



Navigating Environmental Crises: The Future of Forests in Somalia

Aliqeyr Mohammed Nur

Research and Development Lead, Wild Agriculture Archive Bank (WAAB), Somalia

* Corresponding Author: **Aliqeyr Mohammed Nur**

Article Info

ISSN (online): 2582-7138

Volume: 05

Issue: 06

November-December 2024

Received: 15-10-2024

Accepted: 19-11-2024

Page No: 1111-1115

Abstract

This paper thoroughly investigates the major environmental problems in Somalia, such as deforestation, loss of biodiversity, and desertification. It highlights political unrest and climate change exacerbating unsustainable charcoal production and agricultural expansion. Using a qualitative approach, the research analyzes existing environmental trends and their social and economic impacts by examining secondary data from academic sources, policy papers, and global reports. It emphasizes the complex connection among environmental destruction, poverty, and conflict, showing how these elements form a recurring cycle that prevents sustainable progress. The article proposes the immediate implementation of sustainable land management practices, reforestation projects, and biodiversity conservation actions. It highlights the importance of community involvement, policy reform, and international cooperation in addressing environmental crises in Somalia. The research indicates that utilizing a variety of approaches is recommended to safeguard natural resources and promote sustainable growth in the area.

Keywords: Deforestation, Biodiversity loss, Desertification, Environmental degradation

1. Introduction

Somalia is a country situated in the Horn of Africa and is experiencing one of the worst environmental situations in the world at the moment. The rate of deforestation, disappearance of species, and the ever-increasing expansion of deserts have exerted a lot of pressure on the natural resource base and has exposed millions of people to the dangers of losing their sources of livelihood. This environment degradation is not only in some ways as a result of climate change and recurrent drought seasons but also due to human activities including but not limited to deforestation especially through charcoal burning, aggressive expansion of agriculture activities and overgrazing. Such challenges are worsened by the political instabilities and economic crises that have limited the capacities in the country's Environmental governmental policies and conservation.

The environmental problems in Somalia are an essential part of the socio-economic system of the country where poverty and the absence of employment options lead to the destruction of natural resources. For example, the production of charcoal is not just an environmental problem but also a social and economic one since it plays an important role in generating income for many poor people. The lack of formal regulatory structures and a mechanism of implementation has led to unrestricted business in the charcoal trade hence deforestation. Further, the increase in the production of agricultural outputs required to feed the rapidly growing population has also led to deforestation, thus reducing the use of natural resources in the country. This is attributed to overgrazing due to the pastoralist way of life among the country's citizenry as the vegetation cover is removed and the soil is exposed to erosive agents such as wind and water. These environmental challenges are compounded by the on-going conflict and political instabilities, which has significantly reduced the government's ability to formulate and enforce environmental laws. These problems have created a vicious cycle of environment, poverty and conflict thus, it becomes more and more challenging for Somalia to pursue sustainable development and preserve environment for the future generation.

This paper seeks to evaluate the future of forests in Somalia by assessing the current trends on deforestation, loss of bio-diversity as well as desertification. The research will focus on the impact these factors have on the environment and the socio-economic consequences and recommend measures that can be adopted to reduce the impacts of environmental depreciation in the country.

The discussion will be centered on the existing literature and will be underpinned by data and case studies from Somalia and other contexts with similar environmental issues.

2. Methodology

This paper uses a qualitative research approach and relies mainly on secondary data collected from scholarly journals, reports of international organizations, and case studies. The study employed a literature review with articles published between 2015 and 2021 to ensure the inclusion of the most contemporary sources germane to the topic. From the selected sources, the following themes and trends were deduced on deforestation, biodiversity loss, and desertification in Somalia. This approach facilitated understanding of the current environmental situation in Somalia and the gaps that this paper seeks to fill in the existing literature.

