Published: 18th September 2026

INTERNATIONAL JOURNAL OF REAL ESTATE

ISSN: 2476-8073

DEVELOPING A COMMUNITY-BASED FRAMEWORK FOR SUSTAINABLE LAND MANAGEMENT IN EDO STATE, NIGERIA: A REVIEW OF EXISTING PRACTICES, INFLUENCING FACTORS, AND INSTITUTIONAL CHALLENGES

[1]Opeyemi Lucky Eyinla, [2]David N. Mbazor, [3]Babajide Ojo

[1]Department of Estate Management and Valuation, Auchi Polytechnic, Auchi, Edo State, Nigeria
[2,3]Department of Estate Management, Federal University of Technology Akure

Email: [1]rallyberry@yahoo.com

DOI: https://doi.org/10.5281/zenodo.22829677

ABSTRACT

Sustainable land management has become increasingly important for addressing land degradation, environmental decline, and governance challenges in developing countries. In Nigeria, particularly in Edo State, rapid population growth, urban expansion, weak land governance systems, tenure insecurity, and environmental pressures continue to threaten the sustainable use of land resources. This study reviewed existing literature on sustainable land management with the aim of developing a community-based framework for improving land governance and environmental sustainability in Edo State, Nigeria. A thematic literature review approach was adopted, drawing evidence from peer-reviewed journal articles, books, policy documents, government publications, and reports from international organisations. Relevant literature was obtained from major academic databases and institutional repositories and analysed through thematic synthesis. The review identified institutional weaknesses, limited stakeholder participation, insecure land tenure systems, inadequate policy implementation, and environmental degradation as major constraints to sustainable land management. Findings further revealed that active community participation, effective land governance, stakeholder collaboration, environmental conservation measures, and capacity-building initiatives significantly contribute to sustainable land management outcomes. Based on these findings, a community-based framework was developed to strengthen collaboration among government institutions, traditional authorities, local communities, civil society organisations, and private-sector actors. The framework emphasises participatory decision-making, secure land tenure, environmental stewardship, institutional coordination, and continuous monitoring and evaluation. The study concludes that integrating community participation into land governance systems offers a practical pathway for enhancing sustainable land management and environmental sustainability in Edo State and similar developing regions.

Keywords: Sustainable land management, community participation, land governance, environmental sustainability, land tenure, Edo State, Nigeria.

1.0 Introduction

Land is one of the most important natural resources essential for human life, economic development, food security and environmental sustainability. Land resource management has a major impact on agriculture productivity, biodiversity conservation, ecosystem resilience and socio-economic development. As a result, sustainable land management (SLM) has become a key approach to land degradation, environmental degradation and natural resources stress in the world (FAO, 2012; Nkonya et al., 2016). Sustainable land management encourages social, economic and environmental aspects to be integrated in the use of the natural resources so that the land use requirements of the present generation are not being jeopardized for future generations' use (FAO, 1993). The growing population, urbanisation, climate change, deforestation and unsustainable farming practices have put a strain on land resources globally. As a result of these challenges, land degradation is an issue in many parts of the world, ecosystem services are decreasing, biodiversity loss is occurring, and agricultural productivity has suffered, especially in developing countries where the majority of the population rely on land for their livelihood (Nkonya et al., 2016). Governments, development agencies and environmental organisations have increasingly turned to sustainable land management practices to seek a balance between development and environmental conservation.

However, in many developing countries, the performance of sustainable land management programmes is limited by low levels of governance, insecure land tenure, lack of stakeholder involvement, weak institutional arrangements and low participation in land use decision-making processes (Lockwood et al., 2010; FAO, 2012). Challenges to governance frequently hinder policy implementation and lower interventions' sustainability in the environment. Thus, the current debate surrounding sustainable land use increasingly focuses on participatory and community-based approaches which involve local communities as key actors in environmental management and land governance (Reed, 2008; Reed et al., 2018). Nigeria has many of the land management issues seen throughout the developing world. The pressure on available land resources has been growing due to rapid population growth, urbanization, intensification of farming activities, deforestation and degradation of the environment. While a number of land administration and environmental management policies are in place, their effectiveness has been constrained by institutional weaknesses, inter-agency turf wars, poor tenure security and weak stakeholder involvement. These

continue to impact the sustainability of land-use and effectiveness of environmental management efforts in many areas across the country.

Edo State, in the South-South region of Nigeria, is a significant context in which to look at sustainable land management. The state has a large forest wealth, agricultural land, fast growing cities and ecologically fragile areas, which are getting more vulnerable to anthropogenic hazards. Population growth, urban development, infrastructure development, agriculture operations, and resource exploitation have increased the competition for land resources throughout the state. These pressures have led to land-use conflicts, deforestation, degradation of the environment and concerns about the long-term sustainability of land management practices. While these challenges are relevant, evidence shows that community engagement is not fully embedded in land governance processes and hence many land management interventions are less effective and sustainable. Previous research on sustainable land management has tended to concentrate on technical land conservation, land administration, environmental protection, and governance reform. Although these studies offer important lessons, there has been relatively little research focus on the design of integrated community-based approaches that can simultaneously tackle the socio-economic dimensions, institutional performance, environmental sustainability, stakeholder engagement, and participation of the community in the context of SLM. The lack of an in-depth study of the linkages between governance mechanisms, community participation and environmental management is stark in Edo State.

Despite increasing scholarly attention to sustainable land management, existing studies have largely focused on land governance challenges, environmental degradation, and policy issues independently. Limited attention has been given to developing an integrated community-based framework that combines community participation, indigenous knowledge, institutional collaboration, land tenure security, and environmental sustainability within a single operational model. This gap is particularly evident in Edo State, where diverse land-use pressures and governance challenges continue to affect sustainable land management outcomes. This study therefore seeks to bridge this gap by synthesising existing knowledge and proposing a practical framework for community-based sustainable land management.

https://doi.org/10.5281/zenodo.22829677

2.0 The aim of this study

The aim of this study is to develop a community-based framework for sustainable land management in Edo State, Nigeria through a thematic review of existing literature on land governance, community participation, socio-economic factors, and environmental sustainability.

2.1 Objectives of the Study

The study seeks to:

1. examine sustainable land management and contemporary land governance challenges in Edo State.
2. review existing land management practices and governance systems relevant to sustainable land management.
3. assess the role of community participation in promoting sustainable land management.
4. examine the socio-economic determinants influencing sustainable land management.
5. evaluate environmental sustainability issues affecting land resource management.
6. develop a community-based framework for sustainable land management in Edo State.

