National Policy on Environment and Community Participation in Agriculture and Food Production in Benue State

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Abstract
This study explores the relationship between Nigeria's 2016 Revised National Policy on Environment and community participation in agriculture and food production, focusing on Benue State. Benue state plays a vital role in Nigeria's food security, yet it faces significant environmental challenges, including climate change, deforestation, soil degradation, and water management issues. These environmental threats have adversely affected agricultural productivity and the livelihoods of rural communities. The objectives of the study include, to examine the national policy on the environment in relation to agriculture, to assess the level of community participation in agriculture in Benue State. This study employs a qualitative research design with a case study approach, focusing on Vandeikya and Makurdi Local Government Areas (LGAs). Primary data were collected through semi-structured interviews with stakeholders, focus group discussions (FGDs) with farmers and cooperatives, and field observations. Secondary data sources included policy documents, academic literature, and reports from initiatives like the Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) project. Thematic analysis was applied to categorize findings and identify policy gaps in agricultural sustainability. The research highlights weak institutional coordination, inadequate funding, land tenure insecurity, and limited community engagement as major barriers to policy implementation. Sustainable Development Theory and Participatory Development Theory guide the study, emphasizing the importance of integrating local communities in decision-making processes for effective resource management. The key findings underscore the need for strengthening institutional frameworks, increasing funding for environmental programs, addressing land tenure issues, and developing robust monitoring systems. This study underscores the need for a multi-stakeholder approach to ensure the successful implementation of the national policy on environment, improve agricultural resilience, and secure food production for future generations.
Key words: Agriculture, Community Participation, Environment, Food Production.

Introduction

Agriculture plays a vital role in the economic development and food security of Nigeria, with Benue State standing out as a key contributor. Known as the "Food Basket of the Nation," Benue State is renowned for its fertile land and favorable climate, which support the cultivation of various crops, including yam, cassava, rice, maize, sesame, and citrus fruits (Onyeneke, Olayide, Tasie, Emenekwe, Enyikwola, Hilakaan & Mbakigighir,2023). The majority of the population in the state depends on agriculture as a primary source of livelihood, with small-scale farming forming the backbone of food production (Jeffrey, Lin, Hu, Yu, Fabien & Tingting, 2022).

Despite its agricultural potential, Benue State faces several challenges that hinder optimal productivity. Environmental degradation, climate change, soil erosion, deforestation, and inconsistent rainfall patterns have negatively impacted agricultural activities (Adamaagashi, Obinna, Jennifer, Ogar, Abdulhameed, 2023). In addition, the lack of adequate infrastructure, limited access to modern farming technology, and weak policy implementation have constrained the state's agricultural growth (Izuogu, Olaolu, Azuamairo, Njoku, Kadurumba & Agou, 2023).

The role of national policy on the environment in promoting sustainable agricultural practices cannot be overemphasized. This policyis designed to protect natural resources while improving agricultural productivity (Federal Ministry of Environment, 2018). However, for this policy to be effective, community participation is crucial.

Community involvement ensures the adoption of environmentally friendly practices, enhances local ownership of agricultural projects, and promotes sustainability (Akinyele & Ojo, 2020).This study focuses on exploring the relationship between national policy on environment policy (2016) and community participation in agriculture and food production in Benue State. It highlights the extent to which this policy is implemented and examines how community engagement can enhance food security and environmental sustainability in the region.

Statement of the Problem

Benue State possesses enormous agricultural potential. However, despite its abundant natural resources and favorable agricultural conditions, the state continues to grapple with various environmental challenges that threaten food production. Climate change, deforestation, soil erosion, and poor water management are some of the critical environmental issues affecting agriculture in the region (Addamaagashi, et al., 2023). Erratic rainfall patterns and rising temperatures have further exacerbated the situation, resulting in decreased crop yields and increased vulnerability

of farmers (World Bank, 2019). These environmental challenges pose a significant threat to the sustainability of agriculture and food security in Benue State.

Furthermore, community participation in agricultural and environmental management remains limited due to several policy gaps and socio-economic factors. The national policy on environment (2016)is yet to be fully adapted or implemented even at the local level, leading to weak engagement of rural communities in decision-making processes (Akinyele & Ojo, 2020). Socio-economic challenges such as poverty, low literacy levels, inadequate infrastructure, and lack of access to credit facilities further hinder the active participation of community members in agricultural initiatives.

