

From Knowledge to Action: Contribution of Environmental Studies in Sustainable Development

Bansiben Ileshbhai Modha^{1,*}, Deepak. S. Bhavsar²

Abstract

“The earth, the air, the land and the water are not an inheritance from our forefathers but on loan from our children. So we have to hand over to them at least as it was handed over to us.” Mahatma Gandhi. In the contemporary era, most developing and underdeveloped nations across the world are striving to achieve rapid economic growth. However, it is essential to recognize that this unplanned and indiscriminate pursuit of development has resulted in significant environmental degradation. Increasing urbanization, industrialization, population growth, and excessive exploitation of natural resources have caused serious adverse impacts on the environment. As a result, sustainable development and environmental protection have emerged as significant challenges for human society in the present age. In this context, there is an urgent need to adopt a sustainable development approach that promotes economic progress while simultaneously conserving and nurturing the natural environment. The present study attempts to examine and understand the contribution of environmental studies in the context of sustainable development. The study is entirely based on secondary data, including information collected from books, research journals, government reports, policy documents, and other documented sources related to environmental education and sustainability. The findings of the study indicate that environmental studies play a crucial role in creating awareness, developing positive attitudes, and fostering responsible behavior toward the environment. Environmental education helps individuals understand the interrelationship between human activities and ecological balance. The study further suggests that by prioritizing environmentally responsible practices and adopting sustainable development strategies that safeguard the interests of future generations, individuals can make meaningful contributions not only at the national level but also toward the protection of the planet as a whole. Thus, environmental studies serve as a strong foundation for achieving sustainable development and promoting responsible global citizenship. The study also suggests that by adopting a “knowledge to action” approach, environmental education can play a decisive role in building a sustainable and responsible society.

Keywords: Environmental degradation, environmental protection, environmental studies, sustainable development, Sustainable Development Goals (SDGs)

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INTRODUCTION

The rapid advancement of human civilization has been accompanied by unprecedented exploitation of natural resources to meet growing developmental needs. This extensive human interference with nature has resulted in several critical environmental challenges, including environmental pollution, loss of biodiversity, climate change, depletion of natural resources, and extinction of various plant and animal species. Historically, economic growth has been achieved largely at the expense of environmental sustainability, leading to a serious

imbalance between development and ecological stability. This imbalance has intensified environmental risks and posed significant threats to human well-being [1].

In recent decades, the adverse consequences of unsustainable development have become increasingly evident through the frequent occurrence of global and regional environmental crises, such as pandemics, droughts, floods, extreme rainfall events, and climate change-induced disasters. These challenges highlight the limitations of conventional development models and emphasize the urgent need for a paradigm shift toward sustainable development in the region. If timely and effective measures are not adopted, environmental degradation may severely compromise the quality of life of future generations and undermine the ecological foundation necessary for human survival [2–4].

Sustainable development cannot be achieved solely through technological innovations and policy formulations. Although environmental policies, international agreements, and scientific advancements are essential, they remain inadequate without a fundamental transformation of human attitudes, values, and behavior toward the environment. Sustainable development requires individuals and societies to adopt environmentally responsible lifestyles that balance economic growth and ecological preservation [5]. In this context, environmental studies play a crucial role in fostering awareness, ethical responsibility, and sustainable behavior among individuals. Environmental studies provide an interdisciplinary understanding of environmental issues by integrating scientific, social, ethical, and economic perspectives into the curriculum. They emphasize the interconnectedness between human activities and natural ecosystems and encourage responsible decision-making. The transition from “knowledge to action” is particularly significant in the pursuit of sustainable development, as theoretical understanding alone cannot ensure environmental protection. The practical application of environmental knowledge in daily life is essential for achieving long-term sustainability.

This study examines the contribution of environmental studies to promoting sustainable development through an analytical review of secondary data. This study relies on secondary sources such as published research articles, books, government reports, policy documents (including national and international sustainability frameworks), institutional publications, and online databases. By systematically analyzing the existing literature and documented evidence, this study seeks to identify key themes, concepts, and research gaps related to environmental education and sustainable development. This approach enables a comprehensive understanding of how environmental studies contribute to transforming individuals from environmentally aware citizens into responsible agents of sustainable development [6, 7].

The chart shown in Figure 1 shows the overall sustainable development process of different countries: 18% of countries are on track, 17% are in moderate progress, 31% are in marginal progress in sustainable development, and 17% are in stagnation or 18% are in regression [8–10].