3.0 MATERIALS AND METHODS

3.1 Study Area

This review is contextualised within Edo State, Nigeria, which serves as the geographical focus for the development of the proposed community-based framework for sustainable land management. Edo State is located in the South-South geopolitical zone of Nigeria between latitudes 5°44′N and 7°34′N and longitudes 5°04′E and 6°43′E. The state covers approximately 19,794 km² and is bounded by Kogi State to the north, Delta State to the south, and Ondo State to the west (see Figure 1).

Edo State has a variety of ecological and socio-economic contexts which makes it ideal for studying sustainable land management issues. The state is made up of tropical rainforest ecosystem, agricultural landscapes, wetlands, urban settlements, and rapidly growing peri-urban communities. Agriculture is still a key economic activity and farming systems are predominantly

crop-based and agroforestry-based and dominated by smallholder-based agricultural production. There are also important forest reserves and biodiversity assets within the state, which are important for environmental sustainability and livelihoods. The high rate of population growth, urbanisation, infrastructure development, agriculture expansion and the growing requirement for land resources have brought more pressure to the state's natural resource base in recent decades. These pressures have led to problems including deforestation, land degradation, soil erosion, biodiversity loss, uncontrolled urban sprawl and land use disputes. Sustainable land management is thus a policy issue in the state.

The reasons behind the choice of Edo State as the focal area of this review are related to the increasing demand to enhance land governance systems, strengthen and involve communities in land-use decision-making, and promote sustainable management of land resources under the rising pressure of environmental and development challenges. The state thus affords a good opportunity to assess the current knowledge and build a model that includes community engagement, institutional involvement, and environmental sustainability.

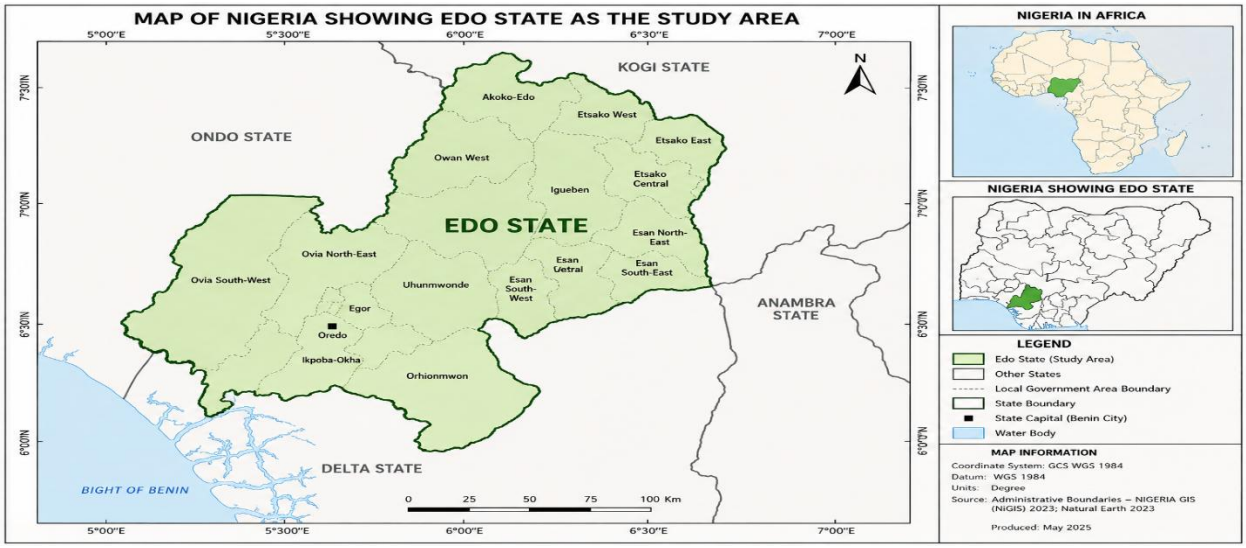


Figure 1: Edo State Location
Source: Geography Department, University of Abuja, 2026

https://doi.org/10.5281/zenodo.22829677

3.2 Study Design and Site Selection

The study adopted a thematic literature review approach to examine existing knowledge on sustainable land management and develop a community-based framework for sustainable land management in Edo State, Nigeria. The approach was considered appropriate because it enabled the synthesis of evidence from diverse sources relating to land governance, community participation, socio-economic factors, institutional arrangements, and environmental sustainability. Rather than collecting primary data, the study relied on existing literature to identify recurring concepts, relationships, and knowledge gaps relevant to sustainable land management.

Secondary data were obtained from peer-reviewed journal articles, academic books, government publications, policy documents, conference proceedings, institutional reports, and publications from international organisations such as the Food and Agriculture Organization (FAO), United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), United Nations Convention to Combat Desertification (UNCCD), and the World Bank. Relevant literature was sourced from major academic databases, including Google Scholar, Scopus, ScienceDirect, Web of Science, SpringerLink, Taylor & Francis Online, JSTOR, and Wiley Online Library. Priority was given to literature published between 2000 and 2025, while seminal studies that provide foundational perspectives on sustainable land management were also considered.

The literature search employed keywords such as sustainable land management, land governance, community participation, land administration, environmental sustainability, land tenure security, stakeholder collaboration, land-use planning, and community-based natural resource management. Only publications directly relevant to the objectives of the study and possessing academic or institutional credibility were included in the review.

Data extracted from the selected literature were analysed using thematic analysis. The process involved reviewing the literature, identifying recurring concepts, coding relevant information, grouping similar ideas into thematic categories, and synthesising findings across studies. The analysis focused on major dimensions of sustainable land management, including land governance challenges, existing land management practices, community participation, socio-economic determinants, institutional factors, and environmental sustainability.

Insights generated from the thematic synthesis were used to identify recurring drivers, barriers, institutional arrangements, and stakeholder relationships influencing sustainable land

management. These elements were subsequently integrated into a community-based framework designed to strengthen land governance, environmental sustainability, stakeholder participation, and collaborative decision-making in Edo State. To enhance credibility, information was obtained from reputable academic and institutional sources, and findings were compared across multiple studies to ensure consistency and reliability. Since the study relied entirely on secondary data obtained from publicly available sources, no ethical issues relating to human participants arose; however, all sources consulted were appropriately acknowledged and referenced.

4.0 LITERATURE REVIEW

4.1 Sustainable Land Management and Contemporary Land Governance Challenges

Sustainable Land Management (SLM) in Figure 2 refers to the use of land resources, including soil, water, vegetation, and biodiversity, in ways that satisfy present human needs while maintaining their long-term productive and ecological functions for future generations (FAO, 1993; Smyth & Dumanski, 1995). The concept has gained global importance due to increasing concerns over land degradation, food insecurity, biodiversity loss, climate change, and unsustainable land-use practices. SLM seeks to achieve a balance between environmental protection, economic productivity, and social well-being through integrated land-use planning and management approaches (United Nations, 2015).

