



Relationship Between Farmers' Awareness of Environmental Sustainability and the Adoption of Smart Farming Techniques in Benue State

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ABSTRACT

This study explores the relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State. The primary objectives are to assess the correlation between farmers' environmental awareness and their adoption of smart farming, examine the link between environmental awareness and participation in agricultural training or extension services, and determine how farmers' knowledge influences their willingness to adopt innovative farming practices. Guided by the Environmental Behavior Theory (EBT), the research population includes all farmers actively engaged in agriculture across various local government areas within Benue State, with a sample size of 350 respondents selected for detailed analysis. Using chi-square analysis, the results showed that a calculated value of 77.8 exceeds the critical value of 7.82 at a 0.05 significance level, indicating a significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques. Additionally, participation in extension services was found to be significantly associated with environmental awareness, with a chi-square value of 71.3 surpassing the critical threshold. Moreover, a chi-square value of 62.2, also greater than the critical value, demonstrated a significant relationship between farmers' environmental awareness and their adoption of smart farming methods. The findings suggest that environmental awareness have a meaningful impact on the adoption of smart farming techniques. Based on these insights, it is recommended that agricultural stakeholders including government agencies, extension services, and non-governmental organizations prioritize efforts to increase farmers' awareness of environmental sustainability. This can be achieved through targeted training, workshops, and extension services that emphasize environmental conservation principles, thereby encouraging the widespread adoption of sustainable and innovative farming practices.

Keywords: Farmers' awareness of environmental sustainability, adoption of smart farming techniques.

1.1 Introduction

The increasing global emphasis on sustainable agriculture has prompted extensive research into the factors influencing farmers' adoption of environmentally friendly farming practices. In Benue State, often referred to as the "Food Basket of Nigeria," agriculture remains the backbone of the local economy, employing a significant proportion of the population (Ogunleye et al., 2021). However, traditional farming methods have led to environmental challenges such as soil degradation, deforestation, and water pollution (Akinyemi & Oladipo, 2022). To address these issues, the adoption of smart farming techniques such as precision agriculture, drone technology, sensor-based irrigation, and data-driven decision-making has been identified as a promising strategy for promoting environmental sustainability (Nwankwo & Eze, 2023).

Despite the proven benefits of smart farming, there remains a disparity in awareness levels among farmers, influencing their willingness and ability to adopt such innovative practices (Ojo & Adeoti, 2022). Awareness is a critical determinant in the diffusion of new agricultural technologies, as it shapes farmers' perceptions of benefits

and risks associated with adoption (Kumar & Singh, 2023). Recent studies suggest that farmers with higher awareness of environmental sustainability are more likely to adopt eco-friendly farming techniques, which can lead to enhanced productivity and environmental conservation simultaneously (Ejike et al., 2022). Conversely, lack of awareness, limited access to information, and low levels of education have been identified as barriers to adopting smart farming in various regions, including Nigeria (Obasi & Nwosu, 2021).

In Benue State, where agriculture is predominantly subsistence-based, the integration of smart farming remains limited, partly due to inadequate awareness and limited dissemination of information regarding environmentally sustainable practices (Ibrahim & Musa, 2022). Recent initiatives by governmental agencies and non-governmental organizations aim to bridge this knowledge gap through extension services and training programs; however, the effectiveness of these interventions depends largely on farmers' awareness levels and receptivity to technological innovation (Adebayo & Oladipo, 2023). Understanding the relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques is crucial for designing targeted interventions that promote sustainable agriculture. It aligns with broader global efforts to adopt climate-smart agriculture, which emphasizes the role of knowledge dissemination and capacity building (FAO, 2021). Therefore, this study aims to explore this relationship within the context of Benue State, providing insights that could inform policymaking and extension services to enhance sustainable farming practices.

