

Embracing Sustainable Land Management Practices in Africa

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Abstract

This paper critically discusses the need to embrace sustainable land management practices in Africa. It argues that Africa is richly endowed with arable land that can accelerate Sustainable Development in the continent. The paper further argues that unsustainable land use and management practices are a major hindrance to sustainability in Africa. It highlights such practices and their effect on Sustainable Development in Africa. The paper further conceptualizes sustainable land management and points out its key tenets. It suggests ways through which sustainable land management practices can be embraced in Africa for Sustainable Development.

1.0 Introduction

Land is a key factor production that provides humanity with vital natural resources water, forests, and mineral resources including coal, oil, gas, and metals¹. It has been noted that land provides humanity with food, water, raw materials and other vital resources that make the planet habitable². For example, plants provide nearly 80 percent of the human diet, and we rely on agriculture as an important economic activity³. Further, forests cover almost 30 percent of the Earth's surface, and provide vital habitats for millions of species, and important sources for clean air and water, as well as being crucial

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¹ Doughan. Y., 'Factors of Production, Economic Growth, and Sustainable Development' Available at https://link.springer.com/referenceworkentry/10.1007/978-3-319-71058-7_121-1 (Accessed on 21/06/2024)

² United Nations Environment Programme., 'World Environment Day turns global gaze towards land restoration' Available at <https://www.unep.org/news-and-stories/story/world-environment-day-turns-global-gaze-towards-land-restoration> (Accessed on 21/06/2024)

³ United Nations Development Programme., 'Life on Land' Available at <https://www.undp.org/sustainable-development-goals/life-on-land> (Accessed on 21/06/2024)

for combating climate change⁴. Land is therefore is a key resource for socio-economic development.

The United Nations Environment Programme notes that land is as vital for humanity's existence as air and water⁵. It notes that land is one of our greatest shared assets⁶. However, degradation of land has been identified as one of the most pressing global problem⁷. It has been pointed out that unchecked degradation threatens not only human wellbeing but that of the entire planet, contributing to accelerating climate change and loss of biodiversity⁸.

Land is being degraded rapidly worldwide, largely due to climate change, unsustainable agriculture practices, and deforestation⁹. This leads to biodiversity and ecosystem services loss, and ultimately decreases agricultural productivity resulting in food insecurity¹⁰. It is estimated that land degradation affects the livelihoods of over 3 billion people around the planet, particularly vulnerable populations in developing countries¹¹. Land degradation in the form of soil erosion, loss of fertility, loss of vegetation, desertification, salinisation or pollution is increasingly becoming a major global environmental issue¹². Humanity therefore faces the challenge of how to sustain the

⁴ Ibid

⁵ United Nations Environment Programme., 'Voices from the Land: Restoring Soil and Enriching Lives' Available at <https://www.unep.org/resources/publication/voices-land-restoring-soil-and-enriching-lives> (Accessed on 21/06/2024)

⁶ Ibid

⁷ Ibid

⁸ Ibid

⁹ United Nations Development Programme., 'Local Action on Sustainable Land Management' Available at https://www.thegef.org/sites/default/files/documents/2022-05/SGP_Local_Action_SLM_2022_05.pdf (Accessed on 21/06/2024)

¹⁰ Ibid

¹¹ Ibid

¹² AUDA-NEPAD., 'Sustainable Land Management' Available at <https://www.nepad.org/file-download/download/public/117390> (Accessed on 21/06/2024)

productivity of land while promoting its prudent use¹³. Sustainable land management has been identified as a response to this challenge¹⁴.

This paper critically discusses the need to embrace sustainable land management practices in Africa. It argues that Africa is richly endowed with arable land that can accelerate Sustainable Development in the continent. The paper further argues that unsustainable land use and management practices are a major hindrance to sustainability in Africa. It highlights such practices and their effect on Sustainable Development in Africa. The paper further conceptualizes sustainable land management and points out its key tenets. It suggests ways through which sustainable land management practices can be embraced in Africa for Sustainable Development.