Overall SDG progress 2015-2025

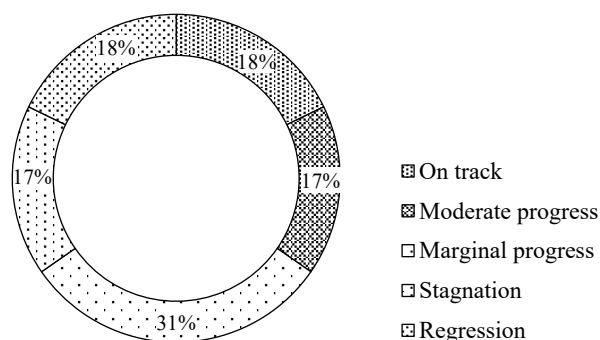


Figure 1. Overall sustainable development goals progress 2015–2025.

Source: United Nations, Sustainable Development Goals Report 2025.

REVIEW OF RELATED LITERATURE

Numerous studies have been conducted at both global and national levels to examine sustainable development and environmental conservation concepts. At the global level, the landmark report *Our Common Future* (1987), published by the World Commission on Environment and Development (Brundtland Commission), provided a clear and widely accepted definition of sustainable development. The report emphasized the necessity of maintaining a balance between economic development and environmental protection to meet the needs of the present generation without compromising the ability of future generations to meet their own needs. This report laid the foundation for subsequent research and policy initiatives related to sustainability issues.

International organizations have also highlighted the significance of environmental education in achieving sustainable development. UNESCO (the United Nations Educational, Scientific and Cultural Organization), through its reports on Education for Sustainable Development (ESD), has recognized environmental education as a vital instrument for promoting sustainable values, responsible behavior, and environmental stewardship. These reports stress that education plays a central role in enabling learners to understand complex environmental issues and actively participate in sustainable development.

Similarly, documents related to the United Nations' Sustainable Development Goals (SDGs) underscore the importance of environmental education as a key component of sustainability. The SDGs emphasize inclusive and quality education as a means of promoting sustainable lifestyles, environmental awareness, and global responsibility. Environmental education is therefore presented as a crucial link between human development and environmental conservation at the global level.

In the Indian context, several studies have explored the relationship between environmental education and sustainable development. These studies suggest that environmental education significantly enhances students' environmental knowledge and awareness. However, many researchers have observed a noticeable gap between knowledge acquisition and its practical application in everyday life. This indicates that while environmental education improves cognitive understanding, it does not always result in corresponding changes in behavior and sustainable practices.

Various Indian researchers have examined the relationship between environmental education and sustainable development. Studies conducted by Patel (2018), Desai (2019), and Shah (2020) analyzed how environmental education influences sustainable attitudes and practices among learners. These studies highlight the need to strengthen the practical and value-based components of environmental education to bridge the gap between environmental knowledge and sustainable behavior.

Overall, the reviewed literature reveals that although environmental education is widely recognized as an essential tool for sustainable development, greater emphasis is required to transform environmental knowledge into responsible action. This identified gap provides a strong rationale for the present study, which seeks to analyze the contribution of environmental studies to promoting sustainable development through a secondary data-based approach.

OBJECTIVES

1. To examine the concept of sustainable development and analyze its necessity in the context of contemporary environmental challenges.
2. To explain the meaning, scope, and significance of environmental studies in promoting environmental awareness and responsibility.
3. To evaluate the contribution of environmental studies in achieving sustainable development, with special reference to secondary data sources.

CONCEPT OF SUSTAINABLE DEVELOPMENT

Sustainable development refers to a pattern of development that ensures the responsible use of natural resources so that the needs of the present generation are fulfilled without compromising the ability of

future generations to meet their needs. This concept emphasizes the ethical responsibility of human beings to protect nature, which is not solely meant for human use but is shared by all living organisms.

According to the World Commission on Environment and Development, as recognized by UNESCO, sustainable development balances economic growth with environmental protection and social well-being. UNESCO further highlights that sustainable development is a holistic approach that integrates the environmental, economic, and social dimensions of development.

UNESCO also stressed the role of education in achieving sustainable development. Through its ESD framework, UNESCO promotes the development of knowledge, values, and responsible behavior that enable individuals to contribute to environmental protection and long-term sustainability. Thus, sustainable development is not merely a developmental goal but a continuous process that seeks harmony between human activities and the natural environment of the planet.

SUSTAINABLE DEVELOPMENT GOALS

The SDGs are 17 global goals adopted by the United Nations, as shown in Figure 2, to achieve a sustainable and inclusive world by 2030. They aim to end poverty and hunger, promote health, education, gender equality, and decent work, and ensure access to clean water and affordable, clean energy.