The combination of environmental degradation and inadequate community engagement has significantly affected agricultural productivity and the overall well-being of rural communities in Benue State. Addressing these issues requires a comprehensive review of national policy on environment (2016)and strategies to enhance community participation, promote sustainable agricultural practices, and improve food production in the state.

Objective of the Study

I. To examine the national policy on the environment in relation to agriculture.
ii. To assess the level of community participation in agriculture in Benue State.
iii. To explore the impact of national policy on environment on food production in the region.
iv. To identify challenges and solutions.

Research Questions

I. What are the key national environmental policies related to agriculture?
ii. How does community participation influence food production in Benue State?
iii. What challenges hinder the effective implementation of national policy on environment?

Methodology

This study employs a qualitative research design, utilizing a case study approach focused on Vandeikya and Makurdi Local Government Areas (LGAs) in Benue State, Nigeria. Primary data collection involved semi-structured interviews with key stakeholders, focus group discussions (FGDs) with farmers and cooperative members, and field observations to

assess environmental policy implementation and community participation. Secondary data sources included policy documents, academic literature, and reports from initiatives like the Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) project. Thematic analysis was used to categorize qualitative data into key themes, identifying policy gaps and agricultural sustainability challenges. Ethical considerations were upheld through informed consent and participant confidentiality. Limitations include the study's focus on only two LGAs, reliance on qualitative data, and restricted access to certain government reports. Despite these constraints, the research provides critical insights into the role of environmental policies in agriculture and the importance of community engagement in policy execution.

Theoretical Framework

In this study, two key theories provide the foundation for understanding the relationship between national policy on environment, community participation, and agriculture in Benue State: Sustainable Development Theory and Participatory Development Theory. These theories offer insights into how environmental sustainability and community engagement can enhance agricultural productivity and promote food security.

The concept of sustainable development was popularized by the Brundtland Commission in 1987 in its report titled *Our Common Future*. While the commission did not originate the idea, it formalized and provided a globally accepted definition of sustainable development. Sustainable Development Theory focuses on meeting the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission, 1987). The theory emphasizes a balance among economic growth, environmental protection, and social inclusion. According to this theory, development should be pursued in a way that ensures the long-term sustainability of natural resources, particularly in agriculture, where environmental degradation can directly affect food production and livelihoods.

In the context of Benue State, Sustainable Development Theory highlights the importance of implementing environmental policies that protect the natural environment while ensuring continuous agricultural production. The degradation of soil, forests, and water resources poses a threat to agricultural sustainability. Therefore, the adoption of environmentally sustainable practices and policies is essential to maintaining the state's position as a leading food producer. Policies that promote afforestation, soil conservation, and climate-smart agriculture align with this theory, ensuring that current agricultural activities do not deplete resources for future generations.

Participatory Development Theory was developed by Paulo Freire in 1970 and further expanded by scholars such as Robert Chambers in the 1980s and 1990s. Participatory Development Theory emphasizes the active involvement of local communities in the planning, implementation, and evaluation of development projects (Freire, 1970; Chambers, 1983). This theory argues that sustainable development can only be achieved when communities take ownership of projects and actively contribute to decision-making processes. It focuses on empowering individuals by integrating local knowledge, fostering collaboration, and promoting inclusivity.

In relation to agriculture and environmental policies in Benue State, Participatory Development Theory underscores the need for community engagement in the formulation and implementation of policies. Community participation ensures that agricultural initiatives are relevant to local needs and sustainable in the long run. When community members are involved in decisions about resource management, they are more likely to adopt environmentally friendly practices and support policies aimed at improving food production.

By applying Participatory Development Theory, this study highlights the importance of integrating rural farmers and local stakeholders into agricultural programs and environmental policy discussions. Doing so can help address socio-economic barriers, promote local ownership, and improve policy outcomes.

Conceptual Framework

The conceptual framework for this study is built around four key concepts: Environment, Community Participation, Agriculture, and Food Production. These concepts are crucial in understanding the relationship between national policy on environment (2016) and community involvement in enhancing agricultural activities and food security in communities in Vandeikya and Makurdi local governments in Benue State.

Environment

The environment refers to the physical, chemical, and biological conditions that surround and influence human life and activities (UNEP, 2018). It encompasses both natural and human-made elements, including air, water, land, flora, fauna, and other natural resources that sustain life on earth. The environment plays a crucial role in supporting human activities, particularly agriculture, which depends on natural resources for food production and economic sustenance (World Bank, 2020).