Contemporary land governance challenges have become major obstacles to sustainable land management in many developing countries. These challenges include weak land administration systems, tenure insecurity, overlapping institutional responsibilities, inadequate policy implementation, rapid urbanisation, population growth, and increasing pressure on land resources (Enemark et al., 2005; World Bank, 2021). In Nigeria, ineffective land governance has contributed to uncontrolled urban expansion, environmental degradation, land-use conflicts, and declining agricultural productivity (Nwokocha & Iheriohanma, 2020).

The Sustainable Development Goals (SDGs), particularly Goals 1, 2, 11, 13, and 15, recognise the importance of sustainable land management in promoting poverty reduction, food security, climate resilience, sustainable cities, and ecosystem conservation (United Nations, 2015). Consequently, strengthening land governance institutions has become an important strategy for achieving sustainable development outcomes.

https://doi.org/10.5281/zenodo.22829677

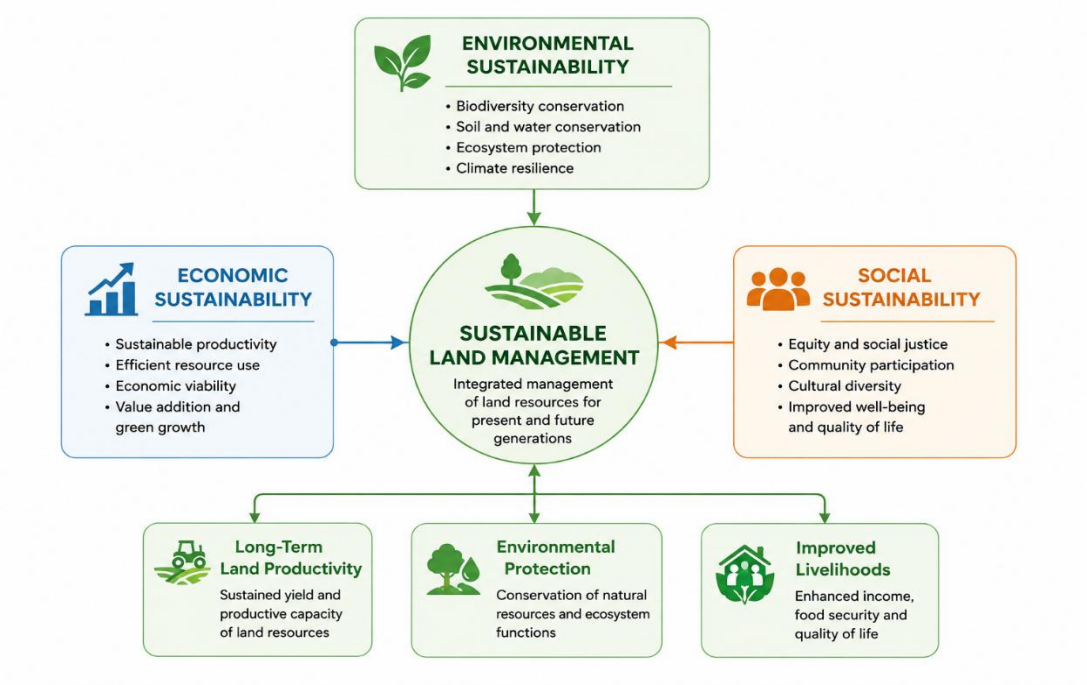


Figure 2: Conceptual Overview of Sustainable Land Management
Source: Adapted from Smyth and Dumanski (1995); Nkonya et al. (2016)

Figure 2 illustrates the three interconnected pillars of sustainable land management: environmental sustainability, economic sustainability, and social sustainability. The literature demonstrates that successful land management requires balancing these dimensions through effective governance systems, stakeholder participation, and environmental stewardship. This relationship provides the conceptual foundation for the community-based framework proposed in this study.

4.2 Existing Land Management Practices and Governance Systems

Land management practices in Figure 3 encompass the policies, institutions, procedures, and operational activities through which land resources are administered, regulated, developed, and conserved (Williamson et al., 2010). Effective land management systems provide mechanisms for land allocation, tenure administration, spatial planning, land registration, valuation, development control, and environmental protection. In many African countries, land governance systems operate through a combination of customary and statutory institutions. Customary tenure systems continue to regulate access to land in many rural communities, while statutory systems provide formal legal frameworks for land administration and land-use regulation (Alden Wily, 2018).

Although both systems play important roles, weak integration often creates administrative conflicts, tenure uncertainty, and inefficiencies in land management.

In Nigeria, land administration is largely guided by the Land Use Act of 1978, which vests land ownership in state governors and establishes formal mechanisms for land allocation and control. However, implementation challenges such as bureaucratic delays, poor coordination, weak enforcement, and limited public participation continue to undermine the effectiveness of land governance systems (Adeniyi, 2016).

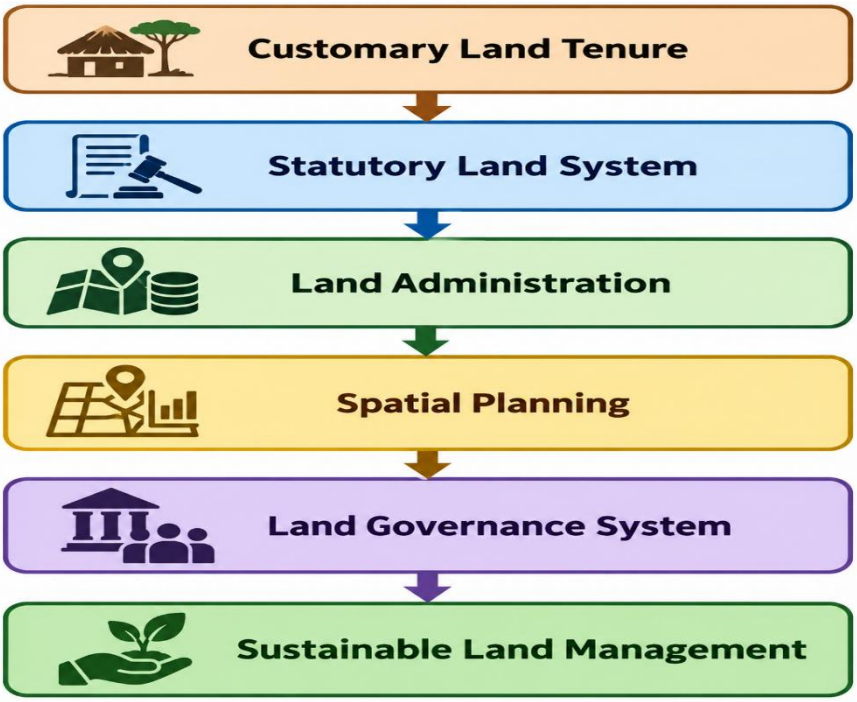


Figure 3: Conceptual pathway linking land tenure, land administration, spatial planning, land governance, and sustainable land management (adapted from FAO, 2002; FAO, 2026)

Figure 3 Customary Land Tenure provides the traditional foundation for land ownership and use within communities. This is integrated into the Statutory Land System, which formalizes land rights through legal and regulatory frameworks. Together, they support effective Land Administration, which generates reliable land information for decision-making. This information guides Spatial Planning, ensuring orderly and efficient land use. Effective planning strengthens the Land Governance System by promoting transparency, accountability, and stakeholder participation. Ultimately, these interconnected processes lead to Sustainable Land Management,

https://doi.org/10.5281/zenodo.22829677

where land resources are managed efficiently, equitably, and in an environmentally sustainable manner.

