

Environmental Care Ethics and its role in Promoting Sustainable Development

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Abstract ;

This study examines the relationship between environmental care ethics and sustainable development through literature review. The research demonstrates that environmental ethics provides a foundational framework for sustainability, recognizing the environment as essential for life through clean water, air quality, soil fertility, and biodiversity conservation.

The findings confirm that environmental care ethics represents a fundamental culture for achieving a sustainable future and addressing contemporary environmental challenges. Three main recommendations emerge: promoting sustainable environmental behavior through awareness programs, integrating environmental ethics into educational curricula, and developing environmental policies based on ethical foundations.

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1. Introduction

Environmental protection is a fundamental pillar for the continuity of life and the achievement of sustainable development. However, the pursuit of economic gains has led to serious environmental damage, most notably pollution, which poses a significant obstacle to achieving the goals of the 2030 Agenda. In this context, the adoption of environmental care ethics emerges as a moral framework that ensures a balance between economic development and the preservation of natural resources, while safeguarding the rights of future generations. This study explores the central question of the role environmental care ethics play in advancing sustainable development. It seeks to answer three key sub-questions: What are the ethical foundations of environmental care? What are the applied models that reflect these principles? And what are the proposed solutions to ensure a sustainable environmental future?

1. Significance of the Study

a. Theoretical Significance

This study contributes to enriching the scientific literature on the interactive relationship between environmental ethics and sustainable development concepts.

b. Practical Significance

The study provides a conceptual framework that can guide environmental policies and programs towards fostering a culture rooted in ethical responsibility and environmental justice, particularly in developing societies.

c. Societal Significance

The study emphasizes the pivotal role of environmental care ethics in establishing the principles of environmental citizenship and social responsibility.

2. Objectives of the Study

a. To clarify the concept of environmental care ethics.

b. To analyze the role of environmental ethics in mitigating environmental degradation.

c. To highlight the role of environmental media and environmental education in promoting a culture of environmental sustainability among individuals and institutions.

d. To provide practical recommendations based on the ethical dimension to activate the role of individuals, civil society, and policymakers in protecting the environment and achieving the goals of sustainable development.

3. Literature Review "Previous Studies"

a. El-Deeb (2025). Social Responsibility and Promoting a Culture of Environmental Sustainability in New Urban Communities.

This study explores the reality of environmental sustainability culture in new urban communities, based on a field investigation conducted in the city of New Assiut. It aimed to assess the dimensions of social responsibility namely awareness, interest, collaborative action, and participation and their role in promoting environmental awareness. The study also sought to identify the main obstacles to, and possible proposals for, enhancing this culture.

The findings revealed a high level of awareness and engagement with both environmental sustainability and social responsibility among the target population. The study recommends the promotion of community awareness, the establishment of trust-based relationships

between residents and local authorities, and the provision of modern environmental services and technologies, as essential measures to support comprehensive and effective environmental sustainability efforts.

b.Othman (2025) "Environmental Behavior as an Approach to Achieving Sustainable Development: A Sociological Study in Environmental Sociology" underscores the role of environmental behavior as a vital entry point for achieving sustainable development, using environmental sociology to explore the human-nature relationship. The study focused on secondary school students in the municipality of Zliten and revealed a notable gap between students' relatively high environmental awareness and their actual practices. This discrepancy was attributed to institutional and educational barriers.

The study concluded with several key recommendations to foster positive environmental behavior:

1. Integrating sustainable development concepts into formal school curricula.
2. Organizing environmental awareness workshops and campaigns for students.
3. Encouraging student-led initiatives through competitions and symbolic environmental awards.
4. Utilizing media platforms to raise environmental awareness among students and their families.

C.Hassan and Sayed (2025), in their study titled "The Dialectical Relationship Between Humans and the Environment: Towards a New Theoretical Model of Environmental Ethics and Its Application to the Issue of Sustainable Development", explored the philosophical and ethical dimensions of sustainability by critically examining traditional conceptions that have failed to provide effective practical solutions to address disparities between industrialized and developing countries in their approaches to environmental issues.

The study proposed a new theoretical framework that integrates what it terms "linear ethics" and "ecosystem ethics" to analyze the dialectical relationship between humans and the environment. It recommended the establishment of a fair global system for waste management that includes both developed and developing nations, along with the transfer of environmental technologies to poorer countries. The aim is to achieve environmental justice and promote the principle of universal ethics as a prerequisite for equitable and inclusive sustainable development.