In agriculture, the environment provides essential resources such as fertile soil, water, and a suitable climate for crop cultivation. However, increasing environmental degradation poses a severe threat to sustainable agricultural practices in many regions, including Benue State. Environmental degradation results from activities such as deforestation, overgrazing, pollution, and poor agricultural practices, which contribute to soil erosion, declining fertility, and loss of biodiversity (Nwafor et al., 2020). These environmental changes not only reduce agricultural productivity but also affect the availability of clean water and degrade the ecosystems that farmers rely on for survival (Food and Agriculture Organization (FAO, 2020).

In Benue State, environmental challenges have become a significant concern for the agricultural sector. Deforestation, driven by the expansion of farmlands and the demand for fuelwood, has resulted in the loss of forest cover, making the land more prone to erosion and reducing its fertility (Adejuwon, 2018). Soil erosion, particularly in hilly areas such as Vandeikya, washes away the topsoil needed for crop growth, reducing agricultural yields. Additionally, climate change has led to unpredictable rainfall patterns, increased droughts, and flooding in some areas such as in Makurdi local government among others, further threatening food security ((Adamaagashi, et al.,2023).

To address these challenges, there is a need for the policyto promote sustainable environmental management practices in agriculture. Policies encouraging afforestation, conservation agriculture, and integrated water management can help protect the environment and ensure the sustainability of agricultural activities in Benue State. Community participation in implementing such policies is essential for success, as it ensures that farmers adopt practices that protect the environment while enhancing productivity.

Community Participation

Community participation refers to the active involvement of individuals, groups, and communities in the planning, implementation, and evaluation of policies, projects, and programs that affect their lives (Chambers, 1983).It is a key component of participatory development, emphasizing a bottom-up approach rather than a top-down one. This approach ensures that development initiatives are people-centered and address the specific needs of communities. Effective community participation fosters a sense of ownership, responsibility, and accountability, which is critical for the long-term success of development programs (Arnstein, 1969).

In the context of agricultural development and environmental management, community participation is essential for promoting sustainable practices. Farmers and local communities possess valuable indigenous knowledge about their environment, crops, and climate

patterns. When incorporated into policy formulation and program implementation, this knowledge can lead to more practical, cost-effective, and sustainable solutions (Pretty, 1996). Community engagement also ensures that agricultural projects reflect local realities, making them more acceptable and easier to implement.

In Benue State, community participation in agricultural and environmental projects is crucial for addressing the region's challenges, such as soil erosion, deforestation, and climate change. Unfortunately, participation remains limited due to socio-economic factors, such as poverty, limited education, and weak institutional frameworks (Akinyele & Ojo, 2020). Bridging this gap requires that the policy empower rural communities, build capacity, and encourage active involvement in the management of agricultural resources and environmental conservation programs.

Agriculture

Agriculture is the science, art, and practice of cultivating crops, raising livestock, and managing natural resources for food, fiber, and other products essential for human survival (FAO, 2019). It is a crucial sector in most economies, particularly in developing regions like Nigeria. In Benue State, agriculture forms the backbone of the economy, contributing significantly to employment, income generation, and food security.

Benue State's agricultural activities are highly diversified, with the cultivation of staple crops such as yam, cassava, rice, maize, and millet alongside cash crops like soybeans, sesame, and citrus fruits (Ogundele & Okoruwa, 2020). Livestock farming is also common, with cattle, goats, sheep, and poultry providing an additional source of income for farmers.

However, agriculture in Benue State is heavily dependent on the natural environment, making it vulnerable to environmental changes and degradation. Poor agricultural practices, deforestation, and climate change have resulted in declining soil fertility, water shortages, and unpredictable weather patterns, which threaten agricultural productivity (Adamaagashi, et al., 2023).

Agriculture interacts with the environment in multiple ways. While it depends on natural resources like soil, water, and air, it can also lead to environmental degradation if not managed sustainably. For instance, practices such as slash-and-burn farming, overgrazing, and excessive pesticide use can reduce biodiversity, deplete soil nutrients, and contaminate water resources. On the other hand, sustainable practices like crop rotation, agroforestry, and organic farming help protect the environment while enhancing productivity.

This study, agriculture is analyzed not only as a means of food production but also as an activity that interacts with the environment and can either promote or undermine sustainability based on the policies and practices adopted. The successful implementation of environmental policies in agriculture requires the active participation of local communities and stakeholders to ensure that both productivity and resource conservation goals are met.

