



Environmental Economics: Bridging the Gap Between Environmental Policy and Sustainable Economic Development Goals

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Abstract

Through this study, we tried to identify the role of waste recycling in achieving the goals of sustainable economic development as part of the general environmental policy, as we noticed that spending on environmental protection is steadily increasing at the local and global level, and this spending has a clear impact on production, investment, consumption and the labour market, and environmental policy includes four main areas: Removal of waste and harmful substances.

Protection and purification of water and air, noise control, development of environmentally clean technology, and environmental education.

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Introduction

There is a direct impact of environmental policy on economic objectives. Through environmental policy, it can affect several areas. For example, the impact is either positive or negative. The state's failure to authorize the establishment of projects that it considers harmful to the environment or the closure of existing factories because of the great damage they cause to nature has a negative impact on employment. On the contrary, the increasing demand for environmental equipment, techniques and equipment can create new job opportunities that provide these goods, equipment and equipment.

In the absence of an environmental protection policy, industrial and even residential areas will become polluted areas that are difficult to live in due to the pollution of air and water, and economic growth will decline due to the lack of productivity of soil, animals and plants. On the contrary, environmental protection under an environmental policy based on the payer principle will make the production of products harmful to the environment difficult or not possible, and the construction of facilities that pollute the environment very expensive or not possible. Thus, the environmental protection industry flourishes and the industries of equipment and equipment for water purification and treatment, air filtration and insulation materials flourish, and the environment returns to its balance, and thus this intervention came to answer the following question: How does environmental economics influence the delivery of environmental policies to achieve the Sustainable Development Goals?

To answer the main research question, we attempt to address the following two sub-questions.

- What is the nature and effectiveness of international and local efforts undertaken to address the waste problem and promote the environmental economy?

- what extent does environmental economics contribute to achieving sustainable development goals, and what mechanisms can enhance this role?

To answer the two questions, we propose the following hypotheses.

- International and local efforts contribute to addressing the waste problem and promoting the environmental economy; however, their effectiveness depends on the integration of environmental policies, the availability of resources, and coordination among stakeholders.
- The environmental economy plays an effective role in achieving sustainable development goals by balancing economic growth and environmental protection, particularly when supported by mechanisms such as environmental regulations, clean technologies, and environmental awareness.

In this study, we rely on both the descriptive and analytical approaches due to the nature of the topic. The descriptive approach is used to describe the phenomenon under study, namely the relationship between environmental economics and sustainable development. The analytical approach is also employed to analyze the data and interpret its implications in order to reach a set of conclusions.

1. Previous Studies

Study 1: SETIONINGTYAS ET AL. (2022) Environmental Economics and the SDGs: A Review of Their Relationships and Barriers: This study examines the relationship between environmental economics and the Sustainable Development Goals (SDGs). It highlights the important role of environmental economics in supporting and achieving sustainable development. However, this role faces several challenges, including limited financial resources, technological constraints, and low environmental awareness.

The study concludes that there is a strong relationship between environmental policies and sustainable economic growth. It also emphasizes that environmental economics is a key tool for achieving the SDGs, while pointing out a clear implementation gap, particularly in developing countries.

Study 2: SHAOHUAI FENG ET AL .(2024) The intersection of

economic growth and environmental sustainability in China:

Pathways to achieving SDG This study examines the relationship

between economic development and environmental degradation in

China within the framework of the Sustainable Development Goals

(SDGs), by analyzing indicators such as carbon footprint, air and

water pollution, and resource consumption across 33 provinces during

the period 2005–2015.

It compares government policies aimed at balancing economic growth and environmental protection, with a focus on the trade-offs and co-benefits between development and environmental conservation.

The study concludes that there has been significant progress alongside some shortcomings in achieving the SDGs. It also indicates that investment in clean water enhances the protection of terrestrial ecosystems and climate action plans.

The findings emphasize the importance of policy coordination and linking economic development with environmental protection in order to achieve effective sustainable development.

Study 3: Khedidja Dakhia , Maroua Krama(2024)The impact of ICT on achieving Sustainable Development Goals(SDGs): A

Cross-Country Analysis This study examines the impact of

Information and Communication Technology (ICT) usage on the

achievement of the Sustainable Development Goals (SDGs),

particularly Goals 4, 5, 9, and 17, in a selected country from an

econometric perspective. The analysis is based on panel data covering

the period from 2010 to 2022 and employs a panel regression model

using the Panel Corrected Standard Error (PCSE) approach.

The results indicate that ICT has a positive effect on improving quality education, promoting gender equality, supporting industry and innovation, and strengthening partnerships for sustainable development.