2. Conceptual Framework

2.1 Environment

The term "environment" is defined in scientific literature as the comprehensive set of conditions, circumstances, and surrounding factors that influence the growth and development of living organisms, whether individual or collective. The concept also refers to the spatial surroundings in which living organisms exist, which in turn affect their life patterns and behaviors (Bachir, 2011, p. 10).

2.2 Environmental Ethics

Ethics, from a conceptual standpoint, represents the set of behaviors, actions, and attitudes that humans adopt in their interaction with their surroundings. The term "ethical laws"

applies to the rules governing individual behavior within society. Accordingly, ethics can be defined as the system of values and principles that individuals should adopt within each era, which guide the course of life and shape its fundamental features.

This ethical framework facilitates humanity's coexistence within shared environments, in communities where individuals bear responsibilities toward the natural environment upon which they depend for their livelihood. However, attempts to control the environment through arbitrary decision-making systems will inevitably expose it to danger.

Both Albert Schweitzer and Aldo Leopold are among the prominent thinkers who emphasized the necessity of placing human-nature relationships within a clear ethical framework (Leopold, 1949; Schweitzer, 1936). From this perspective, environmental ethics emerged as a distinct branch of moral philosophy.

DesJardins (2020) affirmed that environmental ethics constitutes a structured branch of philosophy concerned with examining the moral values and attitudes adopted by individuals in their relationship with the natural environment, aiming to understand the foundations of our ethical responsibility toward nature.

2.3 Sustainable Development

Most researchers in their understanding of sustainable development refer to the definition provided by the Brundtland Report, which emphasizes the necessity of utilizing natural resources in a manner that preserves future generations' rights to benefit from these resources (Guerdaoui, Bensouilah, 2025, p. 186).

2.4 Environmental Pollution

Environmental pollution is defined as the introduction of any type of pollutants into ecosystems, causing environmental degradation and leading to significant disruption in the natural ecological balance. Environmental pollutants may be synthetic materials that are foreign to the environment, or they may be natural materials existing in the environment that have exceeded their acceptable limits and thus become sources of pollution. Environmental pollution is not limited to chemical substances alone but encompasses all forms of energy pollution, including noise, thermal, and light pollution, among other various types of environmental contamination (Samaran, 2019, p. 2).

3. The Relationship Between Development and Environmental Pollution

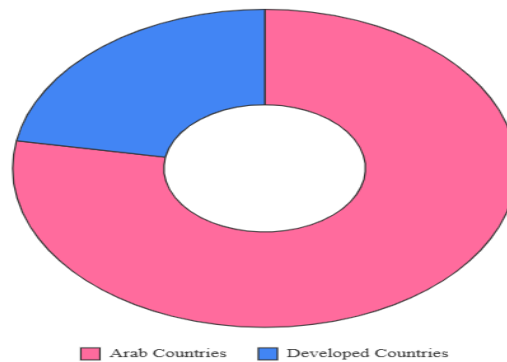
Environmental issues gained global attention following the 1992 United Nations Conference on Environment and Development in Rio de Janeiro, which emphasized the critical importance of integrating environmental protection into development processes. Arab countries, like most developing nations, were slow to incorporate environmental considerations into their development frameworks (Bayoumi, 2022, p. 237).

Development fundamentally depends on environmental resources and cannot exist without them. The disruption of these resources directly impacts developmental processes and the capacity to meet human needs. The human-environment relationship was initially characterized by balance but underwent radical transformation with the Industrial Revolution. Beginning in 1763 with James Watt's steam engine invention, this period led to haphazard environmental management and widespread ecological disasters.

Notable environmental disasters include the 1948 Donora, Pennsylvania incident, which resulted in 20 deaths and 5,900 injuries, and the devastating 1952 London smog disaster that claimed 4,000 lives. This escalating conflict between environmental protection and development imperatives prompted the United Nations to convene the landmark 1972 Stockholm Conference, which established the United Nations Environment Programme (UNEP).

The late 1970s witnessed the introduction of sustainable development concepts through various reports, while the Brundtland Commission's influential "Our Common Future" report helped address environment-development conflicts by positioning environmental issues as essential components of economic and developmental policies (Al-Kaabi, 2015, p. 6).