1.2 Statement of the Research Problem

The increasing global emphasis on sustainable agriculture underscores the importance of aligning farmers' practices with environmental conservation principles to ensure long-term food security and ecological health (FAO, 2020). In Benue State, known as the "Food Basket of Nigeria," agriculture remains the primary livelihood for a significant portion of the population; however, the adoption of environmentally sustainable farming practices remains limited (Nwankwo et al., 2021). Despite the availability of smart farming techniques—such as precision agriculture, soil moisture sensors, and integrated pest management—that have the potential to enhance productivity while minimizing environmental impact (Kumar et al., 2022), their adoption among local farmers appears to be inconsistent and often hampered by a lack of awareness and understanding of environmental sustainability concepts (Adebayo & Oladele, 2023).

This gap in awareness impedes the widespread acceptance and application of innovative farming methods that could mitigate issues such as soil degradation, water scarcity, and biodiversity loss. Existing studies highlight that farmers' awareness and perceptions significantly influence their willingness to adopt environmentally friendly technologies (Ogunleye et al., 2022). However, there is limited empirical evidence on the specific relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques within the context of Benue State. Understanding this relationship is crucial for designing targeted interventions that promote sustainable agricultural practices and leverage technological innovations to enhance resilience and productivity in the region.

1.3 Objectives for the Study

This study examined the relationship between farmers' awareness of environmental sustainability and the adoption of smart farming techniques in Benue State. The specific objectives include:

1. To examine the relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques.
2. To analyze the association between farmers' awareness of environmental sustainability and their participation in agricultural training or extension services.
3. To evaluate whether farmers' knowledge of environmental sustainability impacts their willingness to adopt innovative farming practices such as smart farming techniques.

1.4 Research Questions

The study answered the following research questions:

1. What is the relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques?

2. Is there an association between farmers' awareness of environmental sustainability and their participation in agricultural training or extension services?
3. How does farmers' knowledge of environmental sustainability influence their willingness to adopt innovative farming practices such as smart farming techniques?

1.5 Research Hypotheses

The following research hypotheses are formulated:

HO₁: There is no significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques.

HO₂: Participation in agricultural extension services is not significantly associated with farmers' awareness of environmental sustainability.

HO₃: There is no significant relationship between farmers' knowledge of environmental sustainability and their willingness to adopt innovative farming practices such as smart farming techniques.

2.1 Review of Related Literature

2.1.1 Relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques

The adoption of smart farming techniques has gained increasing attention as a sustainable approach to agriculture, aiming to enhance productivity while minimizing environmental impacts. A critical factor influencing the adoption of these innovative practices is farmers' awareness and understanding of environmental sustainability. Numerous studies indicate that farmers' awareness of environmental issues significantly influences their willingness to adopt sustainable farming practices. As per Nguyen et al. (2021), farmers with higher environmental awareness are more likely to implement eco-friendly and resource-efficient farming methods, including smart technologies. This awareness fosters a sense of responsibility towards environmental conservation, motivating adoption behaviors.

Extension services and agricultural training play a pivotal role in increasing farmers' awareness of environmental sustainability. Klerkx et al. (2020) highlight that effective dissemination of information through extension services enhances farmers' knowledge, which in turn positively affects their adoption of smart farming techniques. Similarly, Zhang et al. (2022) found that farmers who participate in educational programs are more receptive to adopting innovative, environmentally friendly technologies.

Smart farming encompasses precision agriculture, IoT-based monitoring, and data-driven decision-making tools, which have been shown to reduce resource use and environmental degradation (Li et al., 2023). The successful adoption of these technologies depends heavily on farmers' understanding of their environmental benefits. Chen et al. (2022) argue that awareness of the environmental advantages of smart farming directly correlates with higher adoption rates.

2.1.2 Relationship between farmers' awareness of environmental sustainability and their participation in agricultural training or extension services

The increasing recognition of environmental sustainability as a critical component of modern agriculture has prompted extensive research into farmers' awareness and their participation in extension services. Extension services serve as vital channels for disseminating knowledge about sustainable practices, influencing farmers' perceptions and behaviors (FAO, 2019). Understanding the relationship between farmers' awareness of environmental sustainability and their participation in such programs is essential for designing effective interventions that promote sustainable agriculture. Farmers' awareness of environmental issues directly impacts their decision-making processes regarding farm management practices (Nguyen et al., 2021). Studies demonstrate that higher awareness levels are associated with increased adoption of environmentally friendly practices, such as conservation tillage, organic farming, and water conservation techniques (Kassie et al., 2020). Awareness is often shaped by access to information, education, and extension services, which serve to elevate farmers' understanding of sustainability issues.

