

COMMUNITY EDUCATION AND EXTENSION SERVICES FOR AGRICULTURAL DEVELOPMENT AND SUSTAINABLE FOOD SECURITY: A CONCEPTUAL REVIEW THROUGH THE LENS OF FARMERS' COOPERATIVE SOCIETIES IN NIGER STATE, NIGERIA

Ahmed Ibrahim MAWOGI
Email: imawogi63@gmail.com
&

Adebiyi Alani ADELAKUN, Ph.D
Department of Continuing Education and Community Development,
Faculty of Education,
Ibrahim Badamasi Babangida University, Lapai, Niger State, Nigeria

Abstract

This paper provides a conceptual review of the role of community education and extension services in promoting agricultural development and sustainable food security through farmers' cooperative societies in Niger State, Nigeria. Drawing on theoretical frameworks such as the Diffusion of Innovations Theory and Social Capital Theory, the paper explores how community education enhances farmers' knowledge and adoption of technological innovations, while farmers' cooperatives facilitate access to resources and collective action. Despite the potential of these approaches, challenges such as inadequate funding, poor policy implementation, and insecurity hinder their effectiveness. The paper concludes with actionable recommendations for policymakers, including increased funding for extension services, revitalization of farmers' cooperatives, and promotion of demand-driven agricultural education. These measures are essential for achieving sustainable food security in Niger State, Nigeria.

Keywords: *Community Education, Agricultural Development, Extension Services, Sustainable Food Security, Farmers Cooperative Societies*

Introduction

Agriculture remains the backbone of Nigeria's economy, contributing significantly to employment, food security, and national GDP. Despite its importance, the sector faces numerous challenges, including low productivity, inadequate access to modern technologies, poor infrastructure, and climate change. These challenges are

particularly pronounced in rural areas, where the majority of smallholder farmers reside. In Niger State, which is the largest state in Nigeria by landmass and a major producer of crops such as rice, shea nuts, and locust beans, these issues are exacerbated by insecurity, poor policy implementation, and limited access to extension services. As a

result, achieving sustainable food security remains a daunting task.

Community education and agricultural extension services have been identified as critical tools for addressing these challenges. Community education empowers farmers with the knowledge and skills needed to adopt modern agricultural practices, while extension services bridge the gap between research institutions and farmers by disseminating innovative technologies and best practices. Farmers' cooperative societies, on the other hand, play a pivotal role in mobilizing farmers, facilitating access to resources, and promoting collective action. Together, these elements form a synergistic framework for enhancing agricultural productivity and ensuring sustainable food security.

However, the effectiveness of these approaches in Niger State is hindered by several factors, including inadequate funding, poor coordination, and a lack of demand-driven strategies. Existing extension services are often supply-driven, with little consultation with the farmers they are intended to serve. Similarly, farmers' cooperatives face challenges such as poor management, lack of access to credit, and low participation of women and youth. These gaps highlight the need for a more integrated and participatory approach to agricultural development.

This paper provides a conceptual review of the role of community education, extension services, and farmers' cooperative societies in promoting agricultural development and sustainable food security in Niger State, Nigeria. Drawing on theoretical frameworks such as the Diffusion of Innovations Theory and Social Capital Theory, the paper explores how these elements interact to enhance farmers' capacity to adopt modern

technologies, improve productivity, and achieve food security. The paper also highlights the unique challenges and opportunities in Niger State and provides actionable recommendations for policymakers and stakeholders.

Conceptual Framework

The conceptual framework for this paper is built on the interplay between community education, agricultural extension services, and farmers' cooperative societies as drivers of agricultural development and sustainable food security. The framework is grounded in two key theoretical perspectives: The Diffusion of Innovations Theory and Social Capital Theory.

Diffusion of Innovations Theory

The Theory explains how new ideas, technologies, and practices spread within a community or society. According to this theory, the adoption of innovations is influenced by factors such as: relative advantage, compatibility, complexity, trial ability, and observability that influence the adoption of agricultural innovations. In the context of this paper, community education and extension services serve as the primary mechanisms for disseminating agricultural innovations to farmers. Farmers' cooperative societies, on the other hand, provide a platform for collective learning and experimentation, thereby enhancing the adoption of these innovations.