Fig.1. Economic Costs of Environmental Degradation as % of GD



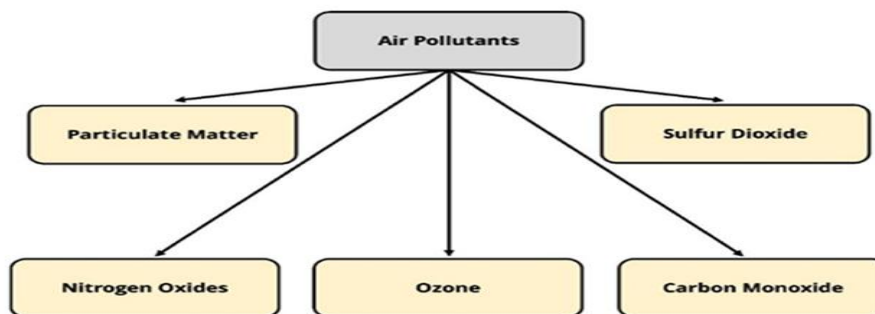
Source: Prepared by researchers based on Bayoumi (2022), p.236

3.1 Types of Environmental Pollution

3.1.1 Air Pollution

Air pollution is defined as the presence of solid or liquid particles suspended in the air, such as dust, pollen, soot, organic compounds, and metals, along with reactive gases like nitrogen oxides resulting from combustion processes in vehicles and industrial activities. This pollution adversely affects human health, causing respiratory problems, cardiovascular diseases, lung cancer, and premature death (Chadalavada et al., 2025, p. 3).

Fig. 2. Different types of air contaminants.



Source: Chadalavada et al., 2025, p. 4

3.1.2 Water Pollution

Water pollution is defined as the introduction of harmful substances into aquatic systems, adversely affecting water quality and human health. This contamination encompasses diverse

groups of pollutants including pathogenic microorganisms, heavy metals, organic and inorganic chemical compounds, suspended solids, as well as thermal and radioactive pollutants that disrupt the environmental balance of aquatic ecosystems. (Ibrahim, 2015, p. 11)

3.1.3 Soil Pollution

Soil, which serves as a foundation for agricultural prosperity and food production, represents one of the most misused environmental resources by humans. It holds paramount importance as the primary source of food security, yet insufficient awareness and understanding of this reality leads to its neglect and degradation.

3.1.4 Waste Pollution

This constitutes one of the major categories of environmental pollution, encompassing improper garbage disposal and radioactive waste contamination (Shartouh, 2025, p. 6).

3.1.5 Noise Pollution

Also known as acoustic pollution, this involves uncoordinated, continuous, and undesirable sounds at high decibel levels that typically occur in densely populated urban and commercial areas. (Shartouh, 2025, p. 6).

3.1.6 Visual Pollution

Visual pollution represents a new environmental concern requiring research to establish classification frameworks, with this study creating an automated visual pollutant classification field using AI technologies. The research focused on four categories: billboards, communication wires, network towers, and street litter, employing deep learning models based on convolutional neural networks. The results achieved 95% training accuracy and 85% validation accuracy, providing extensive applications for urban environmental management. (Ahmed et al., 2019, p. 01)

3.2 Mechanisms for Ensuring a Healthy Environment as a Human Right

The first explicit recognition of the right to a healthy environment emerged in the Stockholm and Rio Declarations as non-binding instruments. While these declarations were not intended to establish legally enforceable rights and obligations, they contributed significantly to the development of both international and national environmental legislation.

3.2.1 Convention Concerning the Protection of the World Cultural and Natural Heritage

This convention was adopted by UNESCO in 1972 and aims to establish a comprehensive list of natural and cultural sites whose exceptional universal value merits preservation for future generations. The convention ensures the protection of these sites through enhanced international cooperation and coordinated conservation efforts. As of January 1996, the World Heritage List comprised 469 sites worldwide.

3.2.2 The Vienna Convention for the Protection of the Ozone Layer (1985)

This convention aims to establish a comprehensive framework through which states can cooperate in addressing the critical problem of ozone depletion. Under this convention, state parties are required to implement appropriate measures to protect human health and the environment from adverse effects that may result from human-induced modifications to the ozone layer.