The added value of this topic lies in moving beyond analyzing the relationship between environmental economics and sustainable development toward bridging the gap between environmental policies

and sustainable economic development goals. It integrates economics and the environment within a unified framework and shifts from analysis to proposing a practical role for environmental economics as a tool to enhance policy implementation and improve the achievement of the Sustainable Development Goals, especially given the existing implementation gap highlighted in previous studies.

2. International and local actions to address the waste issue and support the environmental economy:

International organizations have taken serious steps to eliminate the issue of environmental pollution by requiring developed countries to require their factories and industrial companies to take measures to reduce pollution and waste of natural resources. However, these measures are very expensive, which makes some companies work to increase their activities in developing countries that do not impose such measures, as such companies strive to obtain the largest return regardless of the impact of these products on humans and the environment. In many countries, parties have emerged calling for the preservation of the environment, and the United Nations has several programs as well as international organizations and associations to preserve the environment such as UNEP (UNEP).

The International Union for the Conservation of Nature and Natural Resources (IUCN) and the World Wildlife Fund (WWF) are based in Nairobi, Switzerland. At the beginning of 1969, environmental issues began to be discussed intensively in the corridors of the United Nations, and from that date, this year was considered the beginning of the serious beginning of the global interest in environmental issues. This was followed by a meeting of 2,200 researchers and scientists to discuss the issue of environmental problems, and the year 1971 was dedicated to studying the problems of the human environment in the French city of Moutaigue, which concluded with a set of recommendations and a report addressed to the Secretary-General of the United Nations to indicate their views and proposals towards the problems of environmental degradation.

2.1- The Stockholm Conference and its recommendations

The Stockholm Environment Conference took place in 1972, which lasted for about two years under the supervision of the United Nations with the presence of representatives of about 130 countries. This conference issued many publications and documents, including "We have nothing but the earth" by "Baber Word" and "Rene Dabaus". The discussions at this conference also revealed the different views between industrially developed and developing countries on human behaviour towards the environment. The industrialised countries were unanimous in their views that the situation should remain without plans to avoid environmental degradation, despite the economic, health and social impact of environmental issues. Most developing countries were of the opinion that environmental degradation is not a serious matter as long as it leads to an increase in the standard of living of the people of these societies (Kacimi, 2024, p. 3).

In addition to the above, the Stockholm Conference issued the World Declaration on the Environment, which focused most of its recommendations on the basic premises for understanding the environment and addressing the issues that resulted from the increasing demands of mankind. The World Declaration is also credited with calling for the development of global awareness of the environment and its issues, and emphasising the principle of peaceful coexistence with the environment and its resources.

The conference made several recommendations to address environmental issues. These recommendations include maintaining the earth's ability to produce vital resources and protecting endangered wildlife. It also emphasized the importance of preventing the depletion of natural resources while ensuring that humanity benefits from their exploitation. The conference called for the end of toxic substance dumping and the prevention of pollution in the seas to avoid damage to biological systems. In addition, it emphasized the need to support developing countries by providing financial and technological assistance to address environmental deficiencies caused by

underdevelopment and disasters. The conference also highlighted the importance of reconciling environmental protection with development needs and avoiding harmful effects on the environment in urban planning. The use of science and technology to manage and control environmental resources, as well as promoting environmental awareness and research, were also emphasized. Finally, the conference encouraged international cooperation and the development of international laws related to the environment.

2.2- Methods of environmental protection

Protecting the environment should be everyone's issue, whether the state with its agencies or governmental and non-governmental organizations, as well as public and private institutions and all individuals. To protect the environment, there must be thought, environmental awareness and civilised practice of all its natural resources, so that development efforts continue to give and future generations have the opportunity to survive, there are several ways to protect the environment, the most important of which are (malik & grohmann, 2012, p. 7):

- Do not overburden ecosystems with wastes that they cannot absorb in their natural cycle.
- Balancing the productive capacity of the environment with population growth.
- Developing technology methods that must take into account the interest of the environment and be environmentally friendly.
- Re-utilisation of resources through recycling, such as the reuse of scrap cars, whether by dismantling their parts or recycling their structure to make a new type of steel.
- Economy in the use of chemical pesticides, especially in the agricultural sector.
- Intensive afforestation, especially in areas prone to desertification or erosion.
- Combating oil slicks that pollute seawater and oceans, which are treated through several techniques to avoid ocean pollution and fish kills.