Food Production

Food production refers to the process of cultivating crops and raising livestock to produce food for consumption and trade. It includes all stages of food supply, from planting and harvesting to processing and distribution (World Bank, 2020). In Benue State, food production is essential for ensuring food security and economic stability. However, it is highly sensitive to environmental changes and policy interventions. Ensuring sustainable food production requires effective environmental policies and active community engagement to overcome challenges such as climate change and resource depletion.

National Policy on Environment and Agriculture

Environmental policies in Nigeria have evolved in response to growing concerns about environmental degradation and the need to promote sustainable development. The policies aim to address environmental challenges such as deforestation, desertification, soil erosion, pollution, and climate change, with particular emphasis on sectors like agriculture that heavily rely on natural resources. This section provides an overview of the historical development of environmental policies in Nigeria and highlights specific policies relevant to agriculture and food production.

Environmental management in Nigeria has undergone several phases, evolving from colonial-era resource exploitation practices to more comprehensive policies aimed at sustainable development. Early attempts at environmental regulation were primarily focused on forestry, wildlife conservation, and water management. However, growing environmental problems in the 1970s and 1980s, particularly related to oil spills, deforestation, and desertification, prompted the Nigerian government to adopt a more structured approach.

- 1979: The first significant environmental policy initiative was included in the Fourth National Development Plan, which addressed deforestation, erosion, and water resource management.
- 1988: Following a toxic waste dumping incident in Koko, Delta State, Nigeria established the Federal Environmental Protection Agency (FEPA) to oversee environmental protection and management.

- 1999/2016: The National Policy on the Environment was adopted to provide a comprehensive framework for managing Nigeria's environment and promoting sustainable development. This policy emphasizes soil conservation, water management, pollution control, and biodiversity protection.
- 2007: The National Environmental Standards and Regulations Enforcement Agency (NESREA) replaced FEPA to strengthen the enforcement of environmental laws and regulations. (source, researcher's compilation)

The evolution of environmental policies in Nigeria reflects the country's growing awareness of the importance of sustainable development and the need to address environmental issues that directly impact agricultural productivity and food security.

Several national policies and programs specifically target the agricultural sector, aiming to promote sustainable practices while addressing environmental challenges.

1. **National Policy on Agriculture (2001)**: This policy emphasizes sustainable agricultural development, improved food security, and the protection of natural resources. It advocates for the adoption of modern farming practices, soil fertility management, and the diversification of agricultural production.
2. **National Climate Change Policy (2012):** Given the increasing impact of climate change on agriculture, this policy focuses on climate adaptation and mitigation strategies. It promotes climate-smart agriculture, improved water resource management, and early warning systems to reduce the risks associated with extreme weather events.
3. **Agricultural Transformation Agenda (ATA) (2011-2015):** Launched to modernize the agricultural sector and enhance productivity, the ATA incorporated environmental sustainability into its programs. It encouraged the adoption of climate-resilient crops, agroforestry, and sustainable land management practices.
4. **National Water Policy (2004):** This policy addresses water resource management, particularly for irrigation and agricultural purposes. It aims to ensure the sustainable use of water resources while minimizing the environmental impact of irrigation practices.
5. **National Action Programme to Combat Desertification (NAP, 2001):** This program focuses on addressing land degradation and desertification, particularly in northern Nigeria. Its strategies include afforestation, soil conservation, and promoting sustainable agricultural practices to protect vulnerable ecosystems. (researchers' compilation).

Environmental and Agricultural Policies in Benue State

Benue State, known as the "Food Basket of the Nation," plays a critical role in Nigeria's agricultural sector. Its fertile land and favorable climate support the cultivation of major crops like yam, cassava, rice, and citrus fruits. However, the state faces several environmental challenges, including soil erosion, deforestation, and the adverse effects of climate change, which threaten agricultural productivity (Agada & Igbawua, 2016). To address these issues, the Benue State government adapts national policies on the environment and agriculture to meet the state's unique needs while ensuring sustainable development.

The adaptation of the 2016 Revised National Policy on the Environment at the state level in Benue is a crucial step toward addressing environmental challenges and ensuring sustainable agricultural development. The policy provides a comprehensive framework for tackling issues such as climate change, deforestation, soil degradation, and water resource management, all of which directly affect agriculture and food production in the state (Federal Ministry of Environment, 2016).

Benue State has adopted several aspects of the revised policy by incorporating them into state-specific strategies and programs. For example, the state government has localized the policy's provisions on sustainable land management and erosion control to address the widespread gully erosion affecting communities in Guma, Ukum, and Konshisha Local Government Areas (Ogbu, Onah, & Uka, 2018). Through partnerships with the Nigeria Erosion and Watershed Management Project (NEWMAP), the state government works on rehabilitating degraded land and promoting sustainable farming practices that align with national policy objectives.