3.2.3 The Montreal Protocol on Substances that Deplete the Ozone Layer (1987)

Developed under the United Nations Environment Programme, this protocol aims to reduce and ultimately eliminate the emission of manufactured substances that deplete the ozone layer. The protocol has been amended four times since 1987, with these amendments establishing comprehensive mechanisms for technology transfer and financing, while adding specific categories of chemicals to the list of ozone-depleting substances that must be gradually phased out.

3.2.4 The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989)

Under this convention, state parties commit to minimizing the transboundary movement of hazardous wastes and ensuring that such wastes are managed and disposed of in an environmentally sound manner as close as possible to their source of generation. Additionally, parties pledge to reduce the production of hazardous materials to the minimum extent feasible.

3.2.5 The Convention on Biological Diversity (1992)

This convention aims to conserve biological diversity and promote the sustainable, equitable use and fair benefit-sharing of genetic resources. It requires state parties to develop comprehensive national strategies, plans, and programs for biodiversity conservation and to integrate biodiversity considerations into national economic planning processes. The convention also mandates that parties implement specific measures, including establishing protected area systems, developing regulatory frameworks for genetically modified organisms, and controlling or managing invasive alien species (Constitutional Assembly, 1996, p. 299).

3.2.6 International Cooperation to Accelerate Sustainable Development

International cooperation encompasses promoting sustained development through enhanced trade relationships and economic partnerships. Progress in this domain cannot be achieved while developing countries remain burdened by excessive external debt and encounter significant barriers to market access, particularly as commodity prices and terms of trade in developing countries continue to face persistent downward pressures. Therefore, the international economic system must prioritize the following objectives:

1. Promoting sustained economic development through expanded trade opportunities
2. Achieving effective synergy between trade policies and development strategies
3. Providing adequate and accessible financial resources for developing countries

3.2.7 Changing Consumption Patterns, Population Growth, and Survival Components

Population and production growth worldwide is coupled with unsustainable consumption patterns, thereby imposing an increasing burden on planet Earth. These interconnected processes undoubtedly affect various uses of land, water, air, energy, and other natural resources. Therefore, human dimensions constitute a fundamental element that must be considered in any comprehensive policies seeking to achieve sustainable development. This requires, in many cases, transforming conventional patterns of consumption, production, and industry through:

1. Encouraging increased efficiency in energy and resource utilization
2. Minimizing waste generation to the lowest possible level

3. Assisting households in making environmentally sound decisions to manage their consumption needs
4. Supporting environmentally sound pricing policies that reflect true environmental costs
5. Promoting values that encourage sustainable consumption practices

3.2.8 Sustainable Development of Human Settlements

Unsustainable consumption patterns severely burden the environment worldwide, while human settlements in the developing world require substantial raw materials, energy, and economic development to address their fundamental challenges. This has resulted in decreased investment levels in this sector, a decline linked to constraints imposed by countries, particularly developing nations, as they prioritize initiatives in accordance with their national development plans while giving full consideration to their human, social, and cultural capacities. This approach must address the following critical issues:

1. Providing adequate and affordable housing for all populations
2. Improving human settlement management approaches and governance systems
3. Developing comprehensive plans for sustainable land use planning
4. Establishing integrated infrastructure plans encompassing health facilities and educational institutions
5. Developing sustainable energy and transportation systems
6. Promoting sustainable design practices in the construction industry and utilizing local resources effectively (Al-Awadi, 2025, p. 04)

4. Environmental Care Ethics

Environmental care ethics represents an integrated system of ethical values designed to guide human behavior toward preserving the natural environment. This comprehensive system is built upon two fundamental pillars: Environmental Education, which begins in early childhood with families and mothers playing a pivotal role in instilling core environmental values, and Environmental Culture, which aims to protect human health, natural ecosystems, and essential resources. The environmental protection strategy relies on preserving natural spaces and applying the principle of proactive prevention rather than reactive remediation (Azzawi & La'ma, 2012, pp. 43, 47).

5. Environmental Awareness as a Gateway to Sustainable Development

Environmental awareness represents the decisive factor in directing human behavior toward optimal utilization of environmental resources. Research indicates that more than 50% of environmental problems can be addressed through raising awareness levels and modifying behavioral patterns. Environmental awareness contributes to correcting misconceptions and erroneous beliefs about environmental processes while enhancing individuals' commitment to sound environmental ethics and sustainable practices.