2.0 Defining Sustainable Land Management Practices

Sustainable Land Management (SLM) has been defined as the adoption of land use systems that, through appropriate management practices, enables land users to maximize the economic and social benefits from the land while maintaining or enhancing the ecological support functions of the land resources¹⁵. SLM comprises measures and practices adapted to biophysical and socio-economic conditions aimed at the protection, conservation and sustainable use of resources (soil, water and biodiversity) and the restoration of degraded natural resources and their ecosystem functions¹⁶. SLM can therefore be understood as an approach that recognizes the critical need to balance ecological conservation with human needs¹⁷. It comprises of practices aimed at

¹³ Ibid

¹⁴ Ibid

¹⁵ Woodfine. A., 'Using Sustainable Land Management Practices to Adapt to and Mitigate Climate Change in Sub-Saharan Africa' Available at [https://www.ipcinfo.org/fileadmin/user_upload/terrafrica/docs/SLM SUB-SAHARAN_AFRICA.pdf](https://www.ipcinfo.org/fileadmin/user_upload/terrafrica/docs/SLM_SUB-SAHARAN_AFRICA.pdf) (Accessed on 24/06/2024)

¹⁶ Food and Agriculture Organization., 'SLM Practices' Available at <https://www.fao.org/land-water/land/sustainable-land-management/slm-practices/en/> (Accessed on 24/06/2024)

¹⁷ Gray Group International., 'Sustainable Land Management: Balancing Ecology with Human Needs' Available at <https://www.graygroupintl.com/blog/sustainable-land-management> (Accessed on 24/06/2024)

maintaining and improving the productivity of land while also preserving its natural resources¹⁸.

SLM practices include management of soil, water, vegetation and animal resources¹⁹. These practices have ecological, economic, and socio-cultural benefits²⁰. Ecologically, practices are effective in combating land degradation²¹. Socially, it has been noted that SLM practices help in securing sustainable livelihoods by maintaining or increasing soil productivity, therefore improving food security and reducing poverty, both at household and national levels²². Further, it has been asserted that economically, SLM pays back investments made by land users, communities or governments²³. Agricultural production is safeguarded and enhanced for small-scale subsistence and large-scale commercial farmers alike, as well as for livestock keepers²⁴. The selection of appropriate SLM practices and approaches has been identified as an important step in ensuring the effectiveness of land management and restoration²⁵.

It has been pointed out that the foundation of SLM lies in the understanding and integration of its core principles²⁶. At its essence, SLM involves the responsible and careful use of land resources to achieve long-term sustainability²⁷. One of the key principles of SLM is ecosystem-based approach which recognizes the interconnectedness of various ecological components and aims to maintain or restore the balance within

¹⁸ Ibid

¹⁹ Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Available at <https://duddal.org/files/original/02c3a34c5f312bd300d7331f81ea9ef951c1c7c8.pdf> (Accessed on 24/06/2024)

²⁰ Ibid

²¹ Ibid

²² Ibid

²³ Ibid

²⁴ Ibid

²⁵ Food and Agriculture Organization., 'SLM Practices' Op Cit

²⁶ Gray Group International., 'Sustainable Land Management: Balancing Ecology with Human Needs' Op Cit

²⁷ Ibid

ecosystem²⁸s. By considering the interactions between land, water, plants, animals, and humans, SLM ensures the preservation of biodiversity and the provision of crucial ecosystem services²⁹. SLM practices must therefore be environmentally friendly, reduce past and current land degradation, improve biodiversity and increase resilience to climate variation and change³⁰. They should prevent, mitigate and rehabilitate land degradation³¹. SLM is also founded on the principle of participation and decision making³². It requires the involvement of all stakeholders, including local communities, landowners, government agencies, and non-governmental organizations³³. It has been noted that participatory decision-making processes ensure that the diverse perspectives and knowledge of different stakeholders are considered in land management planning and implementation³⁴. In addition, SLM is also premised on knowledge-based decision making, adaptive management, and an integrated approach which emphasizes the integration of various disciplines and sectors to address the complex challenges associated with land use³⁵.

