); (Felder & Rutherford, 1993).

It is the process of interaction between three systems: a vital system, an economic system, and a social system. (Ostrom, 2010) focused on what he called the environmental functions of human life. Ostrom has identified thirty-three environmental functions under four main headings: laws, strategy, production, and information. While others (Fontana & Sawyer, 2013) sought to group environmental functions into three groups, including keeping up with resources for human activities, absorbing pollution from human activities and

keeping up with the environmental services of human activities. Another economic approach was also called the natural economy (environmental), which includes a strategic proposition that the economy is a system within the framework of the ecosystem; and as a result, it drains the resources used by nature and pollutes them. Thus, all economic activities are derived from nature and all economic production is in fact a consumption of nature. Communities seek to assess the success of their development plans based on specific indicators. The traditional way of assessing the success of community plans often focuses on a specific theme such as per capita income. However, recent strategies related to measuring sustainability focus on measuring the interrelationships between the range of interactions, including economics, energy use, environmental and social factors in a long-term sustainable structure. To measure the efficiency and the cohesion among different systems, sustainability indicators include many broad aspects such as economy, the environment, culture and civilization of society, the role of politics, government, resource use, education, health, quality, housing, population, public security, welfare and transportation. Examples of indicators in economic aspects include the distribution of job opportunities, the fair distribution of income and training. Resources related to the use of resources include energy consumption, use of hazardous materials, water use methods and indicators related to culture and social civilization such as child care and the amount of voluntary activities in sustainable programs and activities (Fontana & Sawyer, 2013).

It is clear that organizations play a vital role in the implementation of development plans and projects. Therefore, there is a growing trend among policy makers and business leaders in particular and all organizations in general to develop management methods to cope with the concept of sustainability as well as contributing to the consolidation of the concept of sustainable development. Therefore, many standards have been developed to assist organizations, beneficiaries and governments in defining optimal policies. The principle of compliance with these standards is based on a voluntary basis. However, the application of some voluntary standards is gradually becoming a compulsory path as dictated by the policies of governments and rapidly evolving international agreements.

THE ENVIRONMENT AND THE STRATEGIC ALLIANCE

The concept of sustainable development is often used as an indicator of the importance of environmental management approaches. However, the reality of the concept of sustainable development is not limited to that, but includes a focus on an economic management strategy that includes an environmental,

social and institutional perspective of human development. Indeed, human development is a process aimed at increasing people's choices. These basic choices focus on long-lived lives free of maladies, acquiring knowledge and obtaining the resources needed to achieve a decent standard of living. Development has two aspects: Human capabilities such as improving health, knowledge and skills. The second is the use by people of their acquired abilities in the personal, productive, cultural, social or political spheres. In order for human development to be successful, there must be a delicate balance between these two aspects. In this sense, UNDP presents a method of development analysis that differs from traditional approaches to analyze economic growth, human capital formation, human resource development or human well-being and basic needs

It is noteworthy that the strategies for the implementation of human development plans focused on social welfare issues during the 1950s and considered them as the remaining component of development in the 1960s. In the 1970s, poverty alleviation and provision of needs were emphasized. The 1980s saw a clear disregard for this aspect. In the early 1990s, public participation is defined as the development of human resources, and the development of people means investing in people's abilities, whether education, health or skills, so that they can work towards a creative product. Development for people means ensuring that their economic growth is distributed widely and fairly, while development is designed by people to give everyone the opportunity to participate. Focusing on popular participation, the role of non-governmental organizations represented in many charities and social organizations is recognized as a key player in the development process in all its aspects. On many occasions, most nations focused on the importance of the executive role of these organizations, associations and private and charitable bodies in the field of management, environment and development. The Great Conference on Environment and Development, known as the Earth Summit held in Rio, Brazil, in 1992, of 650 non-governmental organizations in which the agenda 21 stated that social groups, including youth and non-governmental organizations, should be supported and involved in the development process (Antle & Gregg, 1995); (Bulte & Daan, 2001).

One of the strategies proposed by the World Bank for MENA countries to achieve sustainable development is strengthening environmental institutions and popular participation by building institutional capacity in environmental policy-making as a top priority as well as by improving administrative and technical capacities and strengthening the monitoring and application of environmental quality standards. It also requires the need to publicize environmental risks and involve the public in setting priorities, making decisions, motivating public action and raising awareness. As in many countries of the world, charities exist

in countries of the Arab world where they seek to play different roles according to the needs of society.