4.3 Community Participation and Sustainable Land Management

Community participation in Figure 4, refers to the active involvement of local people in planning, decision-making, implementation, monitoring, and evaluation of development programmes and resource management initiatives (Pretty, 1995). Participatory approaches have increasingly been recognised as essential for achieving sustainable land management because they encourage local ownership, accountability, and long-term commitment to environmental conservation efforts. Research has shown that communities possess valuable indigenous knowledge relating to land use, soil conservation, water management, and ecosystem protection (Ostrom, 1990). When such knowledge is integrated into formal governance systems, land management interventions tend to be more effective, equitable, and sustainable. Conversely, top-down approaches often fail because they exclude local stakeholders from decision-making processes.

Collaborative governance models further emphasise the importance of partnerships among government agencies, traditional institutions, civil society organisations, and local communities in addressing complex land management challenges (Ansell & Gash, 2008).



Figure 4: Community Participation Pathway to Environmental Sustainability

Source**:** Adapted from Reed (2008); Reed et al. (2018); Mendoza and Prabhu (2012); and Sam et al. (2017), synthesized by the researcher

Figure 4 illustrates the framework how community participation serves as the foundation for sustainable land management. Active involvement of local communities encourages stakeholder engagement, bringing together government agencies, community members, traditional institutions, and other relevant actors in decision-making processes. This collaboration fosters trust and ownership, creating a sense of shared responsibility for land resources. As trust increases, communities are more likely to demonstrate compliance and cooperation with land-use regulations, policies, and management initiatives. This leads to improved land management through better planning, monitoring, and resource utilization. Ultimately, effective land management contributes to environmental sustainability by reducing land degradation, conserving natural resources, and supporting long-term ecological resilience and community well-being.

4.4 Socio-Economic Determinants of Sustainable Land Management

Socio-economic factors play a significant role in influencing the adoption and effectiveness of sustainable land management practices. The ability of individuals and communities to implement conservation measures, adopt improved land-use practices, and participate in land governance processes is often shaped by their economic status, educational background, access to resources, and livelihood opportunities (Knowler & Bradshaw, 2007). These factors determine not only the capacity of land users to invest in sustainable practices but also their willingness to adopt long-term land management strategies. Income level is one of the most important determinants of sustainable land management. Households with higher incomes are generally better positioned to invest in soil conservation, improved farming technologies, afforestation programmes, and land restoration activities. Conversely, low-income households may prioritise short-term survival needs over long-term environmental sustainability, leading to unsustainable land-use practices such as over-cultivation, deforestation, and encroachment into environmentally sensitive areas (Pender et al., 2004).

Education also influences land management decisions by improving awareness of environmental issues and enhancing the capacity of individuals to adopt innovative and sustainable practices. Studies have shown that educated land users are more likely to embrace conservation technologies, participate in environmental programmes, and comply with land-use regulations (Teklewold et al.,

https://doi.org/10.5281/zenodo.22829677

2013). Similarly, access to credit and financial services provides opportunities for land users to invest in land improvement measures, thereby supporting sustainable land management outcomes. In addition, occupation, household assets, and livelihood diversification influence how communities interact with land resources. Communities with diversified livelihood opportunities are often less dependent on exploiting natural resources unsustainably, while those heavily reliant on land-based activities may face greater pressure on available land resources. Consequently, addressing socio-economic constraints remains essential for achieving sustainable land management objectives.



Figure 5: Socio-Economic Determinants of Sustainable Land Management
Source**:** Adapted from DFID (1999); Nkonya et al. (2016).

Figure 5 presents the socio-economic factors influencing the adoption of sustainable land management practices. The framework demonstrates how income, education, occupation, access to credit, and household assets affect land users' capacity to implement sustainable practices. The adoption of these practices contributes to improved land productivity, enhanced livelihoods, and long-term sustainability outcomes. The figure underscores the importance of socio-economic

empowerment in promoting sustainable land-use management and environmental sustainability (DFID, 1999; Nkonya et al., 2016).

4.5 Institutional and Governance Factors Affecting Sustainable Land Management

Institutional and governance factors represent some of the most significant determinants of sustainable land management outcomes. Institutions provide the rules, policies, and administrative structures that regulate land use, resolve disputes, enforce regulations, and coordinate stakeholder activities. Effective institutions create enabling conditions that encourage sustainable resource management, whereas weak institutions often contribute to land degradation and unsustainable development patterns (Lockwood et al., 2010).

Land tenure security is one of the most widely recognised governance factors influencing sustainable land management. Secure land rights provide incentives for long-term investments in conservation, soil improvement, afforestation, and ecosystem restoration because land users are more confident that they will benefit from future returns on investment. Conversely, tenure insecurity discourages conservation efforts and can contribute to resource depletion. Recent evidence from Nigeria confirms that tenure security remains a critical factor influencing the adoption of sustainable land management practices among rural land users.

Institutional capacity is equally important. Governance systems that possess adequate technical expertise, financial resources, and administrative capacity are generally more effective in implementing land-use policies and environmental management programmes. Recent studies continue to emphasise the importance of responsible land governance as a foundation for sustainable land management and land restoration initiatives worldwide.

https://doi.org/10.5281/zenodo.22829677



Figure 6: Institutional and Governance Factors Affecting Sustainable Land Management
Source: Adapted from Lockwood et al. (2010), Williamson et al. (2010), Enemark et al. (2014), and FAO (2012).

Institutional and governance factors constitute the foundation upon which sustainable land management is achieved. The literature consistently demonstrates that effective land governance depends on the existence of secure land tenure arrangements, strong institutional capacity, coherent policy frameworks, effective regulatory enforcement, and active stakeholder collaboration. These governance elements create an enabling environment that promotes transparency, accountability, participation, and efficient land administration. As illustrated in Figure 6, the interaction of these institutional drivers contributes to effective land governance, which subsequently facilitates the sustainable use, management, and conservation of land resources. The framework emphasises that sustainable land management cannot be achieved solely through technical interventions but requires supportive governance systems capable of coordinating stakeholders, enforcing regulations, protecting land rights, and promoting responsible resource use (Lockwood et al., 2010; Williamson et al., 2010; Enemark et al., 2014).