SLM therefore offers various benefits. SLM practices are crucial in addressing land degradation: through avoiding, reducing and reversing the impacts of land degradation³⁶. They also ensure the optimal use of the land's resources as well as underpinning ecosystem services – for the benefit of present and future generations³⁷. It has been noted that SLM practices are vital in restoring ecosystem function and services,

²⁸ Ibid

²⁹ Ibid

³⁰ Liniger, H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

³¹ Ibid

³² Gray Group International., 'Sustainable Land Management: Balancing Ecology with Human Needs' Op Cit

³³ Ibid

³⁴ Ibid

³⁵ Ibid

³⁶ Food and Agriculture Organization., 'Promoting Sustainable Land Management through Evidence-Based Decision Support' Available at <https://openknowledge.fao.org/server/api/core/bitstreams/fc693b42-e6eb-49c0-89cc-4cf6991dd9a0/content> (Accessed on 24/06/2024)

³⁷ Ibid

improving land productivity, enhancing resilience to climate change, coping with change and extremes, protecting biodiversity including agrobiodiversity, and improving rural livelihoods³⁸. It is therefore necessary to embrace SLM practices for sustainability.

3.0 Embracing Sustainable Land Management Practices in Africa: Opportunities and Challenges

Land has been defined as the true wealth of Africa especially Sub-Saharan Africa (SSA)³⁹. The region is characterized by a very rich diversity of natural ecosystem resources, including soils, vegetation, water and genetic diversity⁴⁰. Africa is rich in natural resources ranging from arable land, water, oil, natural gas, minerals, forests and wildlife⁴¹. It is estimated that Africa holds 65 per cent of the world's arable land⁴². Land is an economic development asset as well as a socio-cultural resource in Africa⁴³. It is vital in the provision of food, water, wood, fibre and industrial products among other essential ecosystem services and functions for the people of Africa⁴⁴.

However, the sustainability of land as an economic, social, and cultural resource in Africa is threatened by several factors. It has been noted that land is being degraded rapidly in Africa largely due to climate change, unsustainable agriculture practices, and deforestation⁴⁵. African land and water resources in some areas are seriously being

³⁸ Ibid

³⁹ Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

⁴⁰ Ibid

⁴¹ United Nations Environment Programme., 'Our Work in Africa' Available at <https://www.unep.org/regions/africa/our-work-africa#:~:text=The%20continent%20has%2040%20percent,internal%20renewable%20fresh%20water%20source>. (Accessed on 24/06/2024)

⁴² Ibid

⁴³ Ibid

⁴⁴ Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

⁴⁵ Nyemeck. M-L., Canestrelli. A. P., & Edo. R., 'Local Action on Sustainable Land Management' Available at https://www.thegef.org/sites/default/files/documents/2022-05/SGP_Local_Action_SLM_2022_05.pdf (Accessed on 24/06/2024)

threatened through overuse⁴⁶. This has been attributed to increasing needs of a growing population, combined, often, with inappropriate land management practices⁴⁷.

Land degradation is a major challenge in Africa. It has been pointed out that Africa is particularly vulnerable to land degradation and desertification, and it is the most severely affected region in the world⁴⁸. It is estimated that desertification affects around 45 per cent of Africa's land area, with 55 per cent of this area at high or very high risk of further degradation⁴⁹. Land degradation in Africa has been vastly detrimental to agricultural ecosystems and crop production and is therefore an impediment in achieving food security and improving livelihoods in the continent⁵⁰. According to the Food and Agriculture Organization, Africa loses an estimated 5 million hectares of tropical forest area per year⁵¹. Land degradation is estimated to affect about 230 million hectares of land annually in Africa⁵². Land degradation puts the productive potential and general well-being of communities in Africa at risk since it results in a significant reduction in economic, social and ecological benefits of land for crop, livestock and tree production purposes⁵³. It also has important implications for climate change mitigation and adaptation, given that the loss of biomass and soil organic matter as a result of land degradation releases carbon into the atmosphere⁵⁴.