One way to combat sulphur dioxide gas resulting from the combustion of natural gas is by collecting it for use in the production of liquefied petroleum gas, methanol, and other organic chemicals. Various industries, such as iron, steel, and aluminium, employ preventive techniques to reduce pollution severity, such as using negative anodes to absorb carbon gases and equipping cement factories with filters to minimize the spread of dust. In terms of air pollution, efforts are being made to produce lead-free petrol and replace lead compounds with oxygenated compounds to treat emissions from transportation exhausts. To address the issue of acid rain, some industrially developed countries are working towards reducing the burning of fossil fuels, using low-sulphur coal, and removing acidic pollutants during coal combustion. These measures aim to minimize the environmental impact and health risks associated with industrial activities.

- Painting buildings with new types of paint to protect them from the harmful effects of acid rain.
- Combating food contamination by educating and monitoring food establishments on preventive measures to preserve food and the need to adhere to the necessary measures to preserve food until it reaches the final consumer, and punishing anyone who violates these measures.
- Wastewater treatment Some countries are making attempts to intensify the refining complexes of this water and turn it into usable water, while converting solid materials into organic fertilisers that are an alternative to chemical fertilisers.
- Waste control Intensive efforts are being made to innovate new technologies to reduce the proportion of waste, especially non-degradable plastics.
- Controlling radioactive waste by putting in place security and prevention measures in radiation areas, and the necessary ventilation in workplaces.

3. The role of environmental economics in achieving sustainable economic development.

In the late 1960s, environmentalism began to emerge, represented by non-governmental organisations, youth groups, and others expressing concerns and dangers to human health from environmental pollution. The interest in the environment and its issues increased in the late 20th century as scientists and researchers began to focus on environmental damage and risks that threaten the continuity of life on Earth. The spread of environmental awareness in industrialised countries has created new environmental ideologies, and these environmental ideologies have prompted economists to re-examine the fundamental pillar of economics: the scarcity of resources and their relationship with the potential for exploitation (singh, dogra, & yadav, 2025, p. 165).

3.1- The emergence of environmental economics

During the 1970s, a group of economists began to debate the issue of balancing an economy that maximises prosperity with an economy that conserves the environment and its resources. All that was needed was an effective price system that could reconcile maximising economic activity while maintaining acceptable levels of environmental quality. The views of a group of scientists crystallised into a new branch of economics that was conceptually shared by the social sciences, natural sciences and economics called environmental economics.

In 2008, the United Nations system launched the Environmental Economy Initiative to address global crises such as the financial crisis in 2007, the food crisis in 2008 and 2009 due to price increases in basic materials and increased production costs, and the climate crisis, with the hope of avoiding such crises in the future.

3.2 Definition of environmental economics:

The idea of environmental economics addressed a variety of economic doctrines, and goes back to economic concepts and as Tumero Pearce stated that environmental economics is more general and comprehensive than economics, because it takes broad areas and a

comprehensive vision of economic activities. Some also determine that environmental economics is an alternative to economics as it is in conflict with the basic principles of economics, and others see that environmental economics is the use of the basic principles of economics and expanding the fields of economic thought in the relationships between the environment and the concepts of economic science (zahra, 2020, p. 83).

The United Nations Environment Programme (UNEP) defines environmental economics as an economy that results in an improvement in human well-being and social equity while minimizing environmental risks and scarcity of environmental resources.

3.3 Advantages of environmental economics:

Given the main objective of the environmental economy, which is to protect the environment from pollutants caused by economic activities and preserve the right of future generations to exploit natural resources without compromising the right of current generations to achieve social well-being, the environmental economy is characterized by many things, the most important of which are (muthukrishan, 2024, p. 17):

- An economy in which carbon dioxide emissions are reduced, resource efficiency is increased, and all segments of society are accommodated.
- Growth in income and employment opportunities driven by public and private investments that reduce carbon emissions and pollution.
- Increased resource and energy efficiency and prevents the loss of biodiversity and ecosystem services.

3.4 Levels of environmental economy.

The environmental economy is applied at two levels, the first is a macro-economy and the second is a micro-economy and can be explained as follows (muthukrishan, 2024, p. 9)

3.4.1 - Macro environmental Economy: The macro environmental economy addresses environmental issues at the level of the economy as a whole, and one of its objectives is to reach sustainable levels of

social welfare that takes into account the preservation of the environment, and the macro environmental economy is concerned with the following points:

- Material and monetary assessment of environmental damage.
- Evaluate the environmental improvements resulting from the adoption or application of environmental policies, whether in the public or private sector.
- Providing information and counselling on the basis of which effective environmental decisions can be made.
- Assessing environmental damage and attempting to address it with environmental protection measures.
- Evaluate the development of the application of environmental policy tools aimed at preserving the environment.
- Analyse the implications of environmental protection policy on macroeconomic objectives.