The goals also focus on reducing inequality, building sustainable cities, protecting the environment, addressing climate change, and conserving life on land and water. Peace, justice, strong institutions, and global partnerships are essential for achieving these goals and securing a better future for all.



Figure 2. Sustainable development goals.

Source: *Global Education Magazine*

INTERRELATIONSHIP BETWEEN ENVIRONMENTAL STUDIES AND SUSTAINABLE DEVELOPMENT

Environmental studies and sustainable development are closely interconnected, as effective environmental protection requires a clear understanding of the causes of degradation. Although climate change occurs naturally over long periods, recent studies have indicated that human activities have significantly accelerated this process. According to international environmental reports, the average global temperature has already increased by approximately 1.1°C above pre-industrial levels, largely due to anthropogenic activities such as industrialization, deforestation, and excessive use of fossil fuels.

The impacts of climate change are increasingly visible in the form of melting polar ice, rising sea levels, and extreme weather events worldwide. Global assessments suggest that sea levels are rising at an average rate of approximately 3–4 mm per year, leading to frequent floods and coastal vulnerability. In India, climate-related disasters such as floods, droughts, irregular rainfall, and heatwaves have increased significantly over the last two decades, affecting agriculture, health, and livelihood.

These challenges underline the moral responsibility of humans to protect the environment. Environmental studies play a vital role in creating awareness, developing ethical values, and promoting responsible environmental behavior. However, sustainable development can only be achieved when environmental knowledge is translated into everyday practices.

In the Indian context, the SDGs are targeted for achievement by 2030. The Government of India has integrated SDGs into national policies and programs related to education, health, poverty reduction, and environmental protection. Initiatives under the Ministry of Environment, Forest, and Climate Change (MoEFCC), such as environmental education programs, provide experiential learning through workshops, projects, exhibitions, and nature camps. Thus, environmental studies act as a key driver of sustainable development by fostering informed and responsible citizenship. Figure 3 shows the satellite image of rising sea levels.

RESEARCH METHODOLOGY

This study is analytical and conceptual in nature and is based entirely on secondary data. Since the objective of this study was to examine the interrelationship between environmental studies and sustainable development, primary data collection or field surveys were not undertaken.

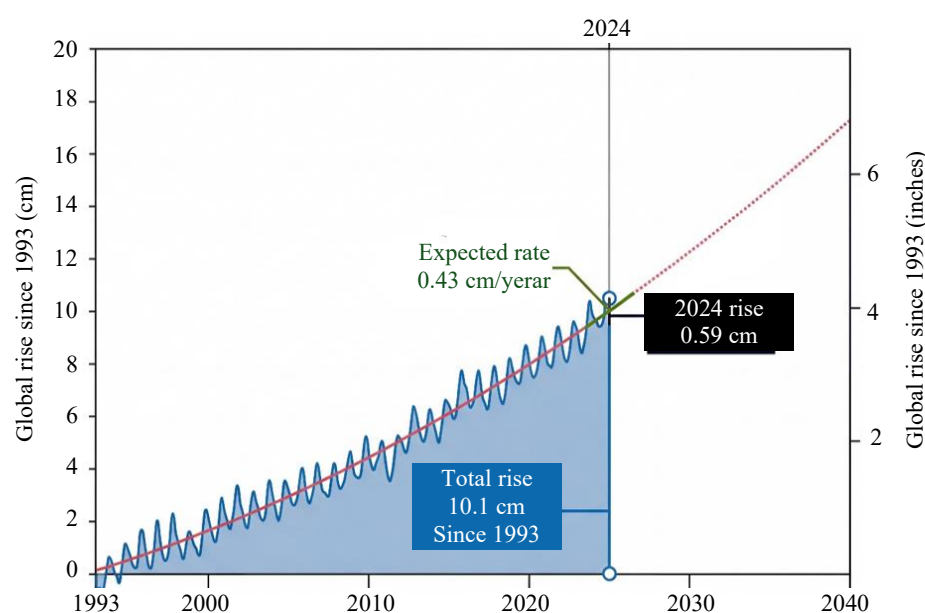


Figure 3. Satellite image of rising sea levels.

Source: NASA Sea level change portal.gov

Secondary data were collected from reliable and authentic sources, such as research theses available on Shodhganga, national and international reports, government publications, policy documents, books, and peer-reviewed research articles related to environmental studies and sustainable development. These sources provided theoretical insights and empirical evidence relevant to the study objectives.