4.6 Environmental Sustainability and Land Resource Management

Environmental sustainability in Figure 7, constitutes a fundamental objective of sustainable land management. It focuses on maintaining ecosystem integrity, preserving biodiversity, protecting soil and water resources, and enhancing resilience to environmental change. Sustainable land management contributes to environmental sustainability by promoting land-use practices that maintain ecosystem services while reducing pressures on natural resources (Nkonya et al., 2016). Land degradation remains one of the most significant environmental challenges affecting sustainable development globally. Current assessments indicate that unsustainable land-use practices, deforestation, soil erosion, biodiversity loss, and climate change continue to degrade ecosystems and reduce the capacity of land resources to support human well-being. The UNCCD Global Land Outlook identifies land restoration and sustainable land management as essential strategies for reversing degradation trends and enhancing environmental resilience.

Environmental sustainability is increasingly linked to integrated land resource management approaches that combine conservation measures, ecosystem restoration, climate adaptation strategies, and participatory governance mechanisms. Such approaches recognise that environmental challenges are interconnected and require coordinated interventions across ecological, institutional, and socio-economic systems. Sustainable land management therefore serves as a critical mechanism for promoting environmental sustainability, improving ecosystem services, and supporting long-term socio-economic development.

https://doi.org/10.5281/zenodo.22829677



Figure 7: Land Resource Management Pathway to Sustainable Land Management
Source: *Researcher's conceptualization based on FAO (2025), UNCCD (2025), Smyth and Dumanski (1993), and Hurni (2000)*

4.7 Synthesis of Literature and Identified Knowledge Gap

The literature reviewed demonstrates that sustainable land management is influenced by the interaction of socio-economic conditions, governance structures, institutional effectiveness, community participation, and environmental sustainability. Previous studies have examined these factors individually and have provided valuable insights into land governance, land-use planning, tenure security, environmental management, and participatory development approaches (Ansell & Gash, 2008; Enemark et al., 2005; Williamson et al., 2010).

However, most existing studies have focused on specific aspects of sustainable land management without providing an integrated framework that combines community participation, indigenous knowledge systems, land governance, stakeholder collaboration, environmental stewardship, and institutional capacity within a unified operational model. Furthermore, limited studies have

specifically examined how these elements can be systematically integrated to support sustainable land management in Edo State.

This gap is particularly important because land management challenges in Edo State are multidimensional, involving governance issues, environmental degradation, socio-economic pressures, and limited stakeholder participation. Consequently, there is a need for a comprehensive framework that integrates these interrelated factors and provides practical guidance for policymakers, land administrators, community leaders, and development practitioners.

The present study addresses this gap by synthesising existing knowledge and proposing a community-based framework for sustainable land management that promotes collaboration among government institutions, traditional authorities, local communities, civil society organisations, and private-sector actors. The framework seeks to strengthen land governance, improve environmental sustainability, enhance community participation, and support sustainable development outcomes in Edo State.

5.0 RESULTS AND DISCUSSION OF FINDINGS

This section presents and discusses the findings from the thematic review. The discussion is organised according to the major themes identified from the literature and aligned with the objectives of the study. The findings provide insights into sustainable land management practices, governance challenges, community participation, socio-economic influences, institutional factors, and environmental sustainability issues relevant to Edo State, Nigeria. The synthesis of these findings forms the basis for the development of the proposed community-based framework for sustainable land management.

5.1 Sustainable Land Management and Contemporary Land Governance Challenges

The literature reviewed shows that sustainable land management has become increasingly important due to growing concerns about land degradation, environmental deterioration, population growth, urban expansion, and climate change. Sustainable land management seeks to balance environmental protection, economic productivity, and social well-being through the efficient use and management of land resources (FAO, 1993; Smyth & Dumanski, 1995). However,

https://doi.org/10.5281/zenodo.22829677

achieving this objective remains challenging in many developing countries because of persistent weaknesses in land governance systems.

A recurring issue identified in the literature is the weakness of land administration institutions. Many studies report that ineffective land governance systems are characterised by poor coordination among agencies, inadequate enforcement of land-use regulations, bureaucratic inefficiencies, and limited stakeholder involvement in decision-making processes (Enemark et al., 2005; Williamson et al., 2010). These challenges often result in unplanned development, land-use conflicts, environmental degradation, and inefficient utilisation of land resources. The review also highlights land tenure insecurity as a major governance challenge. Secure land rights encourage investment in land improvement, environmental conservation, and sustainable resource management, while insecure tenure discourages long-term investments and contributes to unsustainable land-use practices (Deininger & Jin, 2006). In many developing countries, including Nigeria, overlapping customary and statutory tenure systems often create uncertainty regarding ownership, access, and control of land resources.

Rapid urbanisation and population growth further intensify pressure on land resources. Expanding urban settlements frequently encroach on agricultural land, forests, wetlands, and environmentally sensitive areas. Where planning regulations are weak or poorly enforced, such expansion contributes to environmental degradation, increased vulnerability to natural hazards, and loss of ecosystem services (United Nations, 2015). Climate change has emerged as another important challenge affecting sustainable land management. Increased flooding, droughts, soil erosion, and biodiversity loss have heightened the need for integrated land-use planning and environmental management strategies. Consequently, effective land governance is increasingly recognised as a critical component of climate adaptation and sustainable development efforts (IPCC, 2022).

The literature further emphasises that governance challenges are rarely isolated. Weak institutions, inadequate policy implementation, tenure insecurity, population pressure, and environmental degradation often interact to create complex land management problems. Addressing these challenges therefore requires integrated approaches that combine institutional strengthening, stakeholder participation, environmental protection, and effective policy implementation.

Discussion of Findings

The findings suggest that sustainable land management cannot be achieved without effective land governance systems. The reviewed literature consistently demonstrates that weaknesses in land administration, insecure tenure arrangements, inadequate planning mechanisms, and poor institutional coordination undermine sustainable land management efforts. These findings support the argument that governance reforms are necessary for improving land-use planning, enhancing environmental sustainability, and promoting responsible land resource utilisation. The findings also indicate that contemporary land governance challenges extend beyond technical land administration issues and include broader socio-economic and environmental concerns. This implies that sustainable land management interventions must adopt a holistic approach that integrates governance, environmental conservation, community participation, and socio-economic development objectives.

Implication for Framework Development

The review demonstrates that effective land governance is a foundational requirement for sustainable land management. Consequently, land governance forms one of the principal pillars of the proposed community-based framework developed in this study. Components such as land tenure security, land-use planning, policy implementation, institutional coordination, and regulatory enforcement are incorporated into the framework to address the governance challenges identified in the literature.