In the area of climate change adaptation, the Benue State Ministry of Agriculture collaborates with national bodies like the Federal Ministry of Environment to promote climate-resilient agriculture. This includes encouraging farmers to adopt drought-tolerant crop varieties and improved irrigation systems. Programs such as the Fadama III Additional Financing Project have helped implement the policy's goals by empowering local farmers with the tools and knowledge needed to adapt to changing environmental conditions (Ibrahim & Audu, 2020).

Additionally, the sustainable water management provisions of the 2016 policy have been adapted in Benue to promote water conservation and irrigation development. In areas prone to seasonal droughts, the state government has introduced small-scale irrigation systems and rainwater harvesting initiatives to ensure a consistent water supply for farming activities. These efforts align with the national policy's emphasis on protecting freshwater resources and enhancing water access for agricultural production.

Role of the Benue State Government in Policy Implementation

The Benue State government plays a significant role in translating the 2016 Revised National Policy on the Environment into actionable plans at the state level. This role is critical in addressing environmental challenges that affect agriculture, improving climate resilience, and promoting sustainable natural resource management. One of the most impactful initiatives in this regard is the Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) project, funded by the World Bank. The state government collaborates with various partners and communities to implement activities that restore degraded lands, improve water management, support climate-smart agriculture, and strengthen business ventures for rural development.

A central component of policy implementation in Benue State is the restoration of degraded land and the protection of watersheds. The ACReSAL project focuses on rehabilitating erosion-prone areas and restoring watersheds in several local communities. One prominent example is the watershed restoration project in Ute, Mbagbera, and Mbayongo communities, where significant investments have been made to dig boreholes and reduce the risk of flooding and soil erosion. These efforts have improved water availability for farming activities while protecting nearby farmland from degradation. To complement these activities, the state government promotes small-scale irrigation systems and rainwater harvesting, helping farmers cope with seasonal droughts and ensuring a reliable water supply for agriculture. By restoring degraded landscapes and improving water management, these interventions help secure the livelihoods of thousands of rural farmers.

The Benue State government, through ACReSAL, promotes climate-smart crop production to reduce the impact of climate change on agriculture. Farmers in the state have been trained on adopting drought-tolerant crop varieties, agroforestry systems, and conservation agriculture. These practices help improve soil fertility, reduce water loss, and protect crops against extreme weather events. Support for processing, marketing, and storage facilities is another key aspect of this initiative. The state government and ACReSAL have facilitated the establishment of modern storage units and processing centers in selected communities, enabling farmers to reduce post-harvest losses and improve the quality of their produce. These interventions have also opened up new marketing opportunities for farmers, linking them to broader markets and improving their income through Community Revolving Fund(ACReSAL, 2024).

In line with the national policy's emphasis on rural economic empowerment, the Benue State government, through ACReSAL, supports community-based business ventures by providing access to loans and financial services. Farmer groups and cooperative societies in communities such as Ute, Mbagbera, Mbayongo in Vandeiky, and Wadata, Wurukum, North Bank and Adekein Makudi have benefited

from capacity-building workshops and financial literacy programs designed to improve their business management skills.
These groups are encouraged to engage in group business ventures, including seed production, agro-processing, and marketing. By working together, these community groups can leverage resources, access credit facilities, and expand their operations. For example, women-led cooperatives in Mbayongo have successfully developed processing and marketing businesses for cassava and rice, improving the economic standing of their communities through Community Revolving Fund (introduced by ACReSAL and monitored by Ministry of Water Resources and Environment).

The Benue State government ensures that the implementation of environmental and agricultural policies is community-driven. Local communities are involved in decision-making processes, particularly in the design and execution of projects. Through ACReSAL, community leaders, youth groups, and women's organizations have been engaged in activities such as afforestation, soil conservation, and watershed management.

Training programs and workshops have also been organized to strengthen community capacity in climate resilience, business development, and natural resource management. These capacity-building efforts empower communities to take ownership of projects and ensure their sustainability beyond the project cycle (Ministry of Water Resources and Environment, 2024).