Social Capital Theory

The Theory emphasizes the role of social networks, trust, and collective action in mobilizing resources, building resilience, and fostering collaboration among farmers. Community education empowers farmers with knowledge and skills, promotes awareness of climate-smart practices, and enhances participation in extension

programmes and cooperatives. Extension services bridge the gap between research and farmers by disseminating technologies and providing technical support. Farmers' cooperatives mobilize farmers, facilitate access to resources, and build trust and resilience through collective action. Together, these elements create a synergistic framework that leads to **improved**

agricultural productivity, enhanced food security, and sustainable livelihoods for farmers. The framework underscores the importance of integrating community education, extension services, and cooperatives to address challenges and unlock the potential of agricultural development in Niger State and beyond.

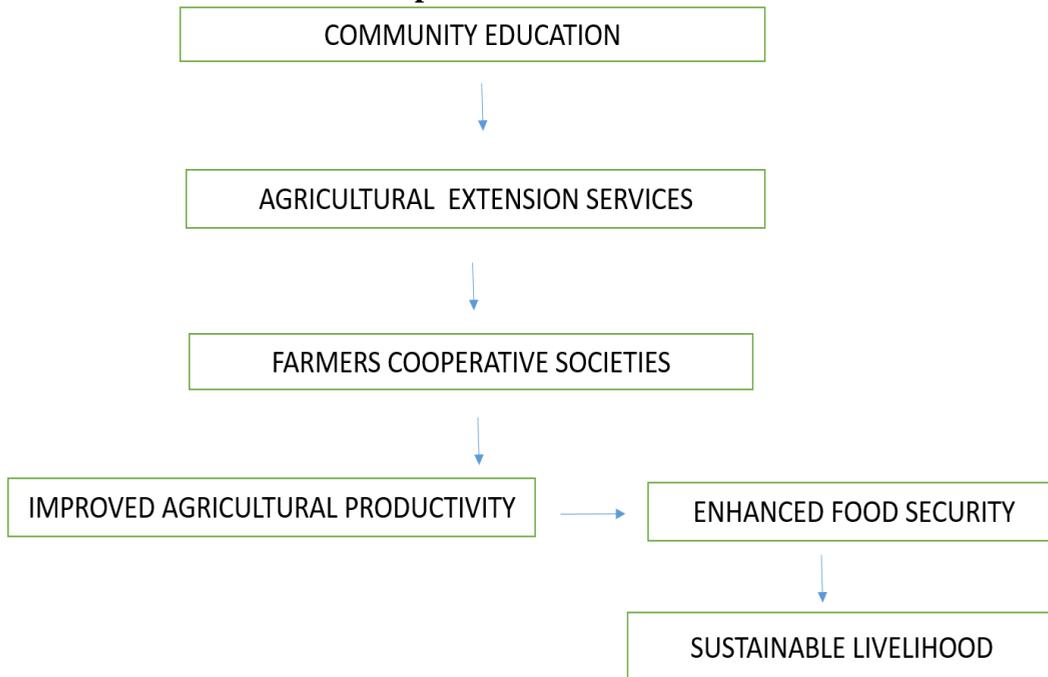


Figure 1: Conceptual Framework for Agricultural Development and Sustainable Food Security

Community Education and Agricultural Development

Community education is increasingly recognized as a critical tool for empowering farmers and enhancing agricultural productivity. According to Fan (2019), community education involves organized programmes that promote learning and social

development through formal and informal methods. In the context of agriculture, community education equips farmers with the knowledge and skills needed to adopt modern technologies, improve farming practices, and enhance their livelihoods. Recent studies have emphasized the role of community education in addressing

challenges such as climate change, food insecurity, and rural poverty. Adeolu (2020) found that community education programmes in Nigeria significantly improved farmers' adoption of climate-smart agricultural practices, such as drought-resistant crops and efficient water management techniques.

Similarly, Ojo and Adebayo (2019) highlighted the importance of community education in promoting peace and conflict resolution between farmers and herdsmen, which is critical for sustainable agricultural development.