THE ENVIRONMENT COST AND THE ECONOMIC DEVELOPMENT

The issue of environmental degradation is a challenge for economists, because it sheds light on the most important areas of market failure to express the natural wealth of society and to lay the foundation for economic growth. An example of this failure is that natural forests are only included in national economic accounts when they are removed and traded in the market, while the environmental benefits of the forest are ignored, such as carbon dioxide absorption, wind and storm erosion, improved weather and soil in general.

On the other hand, natural resources such as petroleum and minerals extracted from the ground are included in the national accounts as national income, although they are depleted resources that will end and be denied to future generations. This conceptualization comes in the sense that the person drains his resources and does not keep his children and grandchildren the same opportunities that he has, if not better, as the concepts of sustainable development.

There is a rotation between economic growth and environmental degradation. While environmental degradation has negative effects on growth and economic activity, this activity itself has caused this deterioration. On the other hand, more stringent controls to mitigate environmental degradation will restrain growth and allocate resources to finance mitigation policies, and lax control of environmental pollution will indirectly constrain future growth as a result of environmental damage to economic activities such as agriculture Tourism, health and infrastructure sectors. The depletion of non-renewable natural resources is one of the forms of environmental degradation. Unless compensatory investments are made to preserve natural capital and ensure its renewal (Ostrom, 2010).

The Concept of the Environment:

The environment includes three components:

- Ecology: includes water, air and soil above and below, such as minerals, natural plants, animals and their total interactions
- Man made products: Any man-made technology, factories, senior, ships ... etc
- Social environment: the cultural, political and organizational system of human societies.

From the concept of the composition of the environment can be defined as a set of natural, industrial and social resources available at a given time.

Definition of environmental standards: Environmental standards are generally defined as conditions that must be met in products in either their production inputs, their constituents, their production methods or their packaging, as well as specific quantities of pollutants discharged during production and how to deal with them. These standards adopt a legislative form that relies either on censorship and sanction, or on market-based procedures (Antle & Gregg, 1995). In this regard, environmental degradation is divided into two types: the first is the depletion of non-renewable natural resources, i.e., their total depletion, particularly for mineral resources and fossil fuels. The second is the pollution of renewable natural resources, such as water, air and land. It includes toxic emissions, waste and disruption of ecosystems.

The Areas of Market Failure:

The failure of the market in the environmental economy appears if the property rights associated with the goods and resources are ineffective or incomplete. Environmental degradation is an indicator of market failure resulting from the external effects associated with consumption or the production of any commodity or because of overuse of available resources in general.

Some neglected aspects of economic life impose themselves and are not at the heart of economic analysis yet. The most important of which is that natural resources are not considered productive assets; these resources are still excluded from the concept of “optimal use” of resources. The term “less expensive” is still meant to be less expensive for production factors directly involved in the production process, and environmental losses and social costs, i.e., community-level and economy-wide costs, which are called external costs, are not taken into consideration. The following are examples of the market failure.

- Is it reasonable, for example, that natural forests are included in national economic accounts only when they are removed and traded in the market, while the environmental benefits of the forest are ignored, both in carbon dioxide absorption, wind and storm erosion, improved weather and soil in general.

- The cost of increasing carbon dioxide, which causes global warming, is not calculated nor does it account for the cost of increasing chlorofluorocarbons and chlorine monoxide that cause ozone hole.

- Is it possible that oil, natural gas and minerals extracted from national accounts are included as national income, while they are derived from depleted resources of non-renewable natural capital, which will one day end and be denied to future generations? The nature of income requires that it be renewed in

every period. Is it rational that a person consumes his capital and considers it a flow of income?

The depletion of these non-renewable natural resources is one of the forms of environmental degradation. Unless compensatory investments are made to preserve natural capital and ensure its regeneration, natural resource-based growth will not be sustained or long-term. The following are examples of social costs of environmental degradation:

- Lack of biodiversity: in the sense of low yields and quality of fish fishing in the seas, oceans, rivers and lakes. Moreover, the extinction of many organisms because of the collapse of the natural ecosystems in which they live which in particular affects soil fertility and agricultural production over the long term.
- Health damage caused by pollution, such as garbage, drinking water pollution and poor sanitation.
- The negative effects on tourism and the qualitative decline of the importance and value of recreation and rest areas.
- Low housing prices and rents due to noise, poor appearance and physical and moral pollution.

Environmental economics means how economic and political activity affects the environment in which we live; and how environmental protection standards affect economic growth, i.e. the economic impacts of environmental policies.

ENVIRONMENTAL ECONOMICS

Environmental economics means how economic and political activity affects the environment in which we live. On the other hand, how environmental protection standards affect economic growth, that is, the economic impacts of environmental policies. It is a reciprocal relationship between economy and the environment. Economic activity leads to environmental degradation, and environmental degradation negatively affects long-term economic growth.

