

Review Article

The Impacts of Ethiopia's Green Legacy on Soil Conservation and on Climate Change: A Review

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Abstract

The Green Legacy initiative in Ethiopia aims to promote a healthy environment by restoring ecosystems, mitigating climate change, and fostering environmental awareness. It involves tree planting, carbon sequestration, biodiversity conservation, soil conservation, community engagement, and climate education. A mixed research method found positive effects on the environment, and researchers recommend policymakers and the government consider the six parameters of the initiative for evidence-based decision-making for sustainable environmental management in Ethiopia. Ethiopia is home to some of the world's most biodiversity ecosystems, but its environment is also under threat from climate change, deforestation, and other human activities. To protect its unique biodiversity and ensure a healthy environment for its people, Ethiopia must take bold steps to create a green legacy. This includes reducing greenhouse gas emissions, investing in renewable energy sources like solar, wind, and hydropower, implementing energy efficiency initiatives, investing in conservation and sustainable land management, and investing in environmental education and awareness. By investing in renewable energy, conservation, and environmental education, Ethiopia can reduce emissions, protect its biodiversity, and create a healthier environment for its people. This green legacy will ensure that Ethiopia's unique ecosystems are preserved and that citizens can enjoy a healthy environment for generations to come.

Keywords

Green Legacy, Climate Change, Soil Conservation

1. Introduction

In recent years, climate change has gained significant international attention and is presently regarded as one of the most urgent environmental problems that mankind is currently facing. As a result, the almost 200-nation Paris Agreement was formed with the goal of lowering greenhouse gas emissions, keeping the increase in global temperature to well below 2°C, and providing climate funding to developing nations [12]. This agreement serves as a powerful reminder of

the necessity of acting to ensure a sustainable future for all people and has been widely regarded as a significant step forward in addressing the issue of climate change [6, 12, 21].

Various scholars have examined the topic of green legacy in different parts of the world and have arrived at varying conclusions. For instance, research by showed that green legacy policies in Asia had a beneficial effect on climate change [8]. In a similar vein, empirical data from studies by [3, 10, 16, 18]

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and others revealed that a green legacy had a good effect on fostering a healthy environment in Africa. According to a [9] study by Graça Carvalho, Europe's energy and climate change policies have a favorable effect on promoting a green environment.

2. Results and Discussions

Few scholars have examined the matter in relation to Ethiopia. For example, research by [4] demonstrated that a green legacy contributes significantly to reducing climate change and enhancing air quality. Furthermore, [22] research from indicated that better animal species variety, abundance, and fresh air are made possible by planting and maintaining trees. Thus, Ethiopia's green legacy contributes positively to a healthy ecosystem. The current study addressed the six parameters of a green legacy, including community engagement, biodiversity conservation, soil conservation, carbon sequestration through tree planting, and climate education about healthy environments in Ethiopia. Previous studies reviewed above largely ignored these parameters.

When taken as a whole, these factors offer a significant stimulus for halting climate change. Tracking these metrics over time can assist in determining areas for improvement, tracking progress, and informing future plans for Ethiopia's mitigation of climate change. Therefore, the goal of this paper was to review how Ethiopia's environment are affected by six green legacy parameters: planting trees, raising trees for carbon sequestration, conserving biodiversity, conserving soil, community involvement, and climate education. Simultaneously, the study evaluated the obstacles that contradict the green legacy incentive.

Through its extensive tree-planting initiatives, Ethiopia's Green Legacy project significantly contributes to the promotion of a healthy environment. The initiative's main goals are to counteract climate change, alleviate environmental degradation, and restore ecosystem health by concentrating on large-scale reforestation [21]. The Green Legacy program makes use of the many environmental advantages that trees are known to have in order to establish a resilient and sustainable ecosystem in Ethiopia. The program plays a variety of roles in fostering a healthy environment [2]. Furthermore, trees protect watersheds, reduce soil erosion, and provide habitat for a variety of aquatic species, all of which help to achieve the objective of maintaining life below the surface of the earth.

Their significance in the objective of ending poverty and fostering sustainable economic development is also indisputable, as they offer nearby people a regenerative supply of wood, fuel wood, and non-timber forest products. All things considered, trees contribute significantly to a number of SDGs, highlighting the necessity of protecting and growing their population for a sustainable future. The population's long-term health and well-being may benefit from this growing environmental knowledge. Human health is imme-

diately impacted by a cleaner and healthier environment because it produces a more suitable climate, lessens air pollution, and makes clean water more accessible. The Green Legacy program helps ensure a sustainable and prosperous future for future generations by stimulating a healthy environment.

Ethiopia is becoming more concerned about climate change as it is a nation that is especially susceptible to its consequences. Ethiopia is thought to have already seen a 1.3°C rise in temperature since 1960. It is anticipated that by 2050, this warming trend would have increased by an additional 1.5°C [12]. Ethiopia is anticipated to face several challenges as a result of climate change, such as decreased agricultural production, restricted access to water, and heightened health risks from extreme weather events [9]. Ethiopia's economy heavily depends on agriculture, and it is anticipated that climate change would have a big influence on agricultural output.