Community participation is central to agricultural development and environmental sustainability in Benue State. It ensures that local farmers, cooperatives, women, and youth are involved in decision-making processes, contributing to more sustainable agricultural practices and enhanced livelihoods (FAO, 2019). The government, in collaboration with programs like ACReSAL, encourages active community engagement to promote climate-resilient agriculture, improved market access, and resource management. Community participation in Benue State is manifested through various forms, including cooperative societies, traditional farming systems, and women and youth involvement. Cooperative societies are one of the most effective mechanisms for community participation in Benue State's agricultural sector. They enable farmers to pool resources, access credit, and improve their collective bargaining power in markets (Onje, 2018). These societies also facilitate the dissemination of new farming techniques and access to government and donor support programs.

Through ACReSAL, several cooperative societies in Benue State have received financial and technical support. For example, the Ute Cassava Farmers' Cooperative Society has benefited from training on climate-smart agriculture and access to improved cassava varieties,

which have significantly boosted production and income levels. Similarly, Mbagbera Women's Cooperative has expanded its rice production and marketing activities, thanks to loans provided through ACReSAL.

Traditional farming systems, rooted in the cultural practices of the Tiv, Idoma, and Igede people, emphasize communal resource management through mixed cropping, shifting cultivation, and rotational farming (Akor, 2017). These practices have sustained local communities for generations, but they are increasingly under threat due to climate change and environmental degradation.In response, the government and ACReSAL are integrating traditional practices with modern climate-smart agriculture to ensure sustainable land use. For instance, communities in Mbayongo have adopted agroforestry techniques that combine traditional knowledge with tree planting and soil conservation practices to reduce erosion and improve soil fertility.

Women and youth are key actors in agriculture and environmental conservation in Benue State. Women are particularly involved in cultivation, processing, and marketing of staple crops like cassava, yam, and vegetables (FAO, 2019). Despite their crucial role, women often face constraints such as limited access to land, credit, and extension services (Onje, 2018).To address these challenges, ACReSAL prioritizes gender inclusion and youth empowerment by providing targeted support. For example, the Mbayongo Women's Farming Group has received financial and technical assistance to establish poultry farming and cassava processing units. Youth groups in Vandeikya have been trained in mechanized farming and small-scale irrigation techniques to improve productivity and diversify income sources.

Youth involvement has expanded beyond traditional farming, with many young people participating in agro-processing and digital marketing, linking rural farmers to urban markets. This diversification reduces rural-urban migration and provides alternative livelihoods for young people in agriculture.

Benefits of Community Participation

Community participation in agriculture offers numerous benefits, particularly in rural areas of Benue State. By engaging local farmers, cooperative societies, women, and youth, these initiatives improve productivity and strengthen resilience to environmental and economic challenges. Some of the major benefits include: Community participation leads to increased food production by encouraging the adoption of improved farming practices and technologies. Cooperative societies provide farmers with access to modern inputs such as improved seeds, fertilizers, and training on climate-smart agriculture. For instance, farmers participating in ACReSAL initiatives in Ute and Mbagbera have

reported increased yields in crops such as cassava, yam, and rice due to access to improved varieties and irrigation systems.

Moreover, community engagement facilitates knowledge sharing among farmers, enabling them to apply more effective practices, reduce post-harvest losses, and enhance overall productivity. These efforts help address food insecurity and improve livelihoods across the state. Involving communities in agricultural projects helps preserve local knowledge and promote sustainable use of natural resources. Traditional farming practices in Benue State, such as mixed cropping and agro forestry, are often passed down through generations and adapted to local environmental conditions (Akor, 2017). Integrating this indigenous knowledge with modern techniques ensures that local ecosystems are preserved while enhancing productivity.

Community-driven resource management also supports environmental conservation, such as watershed restoration efforts in Mbayongo, which have reduced erosion and improved water availability for farming activities. Community participation creates opportunities for economic empowerment by providing access to credit, training, and market linkages. Programs like ACReSAL strengthen community-based businesses, particularly through cooperative societies and women-led enterprises. For example, Mbagbera Women's Cooperative has significantly improved its processing and marketing of rice, increasing members' income and reducing rural poverty. Youth participation in agro-processing and digital marketing has further expanded employment opportunities, reducing the trend of rural-urban migration. Strengthening these community-driven initiatives ultimately promotes inclusive economic growth and rural development.

Challenges to Community Participation

Despite its numerous benefits, community participation in agriculture in Benue State faces significant challenges that hinder its full potential. Addressing these barriers is essential for achieving long-term agricultural and environmental sustainability. One of the major constraints to community participation is the lack of adequate infrastructure and funding. Rural areas in Benue State often suffer from poor road networks, inadequate storage facilities, and limited access to irrigation systems. These issues reduce farmers' access to markets and expose them to post-harvest losses (Onje, 2018).