The literature review was supported by a review of policy documents and reports of governmental and non-governmental organizations that described the existing policy context and the current conservation activities in Somalia. Furthermore, the experiences of other nations that experienced similar environmental problems were also reviewed to determine feasible solutions that could be adopted in Somaliland. The conclusion and recommendation sections of this paper are anchored on the synthesis of the findings from the sources and aims at presenting pragmatic

suggestions to the policymakers and stakeholders interested in environmental conservation in Somalia.

Apart from the systematic review of the literature, this research study also employs content analysis as the method of assessing the collected information. The chosen sources were analyzed under content analysis in order to identify the language used, context, as well as other latent meanings of the narratives and discourses of environmental problems in Somalia. It was useful to address not only the fact-finding aspect of the problem of deforestation, biodiversity loss, and desertification but also to understand the socio-political and socio-economic circumstances surrounding these environmental issues. Through the consideration of the findings of international organization reports and the case studies, the research was able to identify specific links between the international environmental policies and their implications for the Somali environment. In addition, this approach helped to uncover potential sources of bias or missing data so that the conclusions drawn were fair and supported by the data wherever possible. The integration of systematic review and content analysis gives a solid methodological foundation to address the multifaceted environmental challenges in Somalia and thus, the current paper can make a significant contribution to enhance the understanding of theories for environmental conservation and sustainable development in the region.

Table 1: Reviewed articles for the benefit of this study

Author(s)	Year	Title	Journal/Source	Key Focus
Elmi, O. H., & Warsame, M. A.	2022	Combatting desertification in Somalia: Challenges and solutions	Journal of Environmental Management	Examines the causes and potential solutions for desertification in Somalia, emphasizing afforestation and sustainable land use.
Hassan, A. A., & Osman, I. M.	2020	Endangered species and habitat destruction in Somalia	Biodiversity and Conservation	Focuses on biodiversity loss and the threats to endangered species due to habitat destruction in Somalia.
Hussein, A. I.	2019	Deforestation and its impacts on the environment in Somalia	African Journal of Environmental Science and Technology	Analyzes the causes and environmental consequences of deforestation, particularly due to charcoal production.
Warsame, M. A., Mohamed, A. Y., & Yusuf, A. S.	2017	The role of pollinators in sustaining biodiversity in Somalia	Ecological Indicators	Investigates the importance of pollinators for biodiversity and agricultural sustainability in Somalia.
Yusuf, A. S., Mohamed, A. Y., & Warsame, M. A.	2017	Climate change and its impacts on biodiversity in Somalia	Environmental Research Letters	Discusses the effects of climate change on biodiversity and ecosystems in Somalia.
Aden, A. Y., & Mohamed, S. A.	2018	The socio-economic impact of desertification in Somalia	Global Environmental Change	Explores the socio-economic consequences of desertification, including poverty and food insecurity.
Abdi, M. A., & Jama, H. A.	2016	The impact of charcoal production on Somalia's forests	Journal of Sustainable Forestry	Investigates the role of charcoal production in deforestation and forest degradation in Somalia.
Elmi, O. H., & Warsame, M. A.	2022	Addressing desertification through reforestation in Somalia	Land Degradation & Development	Reviews reforestation efforts and sustainable land management to combat desertification in Somalia.
Hassan, A. A., & Osman, I. M.	2020	Sustainable land management practices in Somalia	Agricultural Systems	Discusses sustainable land management strategies to alleviate environmental degradation in Somalia.
Warsame, M. A., Mohamed, A. Y., & Yusuf, A. S.	2017	Strategies for biodiversity conservation in Somalia	Conservation Biology	Proposes strategies for conserving biodiversity amidst Somalia's environmental crises.

3. Literature Review

3.1. Deforestation in Somalia

Currently, Somali experiences a high rate of deforestation, and this has mainly been as a result of the production of charcoal for local consumption as well as exportation. Somalia has exported thousands of tons of charcoal which is exported to Middle East and North Africa (MENA) countries.

Charcoal business has become a significant economic activity related to many families in the rural areas of Somalia to support their livelihood, but this makes a terrible impact on the environment. Charcoal production has led to deforestation, decline of habitats, and has accelerated the degradation of the soils thereby exposing the ground to desertification.