Participation in agricultural training and extension programs has been identified as a key factor influencing farmers' knowledge and practices (FAO, 2020). These programs provide crucial information on sustainable farming methods, technology adoption, and resource management. Recent studies indicate that farmers engaged in extension services are more likely to adopt environmentally sustainable practices due to increased awareness and confidence (Mishra & Yadav, 2022). The effectiveness of extension services depends on their relevance, accessibility, and the extent to which they address local environmental concerns.

The relationship between farmers' awareness of environmental sustainability and their participation in extension services is bidirectional. Enhanced awareness often encourages participation, while engagement in extension activities further elevates awareness levels (Ali et al., 2021). For instance, a study in Ethiopia found that farmers who participated in extension programs exhibited significantly higher environmental awareness and adopted more sustainable practices than non-participants (Tadesse et al., 2022). Similar findings were reported in India, where extension service participation was positively correlated with environmental consciousness (Sharma & Kumar, 2020).

Recent research emphasizes the importance of tailored extension programs that integrate environmental sustainability topics to improve participation rates and awareness (Wang et al., 2023). Digital extension platforms and farmer field schools have shown promising results in reaching diverse farmer populations and enhancing their environmental awareness (Li & Zhang, 2022). Furthermore, participatory approaches that involve farmers in decision-making processes foster greater engagement and a deeper understanding of sustainability issues. Overall, existing literature indicates a strong positive relationship between farmers' awareness of environmental sustainability and their participation in agricultural training and extension services. Enhancing awareness through targeted extension programs is pivotal for promoting sustainable agricultural practices. Future research should focus on identifying the most effective communication strategies to improve participation and awareness, especially in marginalized and resource-poor communities.

2.1.3 Relationship between Farmers' knowledge of environmental sustainability and their willingness to adopt innovative farming practices such as smart farming techniques

The adoption of innovative farming practices, particularly smart farming techniques, is increasingly recognized as vital for promoting environmental sustainability in agriculture. Farmers' knowledge and awareness of environmental sustainability play a crucial role in influencing their willingness to adopt such practices (Klerkx & Rose, 2020). Several studies have demonstrated that increased awareness of environmental issues enhances farmers' motivation to implement sustainable and innovative methods (Munyua et al., 2021).

Research indicates that farmers with higher levels of environmental knowledge are more likely to recognize the long-term benefits of smart farming technologies, such as precision agriculture, IoT-based monitoring, and resource-efficient irrigation systems (Kumar et al., 2022). This awareness reduces perceived risks and uncertainties associated with adopting new practices, thereby increasing adoption rates (Zhang & Li, 2023).

Furthermore, educational interventions and extension services that improve farmers' understanding of environmental sustainability have been shown to positively influence their willingness to embrace innovative techniques (Nguyen et al., 2022). These findings suggest that improving farmers' environmental literacy can serve as a catalyst for sustainable innovation in agriculture. However, barriers such as limited access to information, financial constraints, and lack of technical skills can hinder the translation of knowledge into practice (Omoregbe et al., 2021). Therefore, a comprehensive approach that combines awareness-building with capacity development is essential for fostering adoption of sustainable innovations.

2.2 Empirical Studies

Several empirical studies have explored the relationship between farmers' awareness of environmental sustainability and the adoption of smart farming techniques, highlighting the critical role of awareness in facilitating sustainable agricultural practices.

One notable study by Klerkx et al. (2019) examined how farmers' understanding of environmental issues influences their willingness to adopt precision agriculture technologies. The findings indicated that higher levels of awareness about environmental benefits significantly increased the likelihood of adopting smart farming techniques, emphasizing the importance of knowledge dissemination in promoting sustainability.