However, challenges such as inadequate funding, poor infrastructure, and low participation of women and youth continue to limit the effectiveness of community education programs.

Abu (2019) noted that many community education initiatives in Nigeria are supply-driven, with little consultation with the farmers they are intended to serve. This underscores the need for more participatory and demand-driven approaches to community education.

Agricultural Extension Services

Agricultural extension services play a vital role in bridging the gap between research institutions and farmers by disseminating innovative technologies and best practices. According to the Food and Agriculture Organization (FAO, 2017), extension services facilitate access to knowledge, information, and technologies, while also assisting farmers in developing their technical, organizational, and management skills.

Recent studies have highlighted the importance of extension services in improving agricultural productivity and food security. Sani (2020) found that extension

services in northern Nigeria significantly increased farmers' adoption of improved seed varieties and fertilizers, leading to higher crop yields and incomes.

Haug (2018) emphasized the role of extension services in promoting sustainable natural resource management, such as soil conservation and agroforestry.

Despite their potential, extension services in Nigeria face numerous challenges, including inadequate funding, poor coordination, and a lack of trained personnel. Agbamu (2021) noted that many extension programmes are poorly implemented, with limited reach to smallholder farmers in remote areas. This highlights the need for increased investment in extension services and the adoption of innovative approaches, such as digital extension platforms.

Farmers' Cooperative Societies

Farmers' cooperative societies are voluntary associations of farmers who come together to achieve common economic and social goals. According to Alufohai (2018), cooperatives play a critical role in mobilizing farmers, facilitating access to resources, and promoting collective action. They provide members with access to credit, inputs, markets, and extension services, thereby enhancing agricultural productivity and food security.

Recent studies have highlighted the benefits of farmers' cooperatives in Nigeria. Mohammad and Atte (2019) found that cooperatives significantly improved farmers' access to credit and inputs, leading to increased crop yields and incomes. Similarly, Yamusa and Adefila (2019) emphasized the role of cooperatives in reducing transaction costs and enhancing farmers' bargaining power in the market.

However, challenges such as poor management, lack of funding, and low participation of women and youth continue to limit the effectiveness of cooperatives. Taiwo and Onugu (2018), noted that many cooperatives in Nigeria are poorly organized, with limited capacity to deliver services to their members. This underscores the need for capacity-building programmes and increased support for cooperatives from government and development agencies.

Sustainable Food Security

Sustainable food security exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and preferences for an active and healthy life. According to the World Bank (2019), sustainable food security encompasses four dimensions: availability, accessibility, utilization, and stability.

Recent studies have highlighted the importance of agricultural development in achieving sustainable food security. Oyeyinka and Bolarinwa (2019) found that increased agricultural productivity significantly improved food availability and accessibility in Nigeria. Similarly, Oyeshola et al. (2019) emphasized the role of agricultural education in promoting sustainable food security by equipping farmers with the knowledge and skills needed to adopt modern technologies and improve farming practices.

However, challenges such as climate change, insecurity, and poor policy implementation continue to hinder efforts to achieve sustainable food security in Nigeria. Ibrahim (2021) noted that Nigeria's failure to meet the Maputo Declaration target of allocating 10% of its national budget to agriculture has limited the effectiveness of agricultural programmes and policies. This highlights the

need for increased investment in agriculture and the adoption of innovative approaches to address these challenges.

While existing studies have explored the role of community education, extension services, and farmers' cooperatives in agricultural development and food security, several gaps remain:

- Limited Focus on Niger State: Most studies have focused on other regions of Nigeria, with limited attention to Niger State, which is the largest state by landmass and a major agricultural producer.
- Lack of Integration: Few studies have explored the interconnections between community education, extension services, and farmers' cooperatives in promoting sustainable food security.
- Inadequate Attention to Demand-Driven Approaches: Many studies have focused on supply-driven approaches, with limited attention to the needs and aspirations of farmers.