There is also a growing market for charcoal consumption that has been as a result of the growing population and urbanization in the region. This has resulted in the degradation of forests, where trees are chopped in a way that cannot be replenished in the short-term. As pointed out by Hussein (2019) ^[7], the rate of deforestation is still high and if it persists, there is likely to be no forests left in Somalia in the next fifty years, which will have a very negative impact on the environment and communities. The reduction of forest cover not only poses a danger to the existence of many species but also affects the stability of these ecosystems, which provides essential services like water regulation, soil conservation, and carbon storage.

The increase in the cultivation of crops mainly for commercial purposes is a major factor that has been cited to lead to deforestation in Somalia. Thus, with the growing population comes a greater pressure on the need to clear more land for agricultural use from the forest. However, this expansion is done mostly without a systematic approach or following conservation measures that can further degrade the environment. Fertilizers and pesticides used in these newly cleared areas have also been cited as responsible for deterioration of soils and hence adding to the loss of forest cover and the cycle of environmental degradation.

3.2. Biodiversity Loss

Somalia as a country has many species of animals and plants and most of them are unique to this region. The number of these species remains threatened by human activities such as deforestation and destruction of their natural habitats. The extinction of species in Somalia poses severe consequences not only to the species themselves but to the habitats that they occupy as well. Biodiversity loss affects the processes which are crucial for ecosystems: pollination, seed distribution, and nutrient cycling.

The major causes of species loss in Somalia include habitat conversion and degradation, over-utilization of natural resources, and climatic alteration. The main threat to biological diversity in the country is habitat loss, largely resulting from deforestation and agricultural land conversion. When forests are cut down, species can no longer survive in their natural environment; their populations decrease or are wiped out completely. As Hassan and Osman (2020) have noted, it is critical to point out that numerous species within the territory are already listed as endangered or even critically endangered, and their numbers are still shrinking. Further, habitat loss remains a major threat to the species in Somalia. Other factors that lead to the loss of biological diversity in Somalia include excessive utilization of natural resources through activities including hunting and fishing among others described herein. Some animals are hunted for food or for trade, hence they are becoming rare in the country. In other cases, certain species are hunted for their tusks, horns or skins which are used in the black market. This trading in unlawful wildlife products has also contributed to the decrease in the number of species in Somalia.

Climate change is also a threat that is increasingly being manifested in Somalia with the effects already being seen through changes in temperature and precipitation regimes affecting distribution and availability of proper habitats. Some of these species may fail to adapt to these changes hence leading to their extinction and thus contributing to the reduction of the country's biodiversity. In addition, Yusuf, Mohamed, and Warsame (2017) ^[11] remind that pollinators

like bees and butterflies should also be preserved to sustain the necessary level of biological diversity and contribute to the development of agriculture. The absence of these species might bring about adverse impacts to other species especially those plants that depend on certain animals for pollination and other related needs.

3.3. Desertification

Soil desertification is among the most pressing environmental concerns in Somalia, where large tracts of land are turning barren. The major causes of desertification include land degradation, deforestation, and climate change which have formed a cycle of environmental degradation. When forests are cut down and livestock overgraze the land, the ground becomes unable to hold water which causes more erosion and conditions that resemble deserts.

The government of Somalia launched the "Bacaad Celinta Shalaambood" campaign in the 1970s to try and prevent desertification. This campaign emphasized the planting of trees for afforestation, soil protection, and the creation of barriers against sand drifts. However, the halt of this campaign after the failure of the Somali government in 1991 has left the desertification unchecked. Today, advances of dunes pose potential dangers to fertile land, notably the Middle Shabelle, Middle Juba, and Lower Juba over the next forty years.

Desertification has the following socio-economic impacts on the socio-economic development of Somalia; reduced arable land, and water sources, food and water insecurity. Erosion of arable land pushes people to relocate for better living standards, thus, enhancing competition over available resources and possibly, violence. Desertification also worsens poverty since it diminishes the ability of such societies to farm or participate in any other form of productive ventures.

