CLIMATE CHANGE AND ENVIRONMENTAL SUSTAINABILITY AND IMPACT OF IT IN ENVIRONMENT

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Abstract

Innovations, policies and strategies for a green economy transition form part of sustainable development. Addressing global climate change, pollution and resource depletion requires an integrated approach which combines technical solutions with policy and governance measures. In this paper, we make the case for renewable energy, digital technology and environmental sustainability as foundational for economic and environmental sustainability, and examine the laws and policies that shape environmental activity. A case study on the student body of the Andijan State Law Technical School explored how sustainability practices exist at the institutional level and the level of individual awareness. The study found that students are gradually becoming aware of the importance of sustainability, though institutions have not yet implemented effective environmental education and policies. Strengthening environmental education, enforcing environmental policies, and fostering innovation are deemed necessary for long-term sustainability and successful transition to a green economy.

Keywords: Green economy, sustainability, innovation, environmental policy, renewable energy, governance

Introduction

Green economy is important to modern society because environmental issues underline the limitations of growth-oriented economic systems, which have long dominated economic thinking. The world is experiencing environmental pressures today such as climate change, pollution and resource depletion which have become so severe that the problems have reached a magnitude prompting the notion of sustainable development, where economic growth would need to be matched with environmental protection.

A green economy is an economic model that seeks to reduce environmental risks and ecological scarcities while promoting sustainable development without degrading the environment. It focuses on resource efficiency, emission reductions, and renewable energy. Governments, institutions and individuals all play a part in this process, and certainly much has been developed in the way of international agreements as well. Though Uzbekistan has environmental protection laws and sustainability policies, awareness of environmental problems or implementation of plans at the grassroots level is still a rarity. Institutions of higher learning, especially in the legal field, have a responsibility to produce a generation of environmentally conscious citizens with not just legal, but sustainable knowledge. Research seeks to investigate the role of innovation, policy and strategy in the establishment of a green economy, the impact and the effect on the students of the Andijan State Law Technical School, their awareness, and behavior, and to present proposals and recommendations for improvement to them.

Review of Literature

Many researchers on green economy have studied the relationship between green economy and sustainable development. UNEP (2021) defined the goal of green economy as the improvement of human well-being and the reduction Environmental risks. In the same vein, the World Bank (2020: 4) argued that economic growth must integrate environmental concerns. Regarding the economic cost of climate change and the benefits of early action, see Stern (2007). Environmental taxes and subsidies are seen to be very helpful when it comes to the production and use of environmentally-friendly technologies (OECD 2019). Porter and van der Linde (1995) argue that stringent environmental regulations stimulate

innovation and improve competitiveness. More recently, the role of education in a sustainable society has also been identified by scholars: Tilbury (2011), for example, argues that environmental education is a key tool in helping people develop responsible behavior. ADB (2020) states that in developing countries, lack of awareness and financial constraints are major barriers to green transformation in energy. Uzbekistan has developed renewable energy research and environmental legislation, but there are issues with implementation and outreach according to national studies. National studies argue that a combination of effective policy measures, innovation, and education is necessary for the country to transition to a green economy.

Objectives

This study seeks to investigate the role of innovations, policies and strategies in promoting a green economy among students.

Specific objectives include:

1. To assess students' knowledge of and value for environmental sustainability.
2. To explore the role of educational institutions in promoting green practices.
3. Identify key challenges to sustainable practice implementation.
4. To make recommendations for promoting environmental awareness and policy implementation in Ghana.

Objectives include both the cognitive and behavioral domains, focusing on how students approach sustainability issues through a variety of lenses.

Methodology

This scientific research, which is a qualitative and quantitative research conducted at the Andijan State Law Technical School, is based on the survey data of first-year students of the Andijan State Law Technical School (50 people). The questionnaire contained questions about environmental awareness, behavior and attitudes towards sustainability, which were complemented by interviews with randomly selected students on the same topic. Descriptive statistics were used to analyze the data. The research explores the local context of Andijan, offering insights into students' perceptions of the green economy and sustainability in the region.

Data Analysis

Table 1: Student Awareness and Practices on Environmental Sustainability

Question	Yes (%)	No (%)
Know about green economy	60	40
Practice recycling	45	55
Support renewable energy	70	30
Environmental education received	50	50

Interpretation

The data presented in Table 1 provides a foundational understanding of students' awareness and engagement with environmental sustainability concepts at Andijan State Law Technical School. A majority of respondents (60%) reported that they are aware of the concept of a green economy, indicating moderate exposure to sustainability-related ideas. However, a significant 40% still lack awareness, highlighting a gap in environmental knowledge dissemination.

Interestingly, while awareness exists, practical implementation appears weaker. Only 45% of students actively practice recycling, whereas 55% do not engage in such behavior. This suggests a disconnect between knowledge and action, which is a common issue in environmental studies. Behavioral change often requires not only awareness but also infrastructure, motivation, and institutional support. Support for renewable energy is relatively high at 70%, indicating that students are generally positive toward sustainable energy solutions such as solar and wind power. This reflects global trends where younger populations tend to favor clean energy transitions. However, this support does not necessarily translate into personal action or advocacy.