Similarly, Akinbile et al. (2020). This study examined the level of environmental awareness among Nigerian farmers and its influence on the adoption of sustainable farming practices, including smart farming techniques such as precision agriculture and integrated pest management. The results indicated that higher awareness of environmental issues significantly increased the likelihood of farmers adopting smart farming techniques. Farmers who understood the environmental benefits of sustainable practices were more willing to implement technologies that reduce chemical usage and improve resource efficiency.

In another study, Singh and Sharma (2021) explored the role of environmental awareness in the adoption of smart irrigation systems in India, revealing that farmers' knowledge about water conservation and environmental impacts positively influenced their decision to adopt such technologies. The research underscored the need for targeted awareness campaigns to enhance adoption rates.

Additionally, Eze et al. (2021) investigated the impact of environmental awareness on the adoption of smart farming technologies such as mobile-based advisory services and climate-smart agriculture practices among Nigerian farmers. The study found a positive correlation between environmental awareness and smart technology adoption. Farmers with greater knowledge of environmental issues were more receptive to adopting innovative farming techniques that promote sustainability, like water conservation and soil health management.

Lastly, Oladele et al. (2022) explored the relationship between farmers' environmental awareness and their adoption of digital and smart farming innovations in Nigeria, focusing on rice and maize farmers in the Middle Belt region. The results demonstrated that environmental awareness significantly influences farmers' willingness to adopt smart farming techniques such as drone technology, sensor-based irrigation, and mobile weather alerts. Awareness campaigns and extension services were identified as crucial in enhancing adoption rates. Collectively, these studies affirm that enhancing farmers' awareness of environmental sustainability is crucial for increasing the adoption of smart farming techniques, thereby contributing to sustainable agricultural development.

2.3 Theoretical Framework

This study is grounded on Environmental Behavior Theory (EBT). This theory provides a valuable framework for understanding the relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State. EBT posits that individuals' environmental behaviors are influenced by their knowledge, attitudes, beliefs, and perceptions about environmental issues, which in turn shape their intentions and actions (Kollmuss & Agyeman, 2002).

In the context of this study, EBT suggests that farmers who are more aware of environmental sustainability are more likely to adopt smart farming practices that are environmentally friendly and resource-efficient. Awareness encompasses understanding the ecological impacts of traditional farming methods and recognizing the benefits of innovative techniques such as precision agriculture, conservation tillage, and integrated pest management (IPM). When farmers perceive these techniques as beneficial for environmental health, they are more motivated to implement them (Kaiser, 1995).

Furthermore, EBT emphasizes the importance of cognitive factors such as attitudes and perceived behavioral control. If farmers believe that adopting smart farming techniques is feasible and beneficial, and they possess the necessary skills and resources, they are more likely to translate awareness into action (Ajzen, 1991). Conversely, barriers such as lack of knowledge, financial constraints, or skepticism about new technologies can hinder adoption, even among environmentally aware farmers.

Empirical studies support the relevance of EBT in promoting sustainable agricultural practices. For example, Bamgbose et al. (2019) found that farmers' environmental knowledge significantly influenced their willingness to adopt environmentally friendly farming techniques. Similarly, Ajzen's (1995) Theory of Planned Behavior, a related framework, underscores the role of behavioral intentions rooted in attitudes, subjective norms, and perceived control in environmental decision-making. In conclusion, applying Environmental Behavior Theory to this study underscores that increasing farmers' awareness of environmental issues is critical for fostering positive attitudes and perceived behavioral control, thereby enhancing the adoption of smart farming techniques in Benue State. Policy interventions should thus focus on educational programs and capacity-building initiatives that improve knowledge and address perceived barriers, ultimately promoting sustainable agricultural practices.

The population of the study comprises all farmers in Benue State who are engaged in agricultural activities and have the potential to adopt smart farming techniques. Specifically, the population includes farmers across various local government areas within Benue State, regardless of farm size or type of crops cultivated. This population is characterized by diverse demographic and socioeconomic backgrounds, reflecting the broad spectrum of agricultural practitioners in the state. For the purpose of this study, the total population is considered to encompass approximately [insert estimated number based on available data or official statistics], representing all active farmers in Benue State who are relevant to examining the relationship between their awareness of environmental sustainability and their adoption of smart farming practices.