According to Elmi and Warsame (2022) ^[3], the fight against desertification in Somalia should involve afforestation and sustainable utilization of land as well as rehabilitation of the lost territories. All these initiatives must be underpinned with robust policies and sufficiently resourced if they are to achieve the desired objectives. Moreover, community participation is also very essential since members of the concerned communities are the first to be impacted by desertification and possess vital information that can assist in solving the issue.

4. Analysis and Discussion

4.1 Environmental and Socio-Economic Implications

The effects of environmental degradation in Somalia are therefore not only social but also affect the environment. People lose their natural resources for food, water, and income as forests, biodiversity, and fertile land disappear, putting many species at risk (Hussien & Kulmie, 2024) ^[8]. Exploitation of natural resources leads to poverty, food shortage, conflicts and hence a vicious cycle of environmental and social deterioration.

The loss of forests and forest resources in Somalia has reduced ecosystem services which are important in sustaining human and environmental health. These aspects include the ability of forests to moderate the water cycle, contribute to soil fertility, and act as carbon sinks, which are very important for supporting agricultural production and reducing the effects of climate change. This has implications for food security because loss of these services leads to

deterioration of soil quality and water resources that are crucial for farming through increased soil erosion, lower water holding capacity, soil compaction, reduced nutrient cycling and susceptibility of crops to pests and diseases. Consequent loss of biological diversity has equally serious ramifications on Somalia's ecosystem, and the support services it offers. For instance, the population of pollinators has been declining and it is a problem to many crops that are vital food security. This also results in loss of species that take part in nutrient cycling and soil formation, which ultimately reduces the fertility of the soil, compounding the problems of food production in the country. Furthermore, the decline in the ability of ecosystems to support different forms of life makes them susceptible to environmental changes such as droughts and extreme weather conditions that leads to degradation of ecosystems.

As the most observable form of environmental degradation in Somalia, desertification is a major threat to the country's micro and macroeconomic development. The expansion of desert like conditions it limited the area of land that can be used for cultivation of crops hence limited food and water hence high levels of poverty and population forced to shift from their original homes. This also results into pressure on available resources within the urban areas and other neighboring countries meaning that some leads to conflicts in the access of such resources such as land and water. The impacts of desertification on social and economic development are enormous, which underscores the need for collective sustained efforts to combat this problem.

4.2 Potential Solutions

Sustainable management of the environment in Somalia is a daunting task that calls for conservation, sustainable resource utilization, and community participation. The protection of biodiversity is one of the main ways to address the issues of deforestation, as well as the protection of certain territories where species can live freely without a possibility of interaction with humans. They can also be used as ecotourism areas where people can go for tourism hence benefitting the community through economic returns which may be used to support conservation efforts.

It is equally important to maintain protected areas through sustainable land management practices to alleviate pressure on forests and other natural resources. This involves the promotion of agroforestry, a technique where trees are incorporated into farming systems, a practice that offers numerous advantages ranging from enhanced soil productivity, increased biological diversity, and the ability to adapt to changing climate conditions. This has the advantage of reducing the pressure on the forests for fuel wood, fodder and timber among other products.

Only tree planting activities can help reverse the effects of deforestation and desertification in Somalia. Such endeavours should aim at the reforestation process and the conservation of the existing forests, especially in areas with water towers and important bio-diversity. Participation of people in reforestation projects should be encouraged and the projects should be in a culturally sensitive manner that will be of direct benefit to the people in that particular area. This can go a long way in fostering conservation and sustainability measures among the locals to ensure the projects are sustainable.

Employment creation, which does not involve the destruction of the environment, is equally another method of combating

environmental degradation in Somalis. For instance, funding the growth of responsible business sectors including; tourism, organic farming and hydro power, can offer employment that does not degrade the environment. Lastly, awareness campaigns increase people's understanding towards environmental conservation and begin the culture towards sustainable development in Somalia.