5.2 Existing Land Management Practices and Governance Systems

The literature reveals that land management practices are implemented through a combination of customary and statutory governance systems. Customary systems, which are prevalent in many rural communities, regulate land access, ownership, and use through traditional institutions, while statutory systems provide formal legal and administrative frameworks for land allocation, registration, and development control (Alden Wily, 2018; Williamson et al., 2010). In Nigeria, land administration is largely guided by the Land Use Act of 1978, which provides the legal basis for land allocation and management. However, studies indicate that challenges such as bureaucratic procedures, weak enforcement, poor coordination among institutions, and limited integration

https://doi.org/10.5281/zenodo.22829677

between customary and statutory systems often reduce the effectiveness of land governance (Adeniyi, 2016). These challenges frequently result in tenure insecurity, land disputes, and unsustainable land-use practices.

Discussion of Findings

The review shows that both customary and statutory systems play important roles in land management. However, weak coordination between these systems often creates governance gaps that affect effective land administration and sustainable land use. Strengthening the integration of formal and informal land governance structures is therefore essential for improving land management outcomes.

5.3 Community Participation and Sustainable Land Management

The literature consistently identifies community participation as a critical factor in achieving sustainable land management. Community participation involves the active involvement of local people in planning, decision-making, implementation, monitoring, and evaluation of land management initiatives (Pretty, 1995). Participatory approaches promote local ownership, improve compliance with land-use regulations, and enhance the sustainability of development interventions. Studies further show that local communities possess valuable indigenous knowledge relating to land use, soil conservation, water management, and environmental protection. Integrating this knowledge into formal land governance systems can improve the effectiveness of land management programmes and strengthen community commitment to environmental conservation (Ostrom, 1990). In contrast, top-down approaches often face challenges because they exclude local stakeholders from decision-making processes.

Collaborative governance arrangements involving government agencies, traditional institutions, community groups, civil society organisations, and the private sector have also been found to improve land management outcomes by encouraging stakeholder engagement, accountability, and collective responsibility (Ansell & Gash, 2008).

Discussion of Findings

The review indicates that community participation contributes significantly to sustainable land management by strengthening stakeholder engagement, promoting local ownership, and improving compliance with land-use policies and environmental regulations. Communities that actively participate in land management decisions are more likely to support and sustain conservation and development initiatives.

Implication for Framework Development

The findings establish community participation as the central pillar of the proposed framework. Therefore, stakeholder engagement, indigenous knowledge integration, participatory decision-making, and community monitoring are incorporated into the framework as essential mechanisms for promoting sustainable land management in Edo State.

5.4 Socio-Economic Determinants of Sustainable Land Management

The literature indicates that socio-economic factors significantly influence the adoption and effectiveness of sustainable land management practices. Key determinants include income level, education, occupation, access to credit, household assets, and livelihood opportunities (Knowler & Bradshaw, 2007; Pender et al., 2004). These factors affect the capacity of individuals and communities to invest in land improvement, adopt conservation measures, and participate in sustainable resource management initiatives. Studies show that households with higher incomes and better access to financial resources are more likely to adopt sustainable land management practices because they can afford the costs associated with land conservation, improved technologies, and environmental protection measures. Similarly, education enhances awareness of environmental issues and improves the ability of land users to understand and implement sustainable practices (Teklewold et al., 2013). Access to credit and livelihood diversification further strengthen the resilience of households and reduce pressure on land resources.

Poverty, low educational attainment, limited access to finance, and dependence on land-based livelihoods often contribute to unsustainable land-use practices, including deforestation, overgrazing, and land degradation. These socio-economic constraints can undermine efforts aimed at promoting sustainable land management and environmental sustainability.

https://doi.org/10.5281/zenodo.22829677

Discussion of Findings

The review demonstrates that socio-economic conditions play a crucial role in shaping land management decisions and practices. Improved education, income opportunities, access to credit, and livelihood diversification enhance the capacity of communities to adopt sustainable land management measures and contribute to long-term environmental sustainability.

Implication for Framework Development

The findings highlight the importance of socio-economic empowerment within the proposed framework. Components such as capacity building, environmental education, livelihood improvement, access to financial resources, and skills development are incorporated to strengthen community participation and support sustainable land management outcomes.

5.5 Institutional and Governance Factors Affecting Sustainable Land Management

The literature identifies institutional and governance factors as critical drivers of sustainable land management. Effective land governance provides the policies, regulations, administrative structures, and decision-making processes that guide access to land, land use, and resource management. Recent studies emphasize that secure land tenure, effective land administration, integrated land-use planning, and stakeholder participation are essential for achieving sustainable land management and environmental sustainability (FAO, 2024; UN-Habitat & FAO, 2022).

Land tenure security is particularly important because it encourages individuals and communities to invest in land improvement, conservation, and restoration activities. Conversely, insecure tenure rights often contribute to land degradation, conflicts, and unsustainable land-use practices. Secure and equitable access to land has been found to support sustainable livelihoods, food security, and long-term environmental stewardship (FAO, 2025; UNCCD & FAO, 2024). The literature also highlights the importance of institutional capacity, policy implementation, and multi-stakeholder collaboration. Weak institutional coordination, inadequate funding, poor enforcement of land-use regulations, and limited stakeholder involvement often undermine sustainable land management initiatives. Strengthening governance systems through participatory planning, institutional collaboration, and improved land administration can significantly enhance sustainable land management outcomes (FAO, 2024; FAO, 2026).

Discussion of Findings

The review demonstrates that strong institutions, secure land rights, effective policy implementation, and stakeholder collaboration are fundamental to sustainable land management. Weak governance structures often result in land-use conflicts, environmental degradation, and inefficient resource management, while effective governance promotes sustainable land use and environmental protection (FAO, 2025; UNCCD & FAO, 2024).

Implication for Framework Development

The findings suggest that land tenure security, institutional coordination, stakeholder participation, policy implementation, and regulatory enforcement should form key governance components of the proposed community-based framework for sustainable land management in Edo State (FAO, 2024; FAO, 2026).

5.6 Environmental Sustainability and Land Resource Management

Environmental sustainability is a fundamental component of sustainable land management because it ensures that land resources are used in ways that maintain their productivity and ecological functions for present and future generations. Sustainable land management promotes the conservation of soil, water, vegetation, and biodiversity while supporting economic development and human well-being (FAO, 2024; UNCCD, 2022). The literature identifies land degradation, deforestation, soil erosion, biodiversity loss, and climate change as major environmental challenges affecting land resources globally and in developing countries. These challenges reduce land productivity, threaten ecosystem services, and undermine livelihoods, particularly in communities that depend heavily on natural resources (IPCC, 2022; UNCCD, 2022). Rapid urbanisation, agricultural expansion, and unsustainable land-use practices have further intensified pressure on land resources and increased environmental vulnerability.