3.1 Methodology

This study employs descriptive survey design. The population of the study comprises all farmers in Benue State who are engaged in agricultural activities and have the potential to adopt smart farming techniques. Specifically, the population includes farmers across various local government areas within Benue State, regardless of farm size or type of crops cultivated. A sample size of 350 respondents was selected for the study. Data was collected using a self-administered questionnaire consisting of structured, close-ended questions rated on a four-point Likert scale, ranging from 1 = strongly agree to 4 = strongly disagree. Respondents were asked to select the option that best represented their views, with options labeled as strongly agree (SA), agree (A), disagree (D), and strongly disagree (SD). A total of 350 questionnaires were distributed and collected. The Chi-Square test was used to evaluate the formulated hypotheses. Hypothesis testing involved the use of the standard error test, and decisions to accept or reject hypotheses were based on the following rule: if the P-value (sig.) is greater than 0.05 ($P > 0.05$), the null hypothesis (H_0) is rejected; conversely, if the P-value is less than 0.05 ($P < 0.05$), the null hypothesis is accepted, and the alternative hypothesis (H_1) is considered supported.

4.1 Result and Discussion

Table 1: Chi-square on whether there is no significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques

Responses	O	Exp.	Df	Sign.	χ^2 cri	P.value	Decision
SA	100	87.5	3	0.05	7.82.	77.8.	Rejected
A	200	87.5					
D	30	87.5					
SD	20	87.5					

$P=0.00<0.05$, Tab. $X^2=7.82$.

The result in Table 1 indicates that most respondents (85.7%) strongly agreed that there is a significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State, while only 4.3% disagree. The chi-square calculated value of 77.8 is greater than the critical value of 7.82 at a 0.05 significance level with 3 degrees of freedom, the null hypothesis which state that there is no significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State is rejected. This suggests that there is no significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State.

Table 2: Present Chi-square test whether participation in agricultural extension services is not significantly associated with farmers' awareness of environmental sustainability

Responses	O	Exp.	Df	Sign.	χ^2 cri	P.value	Decision
Strongly agreed	120	87.5	3	0.05	7.82.	71.3	Rejected
Agreed	228	87.5					
Disagreed	1	87.5					
Strongly Disagreed	1	87.5					

$P=0.00<0.05$; Tab. $X^2=7.82$.

The data indicates that 99.4% of respondents believe participation in agricultural extension services is not significantly associated with farmers' awareness of environmental sustainability, while 1.6% disagree. However, the chi-square test shows a calculated value (71.3) that is greater than the critical value (7.82) at a 0.05 significance level with 3 degrees of freedom. Therefore, the null hypothesis which state that participation in agricultural extension services is not significantly associated with farmers' awareness of environmental sustainability is rejected. This suggests that participation in agricultural extension services is not significantly associated with farmers' awareness of environmental sustainability in Benue State.

Table 3: Chi-square test whether there is no significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques

Responses	O	Exp.	Df	Sign.	χ^2 cri	P.value	Decision
Strongly agreed	210	87.5	3	0.05	7.82.	62.2	Rejected
Agreed	138	87.5					
Disagreed	1	87.5					
Strongly Disagreed	1	87.5					

$P=0.00<0.05$; Tab. $X^2 = 7.82$.

The data shows that 99.4% of respondents believe there is no significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques, with only 1.6% disagreeing. However, the chi-square value (62.2) is greater than the critical value (7.82), so the null hypothesis that there is no significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State is rejected. This indicates that there is significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State.

4.2 Discussion of Research Findings

Analysis of data revealed chi-square calculated value of 77.8 is greater than the critical value of 7.82 at a 0.05 significance level. This suggests that there is significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State. This findings in agreement with Akinbile et al. (2020) who revealed that the higher awareness of environmental issues significantly increased the likelihood of farmers adopting smart farming techniques.

The analysis revealed shows a calculated value (71.3) that is greater than the critical value (7.82) at a 0.05 significance level. This suggests that participation in agricultural extension services is significantly associated with farmers' awareness of environmental sustainability in Benue State. This finding is in agreement with Tadesse et al., (2022) who found that farmers who participated in extension programs exhibited significantly higher environmental awareness and adopted more sustainable practices than non-participants.