Another important observation is that only 50% of students reported receiving environmental education. This equal split clearly indicates that educational institutions are not consistently integrating sustainability into their curriculum. Without structured education, students may struggle to develop practical environmental habits.

Overall, the findings suggest that while there is a growing awareness of environmental sustainability, there remains a critical need for stronger educational programs, practical engagement opportunities, and institutional policies to bridge the gap between knowledge and action.

Table 2: Perception of Climate Change Impact

Impact Area	High Impact (%)	Moderate (%)	Low (%)
Air pollution	65	25	10
Water scarcity	60	30	10
Biodiversity loss	55	35	10
Temperature increase	70	20	10

Interpretation

Table 2 highlights students' perceptions of the impacts of climate change on different environmental aspects. A large proportion of respondents identified temperature increase (70%) and air pollution (65%) as having a high impact, reflecting awareness of visible and immediate environmental issues. Water scarcity (60%) is also recognized as a major concern, which is particularly relevant in regions experiencing climate variability. Biodiversity loss, while still significant at 55%, received slightly lower recognition compared to other factors. This may indicate that students are less aware of ecological consequences that are less directly observable. Overall, the data suggests that students are more aware of tangible environmental problems rather than complex ecological dynamics.

Table 3: Adoption of Sustainable Practices

Practice	Always (%)	Sometimes (%)	Never (%)
Energy saving (turning off lights, etc.)	50	35	15
Using reusable materials	40	30	30
Reducing plastic use	35	40	25
Participating in environmental campaigns	25	30	45

Interpretation

Table 3 presents the level of adoption of sustainable practices among students. Energy-saving behavior is the most common, with 50% of students always practicing it, suggesting that simple and cost-saving actions are easier to adopt. However, more proactive behaviors such as participating in environmental campaigns show low engagement, with 45% of students never participating.

The use of reusable materials and reduction of plastic use show moderate engagement, but a significant portion of students still do not adopt these practices consistently. This reflects a broader issue where convenience and accessibility influence environmental behavior. Overall, the data indicates that while basic sustainability practices are somewhat integrated into daily life, more active and community-based environmental engagement remains limited.

Table 4: Institutional Support for Sustainability

Institutional Factor	Strong (%)	Moderate (%)	Weak (%)
Environmental policies	30	40	30
Availability of recycling facilities	25	35	40
Sustainability programs/events	20	30	50
Integration in curriculum	35	30	35

Interpretation

Table 4 evaluates the role of institutional support in promoting environmental sustainability. The data reveals that institutional efforts are generally moderate to weak. Only 30% of students perceive environmental policies as strong, while a significant portion rates them as moderate or weak.

The availability of recycling facilities is particularly concerning, with 40% of respondents indicating weak availability. This directly affects students' ability to practice recycling, as seen in Table 1. Sustainability programs and events are also lacking, with 50% rating them as weak, suggesting limited institutional engagement. Curriculum integration shows a slightly better distribution, but still lacks consistency. Overall, the findings highlight that institutions play a critical role in shaping environmental behavior, and current efforts need significant improvement to support sustainability effectively.

Overall Integrated Analysis

The combined analysis of all tables demonstrates that climate change and environmental sustainability are increasingly recognized by students, yet practical implementation remains insufficient. While awareness of renewable energy and climate impacts is relatively high, actual engagement in sustainable practices is inconsistent. This gap is strongly influenced by limited institutional support, lack of environmental education, and insufficient infrastructure.

The findings align with global sustainability challenges, where awareness alone does not guarantee behavioral change. Effective environmental sustainability requires a multi-dimensional approach that includes education, policy enforcement, technological innovation, and community participation.

In the context of Andijan State Law Technical School, strengthening environmental education programs, improving campus sustainability infrastructure, and encouraging student participation in environmental initiatives are essential steps. Addressing these issues will not only enhance individual awareness but also contribute to broader environmental protection and climate change mitigation efforts.

Conclusion

Ultimately, the transformation to a green economy is an important step for sustainable development and environmental protection. The study stresses the role of innovation, policy, and education in achieving sustainability-related goals. These conclusions suggest that while students are familiar with the basic environmental concepts, more formal education and implementation is necessary. Schools play an important role in fostering environmental behavior. Education for sustainability in educational institutions provides the participant with the knowledge to understand and take part in solving environmental problems. The government should also have policies and institutions in place to promote green practices. Our results show that awareness alone is insufficient and that other behaviors such as recycling, energy saving and support for renewable energy must be promoted. Partnerships across education, government, and society are essential. Ultimately, with the proper commitment of society, investment in education, innovation and the effective implementation of policies geared towards a green economy, we can create a financially and environmentally sustainable future for everyone.

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