Studies emphasise that environmental sustainability can be enhanced through soil conservation, afforestation, watershed management, biodiversity protection, climate-smart agriculture, and ecosystem restoration initiatives. These approaches not only improve environmental quality but also strengthen resilience to climate change and support long-term land productivity (FAO, 2024; IPCC, 2022). Consequently, integrating environmental considerations into land-use planning and governance systems is essential for achieving sustainable development goals.

https://doi.org/10.5281/zenodo.22829677

Discussion of Findings

The review demonstrates that environmental sustainability is central to sustainable land management. Environmental degradation resulting from unsustainable land-use practices continues to threaten ecosystem health, agricultural productivity, and community livelihoods. The findings suggest that effective conservation measures and environmentally responsible land management practices are necessary for maintaining ecosystem services and ensuring long-term sustainability (UNCCD, 2022; FAO, 2024).

Implication for Framework Development

The findings indicate that environmental conservation should constitute a major pillar of the proposed community-based framework. Therefore, soil conservation, forest protection, biodiversity conservation, climate adaptation, and ecosystem restoration are incorporated into the framework as key strategies for promoting sustainable land management in Edo State (FAO, 2024; IPCC, 2022).

5.7 Proposed Community-Based Framework for Sustainable Land Management in Edo State

Based on the literature reviewed, a Community-Based Framework for Sustainable Land Management in Figure 8, is proposed for Edo State. The framework integrates five key components: community participation, land governance, institutional collaboration, socio-economic empowerment, and environmental sustainability. These components work together to promote sustainable land use, environmental protection, and improved livelihoods. Community participation serves as the foundation of the framework through stakeholder engagement, indigenous knowledge, participatory decision-making, and community monitoring. Effective land governance, including land tenure security, land-use planning, policy implementation, and regulatory enforcement, provides the institutional support necessary for sustainable land management. Institutional collaboration among government agencies, traditional institutions, civil society organisations, and the private sector strengthens coordination and resource mobilisation.

The framework also recognises the importance of socio-economic empowerment through education, capacity building, livelihood improvement, and access to financial resources. Environmental sustainability is promoted through soil conservation, forest protection, biodiversity

conservation, ecosystem restoration, and climate adaptation measures. Together, these elements contribute to improved land productivity, reduced land degradation, enhanced environmental quality, strengthened governance systems, and sustainable development.

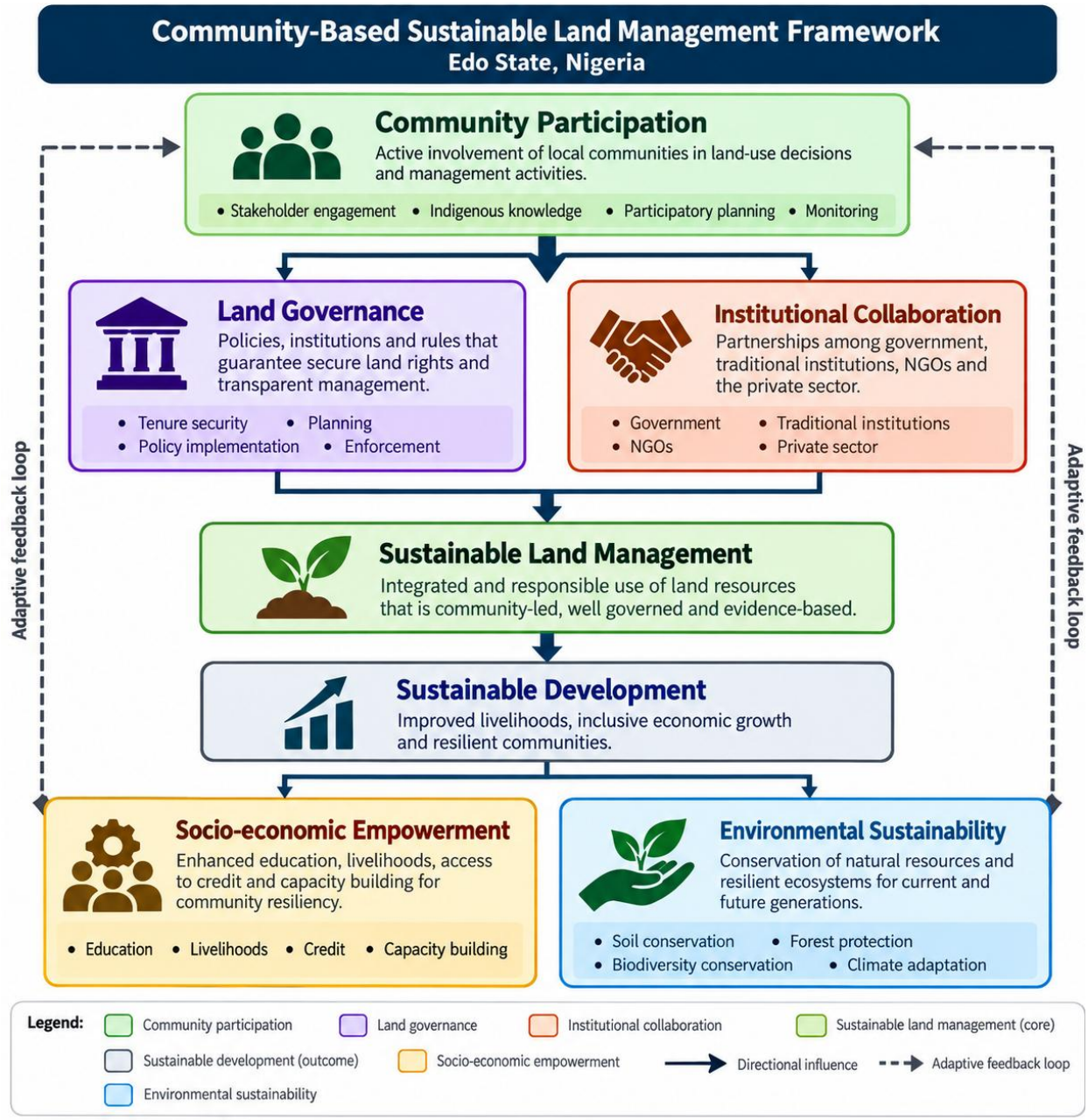


Figure 8: Community-Based Sustainable Land Management Framework for Edo State, Nigeria
Source**:** Author's Construct, 2026

https://doi.org/10.5281/zenodo.22829677

Discussion of Findings

The findings show that sustainable land management requires an integrated approach that combines governance, participation, socio-economic support, institutional cooperation, and environmental stewardship. The framework addresses the identified gaps by linking community participation and indigenous knowledge with formal land governance structures.