Where the environment provides the economy with natural resources that are transformed through the process of production and energy into consumer goods, then these natural resources and energy eventually return to the environment in the form of undesirable outputs. Consumers also receive direct environmental services such as clean air, fresh water, tourism, fishing and trekking. In the end, the environment is used as a repository for the disposal of waste resulting from the consumption of goods and services, thus describing the relationship between the environment and the economic system as a closed system.

Economics is viewed as a complex capitalist asset. Economists therefore want to prevent any deterioration that can occur in the value of this complex capital asset so that it can continue to provide its services to staff for as long as possible with the same efficiency. Thus, it means theoretical and empirical studies of the economic effects of environmental policies the whole world. Special issues include the costs and benefits of alternative environmental policies to address air, water and soil pollution, protection of biodiversity and global warming.

The combination of the environmental dimension and the economic framework has transformed the concept of economic development from the mere exploitation of scarce economic resources to meet the multiple and renewable human needs to the concept of "sustainable development", defined as development that meets the needs of the present without compromising the right of future generations to meet their requirements. To stop the exploitation of economic resources such as water, oil and forests, but emphasizes the rights of future generations to these resources, especially if resources are depleted or non-renewable such as oil, so that they should be compensated for depletion this generation of them.

The importance of environmental economics lies in the fact that all human economic activities are linked to the environment that provides all types of resources, which are received by all pollutants of human activities. It is therefore necessary to assess the importance of products and services provided by ecosystems on the ground to maintain the sustainability of resources and energy without compromising the balance of the natural environment. Moreover, the environmental resources are considered as essential assets of the global economy that should be protected.

Environmental economics explores the market's failure to assess natural environmental components, external influences and property rights, and to view the environment as a capital asset. For example, the usual problems that an environmental economy may face are how the commitment to protect the environment and environmental standards affects the costs of production and, consequently, economic growth and regional competitiveness if applied. The relationship between economy and the environment is presented by the following headings:

- The concept of economics and the environment is based on the resource element.
- The ultimate goal of economics is to satisfy multiple and renewable human needs, and this satisfaction will only be achieved through the safety of environmental resources.

- Human behavior is the main cause of environmental degradation, so economics is concerned with the subject of environmental degradation due to the economic implications of it.

The economic problem is the relative scarcity of resources and exacerbates this scarcity of non-renewable resources and the pollution of renewable ones, so that the management of the environment cannot be separated from the field of economics. In this regard, the environmental economics deals with two main topics:

- Identification of the economic impacts of environmental degradation.
- Use of economic instruments to reduce environmental degradation.

THE MIGRATION OF POLLUTING INDUSTRIES

Environmental standards in developed countries have started to tighten since the early 1970s, putting more costs on economic activities. The debate over the impact of these environmental standards on the export competitiveness of these countries on the one hand and on the quality and safety of the environment on other countries is intensified.

If a state or a group of states is to tighten environmental standards, will the environment of another state be affected by the change in international specialization? What is the change? Will international competitiveness patterns change?

Hikchser-Olin's theory suggests that countries where both demand and technology are identical and when one possesses a natural abundance in a particular production element more than others, the export goods would require intensive production in the use of that element. If the relaxation of environmental policy in a country would reduce the cost of exploiting the environment natural resources, such as energy and minerals, and reduce the cost of polluting economic activities for water and air, then the supply of environmental resources would increase because of its low cost. At the same time, lower levels of incomes and social preferences will lower the demand for a clean environment. Both supply and demand will affect the allocation of resources and relative prices of internationally tradable products, thus affecting competitive patterns (Fontana & Sawyer, 2013).

Conclusion:

This brief analysis delivers some of the interaction processes that exist between the environment and the economic development. This debatable issue raises many questions about both the trend and the magnitude of impact of the nexus environment-development. In addition to this, huge efforts have been

made in the field of environmental management in such a way to respect the change of the environment in accordance with the prerequisites of the economic development; but much bigger efforts are yet to be made to create the best symbiosis between the environment and the development.