Theoretical Contributions

This paper contributes to the literature by:

- Providing a conceptual framework that integrates community education, extension services, and farmers' cooperatives as drivers of agricultural development and sustainable food security.
- Highlighting the unique challenges and opportunities in Niger State, which has been understudied in the existing literature.
- Emphasizing the importance of demand-driven approaches and participatory strategies in enhancing the effectiveness of community education and extension services.

Contextual Analysis of Niger State: Agricultural Potential, Challenges, and Opportunities

Niger State, located in North-Central Nigeria, is the largest state in the country by

landmass, covering approximately 76,363 square kilometers. It is often referred to as the "Power State" due to its hosting of the Kainji and Shiroro hydroelectric dams. However, beyond its energy resources, Niger State is a critical hub for agricultural production, contributing significantly to Nigeria's food security.

Agricultural Potential

Niger State is endowed with vast agricultural resources, making it one of Nigeria's most important agricultural states. Its potential is evident in the following areas:

- **Arable Land:** The state has extensive arable land suitable for the cultivation of various crops, including rice, maize, millet, sorghum, yam, cassava, and soybeans. It is also a major producer of cash crops such as shea nuts, locust beans, and sugarcane.
- **Water Resources:** Niger State is blessed with abundant water resources, including the Niger River, Kaduna River, and several dams and irrigation schemes. These resources provide opportunities for year-round farming through irrigation.
- **Climate:** The state has a tropical climate with distinct wet and dry seasons, making it suitable for both rain-fed and irrigated agriculture.
- **Livestock Production:** The state has vast grazing lands, making it a hub for livestock production, including cattle, goats, sheep, and poultry.
- **Agro-Processing Potential:** With its abundant raw materials, Niger State has significant potential for agro-processing industries, such as rice milling, shea butter extraction, and livestock feed production.

Challenges Sustainable Food Security in Niger State

Despite its agricultural potential, Niger State faces several challenges that hinder its

ability to achieve sustainable food security and maximize its agricultural output. These challenges include:

1. **Insecurity:** In recent years, Niger State has experienced increasing insecurity, including banditry, kidnapping, and conflicts between farmers and herdsmen. These security challenges have disrupted farming activities, displaced farmers, and destroyed farmlands.
2. **Poor Infrastructure:** The state lacks adequate infrastructure, such as good roads, storage facilities, and processing plants. This limits farmers' access to markets and increases post-harvest losses.
3. **Climate Change:** Erratic rainfall patterns, droughts, and flooding have negatively impacted agricultural productivity in the state.
4. **Limited Access to Credit:** Smallholder farmers in Niger State face difficulties accessing credit and other financial services, which limits their ability to invest in modern technologies and inputs.
5. **Inadequate Extension Services:** The state has a limited number of extension workers, and many farmers lack access to the knowledge and technologies needed to improve their productivity.
6. **Low Adoption of Modern Technologies:** Many farmers in Niger State still rely on traditional farming methods, which are less efficient and productive compared to modern techniques.

Over the years, there have been challenges of adequate funding to agriculture in Niger State, poor agricultural policy implementation,

farmers lack of education on technological innovations, non-availability of extension services to farmers, and provision of substantial inputs and chemicals, non-revitalization of farmers' cooperative societies, poor agricultural storage facilities, marketing opportunities, including provision of improved high yield seedlings to farmers. There has also been challenge of policy direction towards the state's agricultural comparative advantages over time. It is noted that Niger State is favored by its location in the middle of Nigeria with over 200 million people. The State has excellent land, water and air transport connection to the rest of Nigeria and the world at large and many Rivers such as Niger, Kaduna, Gurara and Chanchaga with extensive basins and flood plains. All of these agricultural potentials of Niger State have not been exploited for the total benefits of the people; hence sustainable food security in the State and Nigeria has remained an illusion (Yamusa and Adefila, 2019).

Niger State Government under the leadership of Farmer Governor Mohammed Bago realized the importance of agriculture's contributions to the State Gross Domestic Products (GDP), as the mainstay of the state economy growth, he rolled out agricultural programmes and policies to squarely mitigate the enumerated challenges. The government has visualized the tremendous agricultural potential of the State and chart a roadmap that

will move agriculture away from the present subsistent level and see agriculture as a business and wealth creation sector. The sector must not only ensure that the State is able to produce to assured sustainable food security, but will also create jobs across its value chains while providing the needed revenue for critical development of the State.