Specifically, lower agricultural yields are predicted as a result of rising temperatures and less rainfall, especially for major cash crops like tea and coffee [19]. This would cause agricultural output to drop significantly, which might result in food insecurity and poverty. Ethiopia must be able to adapt to the anticipated changes in rainfall and temperature, making climate change adaptation a critical concern. Several approaches are being put out to deal with this problem, such as enhanced soil fertility management, expanded usage of drought-resistant crops, and better water management systems. To reduce the effects of climate change in Ethiopia, several tactics are probably crucial.

Ethiopia is a nation committed to providing its people with a healthy environment. Ethiopia, a country of more than 120 million people, is working hard to keep its environment safe and clean for its people. Ethiopia is home to a wide range of environments, from tropical forests to grasslands. The African lion, Ethiopian wolf, and African elephant are just a few of the world's most diversified animal groups that call Ethiopia home. The Ethiopian government has been pursuing sustainable growth and environmental protection. Ethiopia created the National Environmental Policy in 2010 in an effort to solve the nation's environmental problems.

The strategy included several steps to enhance the state of the environment, such as the use of renewable energy sources, the encouragement of agroforestry, and the decrease of air pollution. Some of the most endangered species on Earth may be found in the protected areas that the strategy developed [11, 13-15]. In addition, the government has put in place a variety of initiatives, such the National Adaptation Plan of Action (NAPA), to lessen the consequences of climate change. The goal of this strategy is to lessen how the environment, economy, and society of Ethiopia are affected by climate change.

Additionally, it aims to strengthen the nation's resistance to climate change by advancing environmentally friendly farming methods, preserving water supplies, and enhancing the infrastructure's energy efficiency. Ethiopia has also made

efforts to lower the nation's air pollution levels. To lessen air pollution, the government has put in place a variety of programs, such as the National Air Quality Monitoring Program. This initiative keeps an eye on the nation's air quality and informs the public on local air quality. To lower the amount of particulate matter in the air, the government has also launched a variety of measures, such as the Clean Air Initiative [17, 14]. By encouraging the use of clean cook stoves and cleaner fuels, this project seeks to reduce the number of dust particles in the air. Ethiopia is moving very quickly to provide its people with a healthy environment. The government has put in place a variety of programs to safeguard the environment, lessen air pollution, and encourage sustainable growth. Ethiopia can provide its people with a secure and healthy environment if it keeps up its efforts [4]. The soil conservation has positive effect on healthy environment in Ethiopia [1].

The Green Legacy has been successful in increasing the amount of forest cover. [20], study evaluated the effect of the Green Legacy on Ethiopia's forest cover. After examining satellite data, the researchers discovered that there has been a noticeable rise in the amount of forest cover since the program's start. According to the study's findings, the Green Legacy has been successful in curbing deforestation and encouraging reforestation, which has improved carbon sequestration and reduced climate change.

Benefits of the Green Legacy for the local climate [22], study looked into how Ethiopia's local climate was affected by reforestation activities made possible by the Green Legacy. The researchers analyzed changes in temperature and precipitation patterns using ground-based measurements and climate modeling approaches. The results showed that the Green Legacy has improved the local climate, resulting in cooler temperatures and more rainfall. These changes have a big impact on the region's water availability and agricultural output.

The study came to the conclusion that planting and growing trees helps to slow down temperature increases based on the findings of a quantitative investigation. Based on qualitative study, it can be said that Ethiopia's green legacy is changing due to factors such soil erosion, deforestation, high population growth, rising temperatures, and forest degradation. It also faces challenges related to loss of biodiversity and scarce water in rural regions. The paper's study leads to the conclusion that growing and planting trees, or leaving a "green legacy," contributes significantly and favorably to the green economy, which is good news for biodiversity.

3. Conclusions

Serious problems with soil erosion, land degradation, rainfall, and temperature variability are faced by Ethiopia. Although the causes of deforestation and forest degradation have been identified, notable advancements have been achieved. Green Legacy Initiative (GLI) seeks to maintain

Ethiopia's green growth while mitigating the effects of climate change and offering chances to lessen the effects of climate change, increase ecosystem services, produce income, promote livelihoods, and fulfill national and international restoration and reforestation commitments. Ethiopia, home to some of the world's most biodiversity ecosystems, is facing a major environmental crisis due to climate change, deforestation, and other human activities. To protect its unique biodiversity and ensure a healthy environment for its people, Ethiopia must take bold steps to create a green legacy. This includes reducing greenhouse gas emissions, investing in renewable energy sources like solar, wind, and hydropower, implementing energy efficiency initiatives, and investing in conservation and sustainable land management. Reforestation and conservation efforts are crucial for protecting Ethiopia's unique biodiversity, restoring forests, protecting wildlife, and reducing land degradation risks. Environmental education and awareness are also essential for Ethiopia's future. Media campaigns, public events, and school programs can help raise citizens' awareness of environmental threats and the benefits of sustainable practices. Creating a green legacy in Ethiopia is essential for the country's future, as it can reduce emissions, protect biodiversity, and create a healthier environment for its people. This will ensure that Ethiopia's unique ecosystems are preserved and that the country's citizens can enjoy a healthy environment for generations to come.

Abbreviations

GL	Green Legacy
NAPA	National Adaptation Plan of Action

Conflicts of Interest

The authors declare no conflicts of interest.

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