Additionally, although programs like ACReSAL provide critical financial and project support, many community groups still lack sufficient funds to expand their activities and invest in modern farming technologies. Dependence on donor-funded programs also raises concerns about the sustainability of such initiatives once external support is withdrawn.

Land ownership and tenure insecurity remain significant challenges for farmers in Benue State. Women and youth are particularly affected by customary land tenure systems that limit their access to farmland (Akor, 2017). Without secure land tenure, farmers are often reluctant to invest in long-term improvements such as soil conservation or tree planting. These issues are further complicated by disputes over communal land, particularly in areas prone to population pressure and land degradation. Resolving land ownership challenges is crucial for promoting inclusive participation and sustainable resource management.

Policy inconsistencies at the national and state levels pose another challenge to effective community participation. While the 2016 National Policy on Environment provides a comprehensive framework for environmental sustainability, gaps in implementation and coordination between federal and state agencies often hinder progress (Federal Ministry of Environment, 2016). For example, some communities in Benue State apart from the mentioned communities in Vandeikya and Makurdi local governments in Benue state have experienced delays in receiving support under government programs due to overlapping mandates and bureaucratic bottlenecks. Streamlining policies and ensuring that they align with community needs will help promote greater participation and sustainability.

Environmental Impact on Agriculture and Food Production

The environment plays a significant role in agricultural activities, particularly in a state like Benue. However, various environmental challenges such as climate change, soil degradation, deforestation, and water management issues-pose serious threats to agriculture and food security. Understanding these challenges is critical for developing sustainable solutions and safeguarding the livelihoods of the population.

Climate change has emerged as a major environmental challenge affecting agriculture in Benue State. Unpredictable rainfall patterns, rising temperatures, and extreme weather events—such as floods and droughts—disrupt planting seasons and reduce crop yields (Adamaagashi, et al., 2023).

- **Rainfall variability** affects major crops such as yam, cassava, and maize, which are highly sensitive to water availability. Prolonged dry spells can lead to severe drought, while excessive rainfall can cause flooding, damaging crops and farmland.
- **Increased temperatures** have led to the proliferation of pests and diseases, further reducing crop productivity. For instance, cassava mosaic disease and maize stem borers have become more prevalent in recent years due to changing weather conditions (FAO, 2020).

Efforts by ACReSAL to promote climate-smart agriculture—such as the use of drought-tolerant crop varieties and improved irrigation

systems—are helping farmers in Ute and Mbayongo adapt to these challenges. However, more needs to be done to strengthen resilience across the state.

Soil degradation and deforestation are significant environmental challenges that reduce agricultural productivity in Benue State.

- Soil erosion and nutrient depletion have affected large areas of farmland, in Vandeikya, Katsina-Ala, and Gboko among others. Continuous cropping without adequate soil management practices has led to declining soil fertility, making it difficult for farmers to achieve good yields (Akor, 2017).
- Deforestation, driven by the demand for farmland, fuelwood, and construction materials, has further worsened the problem. Forests that once protected watersheds and provided critical ecosystem services have been cleared, leading to increased erosion and loss of biodiversity.

To combat these issues, the Benue State government and ACReSAL are supporting reforestation efforts and promoting sustainable land management practices. Community-led watershed management programs in Mbagbera have shown promising results in restoring degraded land and improving soil health.

Water Management Issues

Water is a critical resource for agriculture, yet water management remains a significant challenge in Benue State. The Katsina-Ala through Buruku down to Makurdi rivers are vital sources of irrigation water, but erratic rainfall and poor water infrastructure limit their effective use.

- **Flooding** during the rainy season often damages crops, while water shortages during the dry season reduce productivity.
- Poorly maintained irrigation systems and lack of water harvesting facilities exacerbate the problem, leaving many farmers dependent on unreliable rain-fed agriculture.

Through ACReSAL's watershed management projects, communities in Ute and Mbayongo have benefited from improved irrigation infrastructure and training on water conservation practices. These efforts help reduce water wastage and ensure a more reliable water supply for crop production.

Impact on Food Security in Benue State

The combined effects of climate change, soil degradation, deforestation, and water management issues pose a serious threat to food security in Benue State.

- **Reduced agricultural productivity** limits the availability of staple foods, leading to higher food prices and increased vulnerability for low-income households.

- **Nutritional insecurity** is also a growing concern, particularly for children and pregnant women, who rely on locally produced foods for their daily nutritional needs (FAO, 2019).
- **Livelihood disruptions** force many rural families to migrate to urban areas in search of alternative income sources, further stressing urban infrastructure and reducing the rural labor force.