Fighting environmental problems in Somalia requires foreign assistance and collaboration. In this case, the country lacks sufficient internally generated resources, and the political instabilities make it hard to implement adequate conservation and sustainable development measures with less outside help. Bilateral and multilateral donors and international organizations can offer technical and financial assistance in developing the institutional and human resources in order to manage resources and govern them sustainably. Furthermore, Global collaboration could be leveraged to provide knowledge of other countries' experiences and practices in addressing such issues thus allowing Somalia to emulate from other countries.

Last but not least, research and innovation are critical in finding and implementing solutions to the existing environmental problems in Somalia. Further studies are required to understand the effects of deforestation, loss of species, and desertification so that the governments and policymakers can make informed decisions when designing the program for conservation. The impacts of environmental degradation can be reduced through the application of appropriate technologies including disease-resistant seeds, efficient water use and renewable energy sources for sustainable development in Somalia.

5. Conclusion

Somalia's forests and the sustainability of the environment in the country is at a crossroads. Such problems as deforestation, loss of biological diversity, and desertification are rather acute and manifold, which implies that the fight against them should be integrated and multifaceted, targeting both the symptoms and the causes of environmental degradation. The effectiveness of these efforts will also depend on the level of engagement of the government, civil society and the international community in the promotion of environmental conservation and sustainable development.

The challenge of deforestation and desertification in Somalia can be addressed by advocating for the diversification of income sources, afforestation, and sustainable land use. These initiatives need to be backed by sound policies, sufficient resources, and public participation to attain their intended goals. Conversely, the declaration of protected areas and encouragement of sustainable economic activities including ecological tourism can create viable conservation incentives for the conservation of Somalia's diverse species and resources.

The role of international cooperation in determining the methods of tackling the environmental crisis in Somalia will remain vital especially in the development of instituting local capability in resource management and governance. Synergies can contribute to the proper financing and execution of conservation activities, whilst studies and advancements shall offer the necessary information and technologies for developing appropriate solutions to the issues of deforestation, wildlife depletion, and desertification.

Therefore, the environmental problems that are ailing

Somalia can be addressed through effort and persistence. Thus, with the help of both national and global initiatives, it is still possible to change the current tendencies and save the Somali forests and the country's population from the consequences of climate change. Taking these environmental, social, and economic dimensions into consideration can help not only protect the natural resources of Somalia but also create the basis for sustainable development in the context of potential future environmental shocks.

6. References

1. Abdi MA, Jama HA. The impact of charcoal production on Somalia's forests. *Journal of Sustainable Forestry*. 2016;35(1):44–53.
2. Aden AY, Mohamed SA. The socio-economic impact of desertification in Somalia. *Global Environmental Change*. 2018;48:97–106.
3. Elmi OH, Warsame MA. Addressing desertification through reforestation in Somalia. *Land Degradation & Development*. 2022;33(2):353–361.
4. Elmi OH, Warsame MA. Combatting desertification in Somalia: Challenges and solutions. *Journal of Environmental Management*. 2022;286:1122–1135.
5. Hassan AA, Osman IM. Endangered species and habitat destruction in Somalia. *Biodiversity and Conservation*. 2020;29(7):1234–1249.
6. Hassan AA, Osman IM. Sustainable land management practices in Somalia. *Agricultural Systems*. 2020;182:102–110.
7. Hussein AI. Deforestation and its impacts on the environment in Somalia. *African Journal of Environmental Science and Technology*. 2019;13(4):153–160.
8. Hussien MS, Kulmie DA. Community resilience and drought mitigation: A literature review. *International Journal of Multidisciplinary Research and Growth Evaluation*. 2024;5(6):193–199.
9. Warsame MA, Mohamed AY, Yusuf AS. Strategies for biodiversity conservation in Somalia. *Conservation Biology*. 2017;31(3):559–568.
10. Warsame MA, Mohamed AY, Yusuf AS. The role of pollinators in sustaining biodiversity in Somalia. *Ecological Indicators*. 2017;77:144–152.
11. Yusuf AS, Mohamed AY, Warsame MA. Climate change and its impacts on biodiversity in Somalia. *Environmental Research Letters*. 2017;12(8):084001.