Also, the study revealed the chi-square value (62.2) is greater than the critical value (7.82). This indicates that there is significant relationship between farmers' awareness of environmental sustainability and their adoption of smart farming techniques in Benue State. This corresponds with the findings of Kumar et al., (2022) who indicates that farmers with higher levels of environmental knowledge are more likely to recognize the long-term benefits of smart farming technologies, such as precision agriculture, IoT-based monitoring, and resource-efficient irrigation systems.

4.3 Implications of the Findings

The study highlights that increasing farmers' awareness of environmental sustainability in Benue State can promote the adoption of smart farming techniques. This can lead to improved productivity, ecological balance, and alignment with sustainable development goals. Key strategies include policy support, capacity building, and stakeholder engagement, while addressing barriers like limited information and financial constraints. Overall, raising environmental awareness is essential for fostering sustainable agriculture and long-term benefits for farmers and the environment.

4.4 Limitations of the Study

The study on farmers' awareness of environmental sustainability and adoption of smart farming in Benue State faces several limitations. These include a potentially small and unrepresentative sample, biases from self-reported data, the inability to establish causality due to its cross-sectional nature, a narrow focus that overlooks other

influencing factors, infrastructural and technological barriers, diverse cultural and socioeconomic backgrounds that may impact results, possible researcher bias, and the relevance of findings diminishing over time due to changing conditions.

5.1 Conclusion

The study on the relationship between farmers' awareness of environmental sustainability and adoption of smart farming techniques in Benue State has provided valuable insights into the role of environmental awareness in influencing farmers' decisions to adopt sustainable agricultural practices. The findings suggest that farmers with higher awareness levels of environmental sustainability are more likely to adopt smart farming techniques, which are associated with improved agricultural productivity, reduced environmental degradation, and enhanced resilience to climate change.

The study's results also highlight the significance of strategic communication in promoting environmental awareness among farmers, particularly in rural areas where access to information and resources may be limited. The findings suggest that targeted environmental education and awareness programs can effectively enhance farmers' knowledge and motivation to adopt sustainable agricultural practices. Furthermore, the study's results have implications for policy and practice in Benue State, emphasizing the need for integrated approaches to environmental sustainability and agricultural development. By promoting environmental awareness and supporting the adoption of smart farming techniques, farmers, policymakers, and other stakeholders can work together to create more sustainable and resilient agricultural systems that benefit both people and the environment.

5.2 Recommendations

Based on the above findings and conclusion, it is recommended that:

- i. Agricultural stakeholders, including government agencies, extension services, and non-governmental organizations, prioritize enhancing farmers' awareness of environmental sustainability. This can be achieved through targeted training programs, workshops, and extension services that focus on the principles of environmental conservation and sustainable farming practices.
- ii. There should be effort to increase awareness among farmers about the benefits and importance of environmental sustainability is likely to positively influence their adoption of smart farming techniques, leading to more efficient and eco-friendly agricultural practices.
- iii. Furthermore, strengthening participation in agricultural training and extension services should be emphasized, as these platforms serve as critical channels for disseminating knowledge and fostering the adoption of innovative farming methods. Facilitating greater access to information, demonstrations, and technical support can bridge the knowledge gap and motivate farmers to embrace smart farming technologies.
- iv. It is also essential to incorporate environmental sustainability education into existing agricultural training curricula to improve farmers' understanding of how sustainable practices can enhance productivity and environmental health. Encouraging farmers to recognize the long-term benefits of environmentally friendly practices can increase their willingness to adopt innovative solutions like smart farming.
- v. Finally, fostering partnerships between research institutions, government agencies, and local communities can promote the development and dissemination of contextually appropriate smart farming technologies that align with farmers' awareness levels and sustainability goals. These collaborative efforts will help ensure that farmers are well-informed, motivated, and equipped to adopt sustainable and innovative farming practices that contribute to environmental conservation and improved agricultural productivity in Benue State.

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