In the same vein, the Niger State Government is presently poised to revamp the agricultural sector thereby improving the farming communities in the state through a new approach to combating insecurity. The government has established a Ministry of Nomadic Affairs charged with the responsibility to mediate to educate both the herdsmen and farmers on the needs to maintain peace and report any infractions to the appropriate authority for quick intervention. It is expected by this government action and bold initiative crisis between farmers herdsmen could be mitigated if not eradicated in the State. It is further noted, given the ambitious nature of Farmer Governor Mohammed Bago's agricultural programme, encapsulated in the policy titled 'Food Security and Agricultural Programme of Niger State', the leadership component of such an ambitious programme, therefore, becomes a critical success factor to guarantee sustainable food security in state and Nigeria at large. The author stated that Niger State government has strategically established an agency called

“NIGER FOODS” to be responsible to promptly implement the state government agricultural policy thrust, thereby reducing the administrative bureaucracies of the main Ministry of Agriculture towards the actualization of the its objectives.

Furthermore, on land preparation for actual farming, Governor has committed the Niger State government to prepare 10,000 hectares of the land each from the 25 Local Government Areas, till it, prepare it for cultivation, irrigation and planting, provide the inputs, fertilizers, and chemicals for farmers and also teach them through extension services. This is what the government is going to do for free. This constitutes the start-off cost for anybody interested in farming, which the state government is ready to absorb. The author has observed that though impressive, there is little available detail on how many farmers will be eligible for such subvention, as a way of determining how sustainable the absorption by Niger state of such start-off cost will be. It is, however, assumed that with the government having a database of all farmers in the State probably obtained from farmers' cooperative societies, the projections and sustainability of this cost, especially with the unwavering government determination is possible.

Conclusion

Niger State has immense agricultural potential, but it faces significant challenges that hinder its ability to achieve sustainable food security. By addressing these challenges and harnessing its opportunities, the state can transform its agricultural sector and contribute to Nigeria's food security. The

state government's initiatives, such as the Food Security and Agricultural Programme and the establishment of the Niger Foods Agency, are steps in the right direction. However, sustained efforts, increased investment, and collaboration with stakeholders are needed to fully unlock the state's agricultural potential. The next section of the paper will provide actionable recommendations for policymakers and stakeholders to achieve these goals.

Way Forward

To fully harness its agricultural potential and address its challenges, Niger State should consider the following strategies:

- I. **Increase Investment in Agriculture:** The state government should increase its budgetary allocation to agriculture and seek funding from development partners to support agricultural programmes and infrastructure.
- II. **Strengthen Extension Services:** Recruiting and training more extension workers and adopting innovative approaches, such as digital extension platforms, can improve farmers' access to knowledge and technologies.
- III. **Promote Agro-Processing:** Establishing agro-processing industries can create jobs, reduce post-harvest losses, and add value to agricultural products.
- IV. **Enhance Security:** Addressing insecurity through community policing, dialogue, and conflict resolution mechanisms can create a conducive environment for agricultural activities.
- V. **Support Farmers' Cooperatives:** Providing training, funding, and technical support to farmers' cooperatives can enhance their

capacity to deliver services to members and promote collective action.

- VI. Promote Climate-Smart Agriculture: Educating farmers on climate-smart practices and providing them with the necessary resources can help them adapt to climate change and improve productivity.