The significance of environmental awareness lies in its role as an effective instrument for developing the interactive relationship between humans and their natural environment, from which they derive the foundations of their livelihood and requirements for societal progress. This awareness also responds to global initiatives for environmental conservation through comprehensive awareness programs and international conferences aimed at disseminating

environmental culture and enabling individuals to make informed decisions that achieve equilibrium between their personal needs and environmental protection requirements.

6. Environmental Media and Its Role in Awareness

Environmental media represents a fundamental pillar in the environmental awareness system, serving as an influential tool for raising awareness levels and disseminating accurate understanding of contemporary environmental issues. According to the Aarhus Convention, environmental information is defined as any information available in various forms that includes data on environmental elements such as air, water, and soil. The World Bank defines environmental media as the transfer of environmental information from institutions aimed at enriching public knowledge and influencing public behavior toward environmental stewardship.

The Tbilisi Conference established the objectives of environmental media as enhancing awareness of the interconnections between economic, political, and ecological aspects, providing opportunities to acquire knowledge and values essential for environmental protection, and fostering new behavioral patterns toward environmental sustainability. The primary objectives of environmental media encompass disseminating environmental knowledge, introducing methodologies for maintaining natural resources and ensuring their sustainable utilization, highlighting strategies to preserve environmental assets from depletion and pollution, and providing early warning systems and monitoring of environmental imbalances while mobilizing public opinion to advocate for governmental enactment of comprehensive environmental protection legislation (Tbilisi Declaration, 1977).

7. Practical Examples of Environmental Sustainability:

7.1 Solar Energy

Solar energy serves as an optimal renewable alternative to depleting fossil fuels, producing no environmental waste during conversion to electricity. It plays a fundamental role in achieving United Nations sustainable development goals that address critical climate challenges, including environmental degradation and water scarcity, with specific targets for increased renewable energy production and improved energy efficiency by 2030. (CNN Business Arabic, 2023)

7.2 Recycling

Recycling is not a modern innovation but rather an ancient natural process that occurs within ecosystems, where waste materials from living organisms become sources of nutrition for other organisms. Throughout history, humans have practiced various forms of recycling, such as melting metals and reshaping them to create new tools and implements.

Contemporary recycling involves the systematic sorting of different materials from waste streams and utilizing them as raw materials to produce new products, thereby achieving significant environmental benefits through reducing waste accumulation and limiting the depletion of natural resources. Fundamentally, recycling represents the process of converting used materials into their basic components in preparation for remanufacturing, whether to produce items similar to the original products or entirely new products that differ completely from their original form (Abu Al-Rub et al., 2012, p. 8).

The importance of recycling becomes evident in achieving multifaceted benefits that encompass both economic dimensions through generating profits and creating employment opportunities, and environmental dimensions through energy conservation, natural resource preservation, and reduction of pollution and greenhouse gas emissions. Additionally, recycling ensures environmental sustainability and protection for future generations (Al-Khalilah, 2022, p. 786).

Table 1. The Role of Recycling in Achieving Sustainable Development

Source: Prepared by the researchers

7.3 Environmentally Friendly Future:

Environmental sustainability reflects a strategic dimension in promoting social justice by ensuring equitable access to environmental resources, reducing pollution, and addressing the impacts of climate change. This contributes to achieving a balance between environmental, social, and economic dimensions within the framework of sustainable development (Mohamed et al., 2025, p. 111).

There are numerous environmentally friendly projects that vary in their requirements and startup prerequisites to suit all needs and capabilities.

Table 2. Examples of Environmentally Friendly Energy Projects

Rank	Icon	Project Type
1		Carbon Planning
2		Environmental Legal Consulting
3		Organic Fertilization
4		Eco-Friendly Restaurants
5		Combined Energy Collection
6		Solar Panel Manufacturing
7		Bio-Fuel New Organization
8		Sustainable Crop Planning