⁴⁶ Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

⁴⁷ Ibid

⁴⁸ United Nations Environment Programme., 'The Economics of Land Degradation in Africa: Benefits of Action Outweigh the Costs;A complementary report to the ELD Initiative' Available at <https://www.unep.org/resources/report/economics-land-degradation-africa-benefits-action-outweigh-costsa-complementary> (Accessed on 24/06/2024)

⁴⁹ Ibid

⁵⁰ Ibid

⁵¹ Food and Agriculture Organization., 'Land and Environmental Degradation and Desertification in Africa' Available at <https://www.fao.org/4/x5318e/x5318e01.htm#:~:text=Africa%20loses%20an%20estimated%205,effect%20on%20the%20poorest%20communities>. (Accessed on 24/06/2024)

⁵² Ibid

⁵³ Woodfine. A., 'Using Sustainable Land Management Practices to Adapt to and Mitigate Climate Change in Sub-Saharan Africa' Op Cit

⁵⁴ Ibid

Climate change is also a major threat to the sustainability of land in Africa⁵⁵. The continent is highly vulnerable to climate change due to several reasons including endemic poverty and high dependence on rain-fed agriculture, complex governance and institutional dimensions, limited access to capital including markets and technology, weak infrastructure, ecosystem degradation and poor management of natural resources, disasters both natural and man-made and conflicts⁵⁶. This vulnerability is worsened by strong dependence of African economies on climate sensitive natural resources including land⁵⁷. The continent is already experiencing effects of climate change such as drought, water scarcity, flooding among others⁵⁸. It has been pointed out that land degradation and climate change mutually reinforce each other, creating serious implications for food security, biodiversity and livelihoods in Africa⁵⁹. Climate change results in loss of arable land in Africa⁶⁰. It also fuels conflicts related to scarce productive land, water, and pasture⁶¹.

SSA has been classified as a region that is highly vulnerable to threats of natural resource degradation and poverty⁶². This is a result of various factors including a high population growth rate and increasing population pressure, reliance on agriculture that is vulnerable to environmental change, fragile natural resources and ecosystems, high rates of erosion and land degradation. The region is also highly vulnerable to climate variability and

⁵⁵ Ibid

⁵⁶ Kimaro. Didas et al., 'Climate Change Mitigation and Adaptation in ECA/SADC/COMESA Region: Opportunities and Challenges.' Available at https://www.researchgate.net/publication/346628199_Climate_Change_Mitigation_and_Adaptation_in_ECASADCCOMESA_region_Opportunities_and_Challenges (Accessed on 24/06/2024)

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ AGNES., 'Land Degradation and Climate Change in Africa' Available at <https://hdl.handle.net/10568/107809> (Accessed on 24/06/2024)

⁶⁰ Ibid

⁶¹ Ibid

⁶² Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

long-term climate change⁶³. Further, it has been noted that current agricultural practices in Africa are causing soils to erode faster than natural processes can replenish them⁶⁴. Unsustainable land management practices including continuous cropping, with reductions in fallow and rotations, repetitive tillage and soil nutrient mining, continuous overstocking, overgrazing, frequent rangeland burning, and over-use or clearance of woodlands and forest are prevalent in Africa⁶⁵. These practices have adverse impacts including loss of soil and other natural resources, changes in natural habitats and ecosystems, reduced ecosystem services such as water infiltration and loss of agrobiodiversity and wild biodiversity as well as decrease in land productivity leading to poor harvests and food shortages⁶⁶.