References

- Abu M. S. Y. (2019). Increasing farmers' productivity through qualitative extension education: each-one take-one approach. *Journal of Vocational education (JOVED)* Pg. 40-45, vol. 2(2).
- Adeolu, A. & Taiwo, A. (2020). The impact of National Fadama Facility in alleviating rural poverty and enhancing agricultural development in South-Western Nigeria. *Journal of Social Science*, 9 (3), 157-161.
- Adewuyi, S.A. and Okunmadewa, F.Y., (2018). "Economic Efficiency of Crop Farmers in Kwara State, Nigeria." *Nigerian Agricultural Development Studies* Pp 68, 2(1).
- Adeyemo, R., J.T.O. and Akinola, A.A.. (2018). "Economic Efficiency of Small Scale Farmers In Ogun State, Nigeria." *Tropicultural*28 (2).
- Agbam, J.U. (2021). Problems and Prospects of Agricultural Extension Service in Developing Countries. <http://www.en.agricultureextension.com>.
- Akamobi, I. (2019). Enhancing Food Security and National Development through Effective Agricultural Extension Service Delivery. *Nigeria Vocational Association Journal*, 19(2), 52-61.
- Alufohai, G. O. (2018) "Sustainability of Farm Credit Delivery by Cooperative and NGOs in Edo and Delta State", *Nigeria Educational Research and Reviews* 1(8) 262-266.
- Amos, T. T., D.O. Chikwendu and J. N. Nmadu. (2017). "Productivity, Technical efficiency and cropping patterns in the savanna zone of Nigeria" *Journal of Food Agricultural. Environment*. 2: 173-176.
- Dukku, M. G. (2022). Extension Education in Nigeria: a panacea for rural development and poverty alleviation. *Journal of Vocational Education (JOVED)*, Pg.101-103, 2 (4).
- Fan, S. (2019). Achieving sustainable food security, new trends and emerging agenda: Multi stakeholder dialogue on implementing sustainable development. United Nations Headquarters, New York.
- Food Agricultural Organization (2017). Sustainable development. Rome declaration on world food security. http://en.wikipedia.org/wiki/file:blue_marble.
- Haug, R. (2018). Agricultural Extension- the power of association of Nigeria conference, Abuja, Nigeria. knowledge in processes of change:, pp: 6-11..
- Ibrahim, A. (2021). Roles of Agriculture Extension to Achieve Food Security and Improve Rural Livelihood. *Proceedings of ISER International Conference, Abu Dhabi, UAE*, pg. 1-3.
- John, S. (2018). The Contribution of Agricultural Extension Services to Food Security of Smallholder Households in Nandi County, Kenya.

- Online Master's Thesis, University of Nairobi. <http://www.the-contribution-ofagricultural-extension-service.html>.
- Muhammad L. A. and Atte, O. A. (2019) “An Analysis of Agricultural Production in Nigeria” African Journal of General Agriculture pg. 112-116, 2(1).
- Nweze, N.J. (2017) “Cooperative Promotion in Rural communities: the project approach” Nigeria journal of cooperative2.(2):76-89.
- Ojo, E. O. & Adebayo, P. F. (2019). Food security in Nigeria: an overview. European Journal of Sustainable Development 1(2), 199-222.
- Okeyika, K. O. & Maduka, O. D. (2022). Achieving sustainable food security in Nigeria: challenges and way forward. Third international conference on African development issues. Ogun State, Nigeria: Covenant University Press.
- Oyeshola, D., Ajao, O. and Lawal, A. (2019). Nigeria’s quest for food security and sustainability: A critique. Journal of Sustainable Development in Africa, 11(4), 1 – 15.
- Oyeyinka, R.A. and K.K Bolarinwa (2019) Using Nigeria Agricultural Cooperative and Rural Development Bank Small Holders Direct Loan Scheme to Increase Agricultural Production in Rural Oyo State, Nigeria: International Journal of Agricultural Economics and Rural Development -2(1).
- Sani, Y. G., Turiman, S., Ismi, A., & Zoharah, O., (2020). Extension workers’ competencies needed for effective management of self-help groups (SHG) in Nigeria. International Journal of Education and Technology (INJET),1(1).
- Taiwo, A.O. and Onugu, C.U. (2018) “The Performance of Agricultural Cooperative Societies Under The National Programme on Food Security in Enugu State, Nigeria” Review of Public Administration & Management Vol. 1 No 2.
- Wikipedia (May, 2024). <https://en.wikipedia.org/wiki/Agriculture>
- Yamusa I., and Adefila, J. O. (2019) “Farmers’ Cooperatives and Agricultural Development in Kwali Area Council, Federal Capital Territory Abuja, Nigeria” International Journal of Humanities and Social Science. Vol. 4, No 7.