5.8 Conclusion and Recommendations

5.8.1 Conclusion

This study reviewed existing literature on sustainable land management and developed a community-based framework for sustainable land management in Edo State, Nigeria. The findings revealed that sustainable land management is influenced by several interconnected factors, including effective land governance, community participation, socio-economic conditions, institutional capacity, and environmental sustainability. The review further showed that weak land governance, inadequate stakeholder participation, limited institutional coordination, and environmental degradation remain major challenges to sustainable land management.

The study established that community participation is critical to achieving sustainable land management because it promotes local ownership, stakeholder engagement, and the integration of indigenous knowledge into land-use decision-making. It also highlighted the importance of secure land tenure, effective policy implementation, institutional collaboration, and environmental conservation in promoting sustainable land-use practices.

Based on these findings, the study proposed a community-based framework that integrates community participation, land governance, institutional collaboration, socio-economic empowerment, and environmental sustainability. The framework provides a practical approach for strengthening sustainable land management and supporting environmental sustainability in Edo State and similar contexts.

5.8.2 Recommendations

Based on the findings of the study, the following recommendations are proposed:

Government agencies should strengthen land governance systems through improved land-use planning, effective policy implementation, and the enforcement of land management regulations to ensure the sustainable use of land resources. Local communities should be actively involved in

land-use planning, decision-making, implementation, and monitoring processes, as their participation enhances ownership, accountability, and the long-term sustainability of land management initiatives. Furthermore, traditional institutions, government agencies, civil society organisations, and private-sector actors should collaborate more effectively to improve coordination, mobilise resources, and promote sustainable land management practices across different levels of governance.

In addition, capacity-building programmes, environmental education, and livelihood support initiatives should be implemented to enhance community participation and encourage the adoption of sustainable land-use practices. Policies and programmes should also promote secure land tenure and equitable access to land resources, thereby creating incentives for long-term investment in land conservation and sustainable management. Greater attention should be given to environmental conservation measures, including soil protection, afforestation, biodiversity conservation, watershed management, and climate adaptation strategies, to strengthen ecosystem resilience and environmental sustainability. Finally, future studies should focus on validating and operationalising the proposed framework using empirical data from communities within Edo State and other parts of Nigeria in order to assess its applicability, effectiveness, and potential for wider adoption in sustainable land management programmes.

5.9 Contribution to Knowledge

The framework provides a practical and context-specific model for promoting sustainable land management in Edo State and can serve as a guide for policymakers, land administrators, and development practitioners.

Reference

Alden Wily, L. (2018). *Collective land ownership in the 21st century: Overview of global trends*. *Land, 7*(2), 68. https://doi.org/10.3390/land7020068

Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory, 18*(4), 543–571. https://doi.org/10.1093/jopart/mum032

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

https://doi.org/10.5281/zenodo.22829677

Deininger, K., & Jin, S. (2006). Tenure security and land-related investment: Evidence from Ethiopia. *European Economic Review, 50*(5), 1245–1277. https://doi.org/10.1016/j.euroecorev.2005.02.001

Department for International Development (DFID). (1999). *Sustainable livelihoods guidance sheets*. Department for International Development.

Enemark, S., Bell, K. C., Lemmen, C. H. J., & McLaren, R. (2014). *Fit-for-purpose land administration*. International Federation of Surveyors (FIG).

Enemark, S., Williamson, I., & Wallace, J. (2005). Building modern land administration systems in developed economies. *Journal of Spatial Science, 50*(2), 51–68.

Food and Agriculture Organization (FAO). (1993). *Guidelines for land-use planning*. FAO.

Food and Agriculture Organization (FAO). (2012). *Voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security*. FAO.

Food and Agriculture Organization (FAO). (2024). *Land governance and planning*. FAO. https://www.fao.org

Intergovernmental Panel on Climate Change (IPCC). (2022). *Climate change 2022: Impacts, adaptation and vulnerability*. Cambridge University Press.

Kiyani, P., Andoh, J., Lee, Y., & Lee, D. K. (2017). Benefits and challenges of agroforestry adoption: A case of Musebeya Sector, Nyamagabe District in Southern Province of Rwanda. *Forest Science and Technology, 13*(4), 174–180.

Knowler, D., & Bradshaw, B. (2007). Farmers' adoption of conservation agriculture: A review and synthesis of recent research. *Food Policy, 32*(1), 25–48. https://doi.org/10.1016/j.foodpol.2006.01.003

Lockwood, M., Davidson, J., Curtis, A., Stratford, E., & Griffith, R. (2010). Governance principles for natural resource management. *Society and Natural Resources, 23*(10), 986–1001.

Millennium Ecosystem Assessment (MEA). (2005). *Ecosystems and human well-being: Synthesis*. Island Press.

Nkonya, E., Mirzabaev, A., & von Braun, J. (Eds.). (2016). *Economics of land degradation and improvement: A global assessment for sustainable development*. Springer International Publishing.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.

Pender, J., Place, F., & Ehui, S. (2004). Strategies for sustainable land management in the East African Highlands. *Environment, Development and Sustainability, 6*(1–2), 263–282. https://doi.org/10.1023/B:ENVI.0000003635.41338.65

Pretty, J. N. (1995). Participatory learning for sustainable agriculture. *World Development, 23*(8), 1247–1263. https://doi.org/10.1016/0305-750X(95)00046-F

Reed, M. S. (2008). Stakeholder participation for environmental management: A literature review. *Biological Conservation, 141*(10), 2417–2431.

Reed, M. S., Vella, S., Challies, E., De Vente, J., Frewer, L., Hohenwallner-Ries, D., ... & Van Delden, H. (2018). A theory of participation: What makes stakeholder and public engagement in environmental management work? *Restoration Ecology, 26*, S7–S17.

Smyth, A. J., & Dumanski, J. (1995). *A framework for evaluating sustainable land management*. World Soil Resources Report No. 73. FAO.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Teklewold, H., Kassie, M., & Shiferaw, B. (2013). Adoption of multiple sustainable agricultural practices in rural Ethiopia. *Agricultural Economics, 44*(6), 597–623. https://doi.org/10.1111/agec.12011

United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations.

United Nations Convention to Combat Desertification (UNCCD). (2022). *Global land outlook 2: Land restoration for recovery and resilience*. UNCCD.

United Nations Human Settlements Programme (UN-Habitat), & Food and Agriculture Organization (FAO). (2022). *Land tenure and sustainable agri-food systems*. UN-Habitat and FAO.

Williamson, I. P., Enemark, S., Wallace, J., & Rajabifard, A. (2010). *Land administration for sustainable development*. ESRI Press and Lincoln Institute of Land Policy.

https://doi.org/10.5281/zenodo.22829677