References:

- Amber, S., & Barla, P. (2006). Can Environmental Regulations be Good for Business: An Assesment of the Porter Hypothesis . *Energy Studies Review* 14(2), 42-62.
- Anderson, T., & Donald, R. (2001). *Free Market Environmentalism*. New York, USA : Palgrave MacMillan .
- Antle, M., & Gregg, H. (1995). Environment and Development: Theory and International Evidence. *Economic Development and Cultural Change* 43(3), 603-625.
- Bulte, H., & Daan, P. (2001). Environmental degradation in developing countries: households and the (reverse) Environmental Kuznets Curve. *Journal of Development Economics* 65(1), 225-235.
- Copeland, R., & Taylor, M. (2005). Free trade and global warming: a trade theory view of the Kyoto protocol. *Journal of Environmental Economics and Management* 49(2), 205-234.
- Cropper, M., & Charles, G. (1994). The Interaction of Population Growth and Environmental Quality. *The American Economic Review* 84(2), 250-254.
- Davidson, C. (2000). Economic Growth and the Environment: Alternatives to the Limits Paradigm. *BioScience* 50, 433-440.
- Davis, A. (1995). Learning to Love the Dutch Disease: Evidence from the Mineral Economies. *World Development* 23(10), 1765-1779.
- Ekins, P. (2000). *Economic Growth and Sustainability: the Prospects for Green Growth*. London : Routledge .
- Felder, S., & Rutherford, T. (1993). Unilateral CO2 Reductions and Carbon Leakage: The Consequences of International Trade in Oil and Basic Materials. *Journal of Environmental Economics and Management* 25(2), 162-176.
- Fontana, G., & Sawyer, M. (2013). Post-Keynesian and Kaleckian thoughts on ecological macroeconomics. *European Journal of Economics and Economic Policies* 10(2), 256-266.
- Gangadharan, L., & Valenzuela, M. (2001). Interrelationships between income, health and the environment: extending the Environmental Kuznets Curve hypothesis. *Ecological Economics* 36(3), 513-531.
- Gray, B., & Ronald , J. (1998). Environmental Regualtion, Investment Timing and Technology Choice. *Journal of Industrial Economics* 46(2), 235-256.
- Grossman, M., & Alan , B. (1995). Economic Growth and the Environment. *The Quarterly Journal of Economics* 110(2), 353-377.
- Grossman, M., & Alan, B. (1991). Environmental Impacts of a North American Free Trade Agreement. *NBER Working Papers* 3914, National Bureau of Economic Research, Inc., 1-57.
- Herman, E., & Joshua , F. (2004). *Ecological Economics: Principles and Applications*. Washington D.C; USA: Island Press .
- Jaffe, B., & Karen , P. (1997). Environmental Regualtion and Innovation: A Panel Data Study. *The Review of Economics and Statistics* 79(4), 610-619.

- Knack, S., & Keefer, P. (1995). Institution and Economic Performance: Cross- Country Tests Using Alternative Institutional Measures. *Economics and Politics* 7(3), 207-227.
- Lieb, M. (2002). The Environmental Kuznets Curve and Satiation: A Simple Satic Model. *Environment and Development Economics* 7(1), 429-448.
- Magnani, E. (2000). The Environmental Kuznets Curve, Environmental Protection Policy and Income Distribution . *Ecological Economics* 32(2), 431-443.
- Martínez, J. (1995). The environment as a luxury good or “too poor to be green”? *Ecological Economics* 13(1), 1-10.
- Meyer, S. (1992). *Environmentalism and Economic Prosperity: Testing the Environmenal Impact Hypothesis*. MIT .
- Munasinghe, M. (1999). Is Environmental Degradation an Inevitable Consequence od Economic Growth: Tunneling Through the Environmental Kuznets Curve. *Ecological Economics* 29(1), 89-109.
- Ostrom, E. (2010). Polycentric systems for coping with collective action and global environmental change. *Global Environmental Change* 20(4), 550-557.
- Peterson, S. (2006). The EU Emission Trading Schemes and its Competitiveness Effects for European Business: Results from the CGE Model DART. Dans R. Antes , & B. Letmathe, *Emission Trading and Business* (pp. 275-296). Physica-Verlag Heidelberg .
- Rock, T. (2016). Freshwater Use, Freshwater Scarcity, and Socioeconomic Development. *The Journal of Environment & Development* 7(3), 278-301.
- Ruttan, W. (1971). Technology and the Environment . *American Journal of Agricultural Economics* 53(5), 707-717.
- Selden , M., & Song, D. (1994). Environmental Quality and Development: Is There a Kuznets Curve for Air Pollution Emissions? . *Journal of Environmental Economics and Management* 27(2), 147-162.
- Stern , N. (2007). *The Economics of Climate Change* . Cambridge University Press .
- Stewart, B. (1993). Environmental Regualtion and International Competitiveness . *The Yale Law Journal* 102(8), 2039-2106.
- Suri, V., & Duane, C. (1998). Economic Growth, Trade and Energy: Implications for the Environmental Kuznets Curve. *Ecological Economics* 25(2), 195-208.
- Xepapadeas, A., Vangelis, T., & Dimitra, V. (2007). Total Factor Productivity Growth and the Environment: A Case for Green Growth Accounting . *FEEM Working Paper Series* 42, 1-41.