In light of these challenges, it is imperative to embrace sustainable land management practices in Africa. It has been pointed out that caring for land, especially agricultural land, is at the heart of the response to the converging challenges of food security, fight against poverty, adaptation to and mitigation of climate change, restoring ecosystems and nurturing biodiversity⁶⁷. SLM practices and their upscaling in Africa are essential to sustain and improve livelihoods while protecting land's resources and ecosystem functions⁶⁸.

⁶³ Ibid

⁶⁴ Nyemeck. M-L., Canestrelli. A. P., & Edo. R., 'Local Action on Sustainable Land Management' Op Cit

⁶⁵ Woodfine. A., 'Using Sustainable Land Management Practices to Adapt to and Mitigate Climate Change in Sub-Saharan Africa' Op Cit

⁶⁶ Ibid

⁶⁷ Food and Agriculture Organization., 'Promoting Sustainable Land Management through Evidence-Based Decision Support' Op Cit

⁶⁸ Economic of Land Degradation Initiative., 'Sustainable Land Management in Africa' Available at <https://www.eld-initiative.org/en/projects-activities/sustainable-land-management/highlights-of-sustainable-land-management-in-africa#:~:text=Sustainable%20land%20management%20practices%20and,land's%20resources%20and%20ecosystem%20functions> (Accessed on 24/06/2024)

Upscaling SLM practices in Africa can increase land productivity⁶⁹. This can be achieved by improving water use efficiency and productivity through harvesting water, improving infiltration, and maximizing water storage⁷⁰. Soil fertility decline due to unproductive nutrient losses through leaching, erosion, loss to the atmosphere is also a key challenge in Africa⁷¹. SLM practices such as cover improvement, crop rotation, fallow and intercropping, application of animal and green manure, and compost through integrated crop-livestock systems can address this challenge and improve land productivity in Africa⁷². Enhancing SLM practices in Africa can also improve livelihoods as a result of higher net returns⁷³. In addition, SLM practices can conserve critical ecosystem services and improve biodiversity⁷⁴.

SLM practices can also enable countries and communities in Africa to better adapt to climate change and its impacts while also mitigating its adverse effects. For example, integrated land and water management can prevent land degradation, restore degraded lands, and reduce the need for further conversion of natural forests and grasslands⁷⁵. This approach reduces greenhouse gas emissions and maintains carbon stocks in soil and vegetation at relatively low cost, while also improving food production and securing diverse livelihoods⁷⁶. Further, it has been noted that many SLM practices can contribute to making farming systems of the rural poor in SSA countries more resilient to the adverse impacts of climate change⁷⁷. These practices include direct seeding equipment and drip irrigation technologies, and planting drought resilient crop varieties⁷⁸.

⁶⁹ Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

⁷⁰ Ibid

⁷¹ Ibid

⁷² Ibid

⁷³ Ibid

⁷⁴ Ibid

⁷⁵ Economic of Land Degradation Initiative., 'Sustainable Land Management in Africa' Op Cit

⁷⁶ Ibid

⁷⁷ Ibid

⁷⁸ Ibid

SLM practices are therefore vital for development and environmental sustainability in Africa⁷⁹. Land degradation in Africa impedes agricultural growth, increases poverty and vulnerability, and contributes to social tensions as populations rise and imposes greater burdens on limited natural resources⁸⁰. Unsustainable land management practices result in poor land productivity, threatens biodiversity and increases the release of carbon especially through the destruction of forests as well as adversely impacting water resource management⁸¹. Embracing SLM practices presents opportunities for enhancing the livelihoods of the poor and fostering inclusive growth as well as for achieving environmental sustainability⁸². It is therefore necessary to embrace SLM practices in Africa for development.

4.0 Conclusion

It is necessary to embrace SLM practices in Africa. It has been noted that SLM Practices are a key entry point for improving land resource resilience and productivity within the context of the potentially devastating effects of climate change in SSA, bridging the needs of agriculture and environment, with the twin objectives of maintaining long term productivity and ecosystem functions (including land, water, biodiversity)⁸³; and increasing productivity (quality, quantity and diversity) of goods and services including safe and healthy food⁸⁴. It is therefore necessary to embrace SLM techniques in Africa. These practices include agroforestry and sustainable farming practices⁸⁵. Agroforestry, which is the practice of integrating trees and crops, offers numerous benefits in SLM⁸⁶.