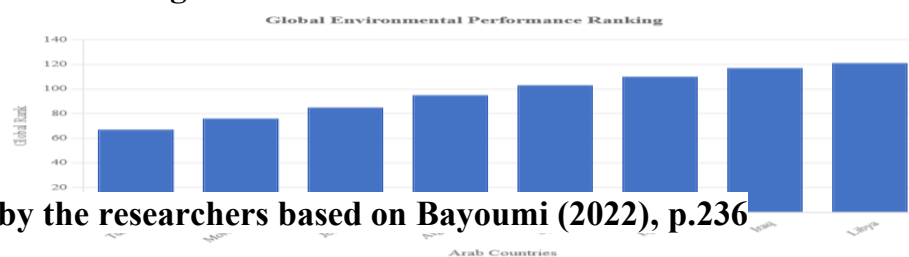
Source: Prepared by the researcher based on environmental sustainability literature

8. Environmental and Sustainable Development Issues in the Arab Region

Environmental and sustainable development issues in the Arab region have gained increasing prominence over the past two decades, particularly regarding the critical necessity of preserving natural resources for future generations. These multifaceted issues encompass water resource management, diversification of energy sources, climate change adaptation, and their cascading impacts on social, economic, and political dimensions.

However, the current state of environmental governance in the Arab region indicates the predominance of reactive approaches over proactive strategies in addressing environmental challenges, where countries typically attempt to resolve problems after they manifest rather than implementing comprehensive planning to prevent their occurrence. Available data concerning the environmental situation in Arab countries reveals concerning findings, as the Environmental Sustainability Index developed by researchers at Yale and Columbia Universities demonstrated that Arab countries scored approximately 10 points below the global average (Bayoumi, 2022, pp. 236-237).

Fig.3. Arab Countries Ranking in Environmental Performance Index 2016



Source: Prepared by the researchers based on Bayoumi (2022), p.236

9. CONCLUSION

This study aims to illuminate the vital role of environmental care ethics in promoting sustainable development and establishing a balanced environmental framework. The research concludes that the environment constitutes the fundamental foundation upon which the continuity of life depends, providing essential elements such as clean water, pure air, and fertile soil, while preserving biodiversity that contributes to ecosystem stability and resilience. The findings confirm that environmental care ethics represents a fundamental and critically important paradigm for achieving a more sustainable future, fostering greater awareness among individuals regarding the significance of preserving natural resources in consideration of the rights of both present and future generations. The implementation of environmental care ethics as a comprehensive approach ensures the achievement of intergenerational environmental justice and the preservation of natural resources, thereby contributing to the construction of a sustainable future that achieves equilibrium between economic development imperatives and environmental conservation requirements.

Consequently, the preservation of our environment emerges as an urgent necessity rather than merely an optional consideration. The integration of environmental care ethics into policy frameworks, educational systems, and societal practices represents a critical pathway toward sustainable development that honors both human needs and ecological integrity.

Recommendations:

Based on the comprehensive analysis presented in this research, the study findings concluded that sustainable development requires a multifaceted approach encompassing the following key dimensions:

1. Promoting Sustainable Environmental Behavior:
2. Through effective awareness programs and capacity-building to support responsible environmental decision-making at both individual and community levels.
3. Strengthening Environmental Ethics:
4. By integrating ethical values into educational systems and promoting shared responsibility among individuals and institutions for environmental protection.
5. Developing Integrated Environmental Policies:
Through strict legislation grounded in ethical principles, encouraging clean technologies, and enhancing international environmental cooperation.
6. Investing in Green Technology and Renewable Energy:By supporting scientific research, fostering innovation, and incentivizing private sector involvement in sustainable environmental solutions.

7. Enhancing Community Participation: By establishing local environmental committees, ensuring environmental justice, and reinforcing ethical responsibility toward future generations.
8. Fostering Intergenerational Environmental Responsibility: Through ethical frameworks that prioritize long-term ecological impact over short-term economic gains, safeguarding the rights of future generations.
9. Establishing Environmental Care Ethics Centers: As dedicated institutions for research and training, promoting culturally and contextually relevant ethical models for environmental protection.
10. Integrating Sustainable Development Concepts into Education: By embedding sustainability principles in curricula to foster early and lasting environmental awareness.
11. Activating Local Environmental Media: To spread sustainability culture and encourage responsible environmental behavior within local communities.
12. Transferring Environmental Technologies to Developing Countries: To empower them in addressing environmental challenges fairly and equitably, bridging the technological gap globally.

These recommendations provide a strategic framework for policymakers, educators, and environmental stakeholders committed to advancing sustainability.

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