3.4.2- Micro environmental economy: The micro-level environmental economy is also applied at two levels:

- At the level of the organization: The environmental economy at this level is concerned with analysing the institution's relationship with the natural environment and the qualitative development of the surrounding environment:
 - Studying and analysing environmental protection measures and objectives as well as maximising profits.
 - Provide publications and advice appropriate to the organisation and consistent with the requirements of environmental protection.
 - Contribute to directing production as required by environmental directives, instructions and regulations.
 - Studying investments that reduce environmental risks and environmental protection costs and the impact of environmental protection costs on the level of profits and analysing the environmental feasibility of projects.
- At the consumer level: The environmental economy is clearly visible at the consumer level of the environment. It is characterised by consumer rationality, which aims to maximise the benefit and

minimise harm to the environment, and the growth of environmental awareness and culture in the consumer in encouraging environmentally friendly products.

3.5 Benefits of the environmental economy:

The adoption of the environmental economy results in many environmental, social and economic benefits, as outlined by the United Nations Environment Organisation in its 2011 report in the following points (jindal, 2025, p. 236):

3.5.1- Addressing environmental challenges: The main goal of the environmental economy is to reduce environmental degradation, and among the most important environmental benefits is the reduction of environmental house gas emissions, improving resource use efficiency through the greening of economic sectors, and the mechanisms of transformation from the traditional economy to the environmental economy are based on reducing carbon emissions resulting from energy production and consumption, raising energy efficiency and expanding the use of renewable energy to improve energy and water management, protecting biodiversity, stopping the depletion of forests and fisheries.

3.5.2- Catalysing economic growth: The environmental economy aims to build a new model of economic development based primarily on the establishment of large environmental investments in various sectors such as environmental infrastructure, renewable energy, waste management and others. Although environmental economic growth appears slow in the short term compared to traditional economic growth that excludes environmental factors from its calculations, if we compare them in the long term, we will clearly see the acceleration of the growth of the environmental economy.

Climate change remains a critical challenge, with global temperatures having risen by approximately 1.1°C and carbon emissions reaching 36 billion tons per year. These trends underline the urgency of adopting environmentally sustainable policies.) Khedidja Dakhia(2024 ‘

3.5.3 Poverty eradication and job creation: The shift from the traditional economy to the environmental economy creates new job opportunities from environmental jobs in various economic sectors such as jobs related to renewable energy generation, improving energy efficiency, rehabilitation and protection of the ecosystem, ecotourism, waste management and others. Thus, the environmental economy provides a solution to the issue of unemployment, hence the importance of policies to support small and medium enterprises as a key source of job creation and their ability to adapt to the requirements of the environmental economy.

The transition to an environmental economy offers promising opportunities. It is expected to create around 24 million new jobs by 2030, while promoting resource efficiency and reducing environmental risks. Renewable energy plays a central role in this transition, accounting for about 30% of global electricity production and generating millions of jobs worldwide (organization, 2018).

The environmental economy also helps to minimise poverty by preserving natural resources and creating jobs in rural areas by:

- Creating new labour-intensive activities.
- Growth of activity in some sectors (direct and indirect employment).
- Creation of local jobs.
- Emergence of new activities.

4. Conclusion :

Through this paper, we tried to identify the role of the environmental economy in achieving the objectives of environmental policy, the most important of which is achieving sustainable development, and the study reached the following results:

Environmental policies aim to build a new model of economic development based mainly on the establishment of large environmental investments in various sectors such as environmental infrastructure, renewable energy, waste management and others, and although environmental economic growth appears slow in the short term compared to traditional economic growth that excludes environmental factors from its calculations, if we compare them in the

long term, we will clearly see the acceleration of the growth of the environmental economy.

The environmental economy works to eliminate poverty and create jobs as the shift from the traditional economy to the circular economy creates new job opportunities from environmental jobs in various economic sectors such as jobs related to renewable energy generation, improving energy efficiency, ecosystem rehabilitation and protection, ecotourism, waste management and others. Thus, the environmental economy offers a solution to the issue of unemployment, hence the importance of policies to support small and medium enterprises as a key source of job creation and their ability to adapt to the requirements of the circular economy.

The environmental economy also helps to reduce poverty by preserving natural resources and creating jobs in rural areas by Creating new labour-intensive activities, Growth of activity in some sectors (direct and indirect employment), Creation of local jobs, Emergence of new activities.

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