Efforts to improve food security must focus on strengthening resilience through sustainable farming practices, improved water management, and better integration of climate adaptation strategies. Programs like ACReSAL play a critical role in mitigating these environmental impacts and promoting long-term food security.

Policy Gaps and Recommendations

Effective policies play a crucial role in addressing the environmental challenges that impact agriculture and food production in Benue State. However, despite the presence of the National Policy on Environment (2016) and other related frameworks, there are notable gaps in implementation that hinder their full potential. One of the major gaps in policy implementation is the lack of coordination between federal, state, and local agencies. This results in overlapping roles, inefficient resource allocation, and delays in program delivery (Oni, 2019). For example, while the National Policy on Environment promotes sustainable agricultural practices, the translation of these policies at the state level has been inconsistent due to inadequate communication between agencies.

Insufficient funding has been a recurring issue in the implementation of environmental and agricultural policies in Benue State. Most programs rely heavily on donor funding, such as the ACReSAL initiative supported by the World Bank. While these programs have made significant contributions, limited state funding raises concerns about the sustainability of such interventions once external support is withdrawn. Despite efforts to promote community participation, many rural communities remain unaware of existing environmental policies and programs. This lack of awareness hinders their ability to benefit from initiatives aimed at improving agricultural productivity and environmental sustainability (Akor, 2017). Furthermore, the exclusion of key stakeholders-especially women and youth-in decision-making processes reduces the effectiveness of these policies.

Land tenure insecurity is another critical gap that affects the implementation of agricultural and environmental policies. Women and youth often face barriers in accessing land, limiting their capacity to participate in and benefit from agricultural programs. This challenge is further complicated by communal land disputes and unclear land ownership laws.

The absence of robust monitoring and evaluation (M&E) systems makes it difficult to assess the effectiveness of policy implementation. As a result, this policy is unable to track progress, identify challenges, or adjust strategies in real time. This gap reduces accountability and weakens the overall impact of the policy.

Recommendations for Policy Improvement

Establishing a more cohesive framework for collaboration between federal, state, and local agencies is essential for effective policy implementation. The Benue State government should set up a multi-stakeholder task force that includes representatives from government agencies, civil society organizations, community leaders, and the private sector to ensure coordinated action. Sustainable financing mechanisms should be developed to reduce dependence on external funding. The Benue State government should allocate more resources to environmental and agricultural programs through public-private partnerships (PPPs) and climate finance initiatives. This will ensure that key projects like watershed restoration in all local governments and not only in Makudi and Vandeikya Local Governments in Benue State and climate-smart agriculture can start and continue beyond donor support.

Community participation must be prioritized at all stages of policy implementation. The government should conduct awareness campaigns and provide capacity-building workshops to educate communities on sustainable agricultural practices, climate change adaptation, and available policy interventions. Special attention should be given to empowering women and youth by ensuring they have access to land, credit, and training opportunities. The government should implement land reform policies that provide secure land tenure for farmers, particularly women and youth. Establishing community-based land dispute resolution committees can help reduce conflicts and ensure fair access to land. This will encourage farmers to invest in long-term improvements such as soil conservation and agro forestry.

A comprehensive monitoring and evaluation framework should be established to track the progress of policy implementation and assess its impact. This should include periodic reviews, community feedback mechanisms, and data-driven decision-making processes to improve accountability and ensure that policies remain relevant to local needs.

Conclusion

Agriculture and environmental sustainability are inextricably linked in Benue State, where the livelihoods of most residents depend on natural resources. While policies like the National Policy on Environment (2016) aim to promote sustainable development, gaps in implementation, funding, and community engagement have limited their effectiveness.

The Agro-Climatic Resilience in Semi-Arid Landscapes (ACReSAL) program has demonstrated the potential for positive change through its support for climate-smart agriculture, watershed management, and community-based projects in areas such as Ute, Mbagbera, and Mbayongo. However, there is still a need for improved coordination, adequate funding, secure land tenure, and robust monitoring systems.

Community participation remains a cornerstone for achieving sustainable agriculture and environmental protection. Engaging local communities—particularly women and youth—ensures that policies are tailored to local needs, thereby improving their acceptance and long-term success. Addressing the identified gaps and adopting the recommended strategies will help Benue State achieve sustainable agricultural development and food security, ultimately improving the well-being of its people and preserving the environment for future generations.

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