For data analysis, comparative and descriptive methods were adopted. A systematic review of the existing literature was conducted to understand the key concepts, trends, and relationships between environmental studies and sustainable development. The collected information was carefully analyzed, compared, and synthesized to draw meaningful conclusions.

This study did not involve any statistical analysis or primary survey techniques. Instead, conclusions are derived solely on the basis of critical analysis and interpretation of secondary data. This methodology is appropriate for achieving the study objectives and developing a conceptual understanding of the role of environmental studies in promoting sustainable development.

FINDINGS OF THE STUDY

The findings of the present study indicate that environmental studies play a foundational role in achieving sustainable development. This study revealed that effective integration of environmental education is essential for fostering environmental sensitivity, particularly among young individuals. When environmental studies are imparted through practical and activity-based learning, the gap between theoretical knowledge and actual behavior is significantly reduced.

The findings further suggest that sustainable development can be effectively realized when environmental protection is regarded as the moral and ethical responsibility of individuals. This approach encourages responsible behavior and promotes long-term environmental conservation. The study also observed that government programs and initiatives related to the SDGs in India have contributed positively to enhancing environmental awareness among citizens.

However, despite these efforts, the findings highlight several challenges that persist at the practical level of implementation. Gaps remain between policy formulation and actual practice, limiting the full realization of sustainable development objectives in the region. Therefore, this study emphasizes the need for continuous improvement in teaching methods, curriculum design, and experiential learning approaches to make environmental studies more effective and impactful.

Challenges in Implementing Environmental Studies for Sustainable Development

Although environmental studies play a crucial role in achieving sustainable development, several practical challenges hinder effective implementation. According to recent global environmental reports, the average global temperature in 2024 reached approximately 1.55°C above pre-industrial levels, marking the highest level recorded to date. This highlights the severity of climate change caused by human activity.

In India, environmental problems are steadily increasing. The average annual temperature of the country increased from 25.05°C in 2001 to 25.74°C in 2024, leading to more frequent heatwaves, excessive rainfall, irregular monsoons, and water scarcity. These conditions pose serious challenges to sustainable development in the region.

Despite the Indian government implementing various policies and programs to achieve SDGs, India ranks 99th out of 167 countries on the 2025 SDG Index, indicating the need for significant progress in environmental protection and responsible consumption.

Another major issue in environmental studies is that, although people are aware of environmental problems, their behavior often does not reflect this awareness. Attitudes such as “everyone’s responsibility is nobody’s responsibility” and a lack of personal accountability weaken efforts toward

environmental protection. Additionally, factors such as poverty, population growth, rapid urbanization, and increasing consumption patterns further obstruct the path to sustainable development in the region.

Notably, India has made considerable progress in renewable energy, with its production nearly tripling over the past decade. However, technology alone is insufficient to combat environmental degradation and climate change issues. It is essential to translate environmental knowledge into practical behavioral changes through effective environmental education.

Therefore, to achieve Sustainable Development Goals, environmental studies must be made more practical, activity-based, and value-oriented, enabling individuals to recognize and fulfill their moral and social responsibilities to the environment.

SUGGESTIONS

Curricular reforms are essential to move from knowledge to action in environmental education. Activity-based learning should be incorporated to ensure that theoretical concepts are applied practically. For example, the Government of India's National Green Corps program, active in over 120,000 schools, engages students in activities such as water conservation, energy saving, waste management, and biodiversity protection through Eco-Clubs. Expanding such initiatives can significantly enhance environmental awareness and responsible citizenship. Integrating environmental education with SDGs helps develop a global outlook among students.

LIMITATIONS OF THE STUDY

This study primarily relied on secondary data sources, which limited the availability of primary, firsthand information. Consequently, this research is constrained by the scope and quality of the existing literature and reports. Additionally, the study's focus is limited to the role of environmental studies in sustainable development and does not comprehensively address all the social, economic, or geographical factors influencing environmental outcomes. Future research incorporating primary data collection and broader contextual analyses would provide a more in-depth understanding.

CONCLUSION

This study shows that environmental education is important for achieving sustainable development. It helps people understand the environment better and builds a sense of responsibility for protecting nature. Environmental studies connect theoretical knowledge to real-life actions. Including hands-on activities in education makes students more aware and active in saving natural resources. Although there are some challenges in putting this education into practice, it is still a powerful tool for meeting the goals of sustainable development. Therefore, it is necessary to continue improving and spreading environmental education so that future generations can live in a healthier and safer world.

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