⁷⁹ Integrated Food Security Phase Classification., 'Policy and Financing for Sustainable Land Management in Sub-Saharan Africa' Available at https://www.ipcinfo.org/fileadmin/user_upload/terrafrica/docs/Policy%20and%20Financing%20for%20Sustainable%20Land%20Management%20in%20Sub-Saharan%20Africa.pdf (Accessed on 24/06/2024)

⁸⁰ Ibid

⁸¹ Ibid

⁸² Ibid

⁸³ Woodfine. A., 'Using Sustainable Land Management Practices to Adapt to and Mitigate Climate Change in Sub-Saharan Africa' Op Cit

⁸⁴ Ibid

⁸⁵ Gray Group International., 'Sustainable Land Management: Balancing Ecology with Human Needs' Op Cit

⁸⁶ Ibid

This approach not only provides shade for crops, but it also conserves water by reducing evaporation from the soil surface⁸⁷. Further, the presence of trees also helps to improve soil fertility by increasing organic matter content through the decomposition of fallen leaves and other plant materials⁸⁸. In addition, embracing sustainable farming practices such as organic farming and crop rotation can also contribute to long-term land sustainability⁸⁹. Other key SLM practices include conservation agriculture that involves minimizing soil disturbance, maintaining permanent soil cover, and implementing crop rotation practices⁹⁰; and adopting regenerative agriculture practices, such as the use of cover crops and composting⁹¹. Other key approaches include mulching, integrated plant and pest management, sustainable grazing management, organic agriculture, intercropping⁹².

Several policy actions are also required in order to effectively embrace SLM practices in Africa. These include improving profitability of sustainable production through appropriate economic policies, development and adoption of technologies for SLM, and fostering security of tenure⁹³. It is also imperative to establish viable institutional and policy frameworks to create an enabling environment for the adoption of SLM practices in Africa⁹⁴.

Finally, it is imperative to foster participation and inclusive decision making in order to enhance SLM practices in Africa⁹⁵. Effective SLM practices are founded on the principle

⁸⁷ Ibid

⁸⁸ Ibid

⁸⁹ Ibid

⁹⁰ Ibid

⁹¹ Ibid

⁹² Woodfine. A., 'Using Sustainable Land Management Practices to Adapt to and Mitigate Climate Change in Sub-Saharan Africa' Op Cit

⁹³ Integrated Food Security Phase Classification., 'Policy and Financing for Sustainable Land Management in Sub-Saharan Africa' Op Cit

⁹⁴ Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

⁹⁵ Ibid

of participation and decision making⁹⁶. They require the involvement of all stakeholders, including local communities, landowners, government agencies, and non-governmental organizations⁹⁷. It has been noted that embracing the participation of local communities – including Indigenous Peoples, women, and youth can play a pivotal role in SLM, agroecology, sustainable agriculture and sustainable forest management practices, which provide both environmental and socio-economic benefits⁹⁸. Extension services also need to be provided based on appropriate training and capacity building in order to enhance participation in SLM practices⁹⁹.

It is necessary to embrace SLM practices in Africa for sustainability.

⁹⁶ Gray Group International., 'Sustainable Land Management: Balancing Ecology with Human Needs' Op Cit

⁹⁷ Ibid

⁹⁸ Nyemeck. M-L., Canestrelli. A. P., & Edo. R., 'Local Action on Sustainable Land Management' Op Cit

⁹⁹ Liniger. H et al., 'Sustainable Land Management in Practice: Guidelines and Best Practices for Sub-Saharan Africa' Op Cit

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https://www.ipcinfo.org/fileadmin/user_upload/terrafrica/docs/SLM_SUB-SAHARAN_AFRICA.pdf