

Volume-I, Issue-1, 2024

Journal Home Page: <https://farpublisher.com/farjahss/>

Page: 61-69

Published by FAR PUBLISHER

Open Access

Environmental Education Awareness Strategies and Sustainable Farming Practices in Cross River State, Nigeria

Imoke, Awara Evor Ph.D,¹ Ayuk, Godwin Omah Ph.D², Usua, Oku Bassey Ph.D,³ Ibok, Emmanuel Okon Ph.D⁴

^{1&2}Department Of Environmental Education, ³Department of Curriculum and Teaching, ⁴Department of Continuing Education and Development Studies University Of Calabar, Calabar – Nigeria
Corresponding Author: ibokemmanuelokon@gmail.com

Abstract

The purpose of the study was to ascertain the relationship between environmental education awareness strategies and sustainable farming practices in Cross River State, Nigeria. Two research questions and two null hypotheses were formulated and tested at 0.05 level of significance. Co relational research design was used for the study. The study's participants consisted of all the 73,002 registered farmers within the state of Cross River, who are enlisted in the respective senatorial district. Purposive and accidental sampling techniques were used to select a sample size of 1, 443. "Environmental Education Awareness Strategies and sustainable Farming Questionnaire (EEASSFQ)"- was used in order to gather data. The questionnaire was validated by three experts. One expert was from Measurement and Evaluation and two from Department of Continuing Education and Developmental Studies, all from University of Calabar. The reliability of the instrument was established through Cronbach alpha method. The reliability index ranged from .72 to .87. Simple linear regression was used to analyze the data collected for the study. According to the study's findings, there was a significant relationship between the variables of environmental education awareness strategies and sustainable farming practices in Cross River State, Nigeria. Based on these findings it was suggested among other things that awareness creation through use of traditional plays and faith-based organizations be adopted as a sustainable farming practices awareness strategy and made an integral part of community norms and values by community elders and chiefs.

Key words: Environmental education, awareness strategies and sustainable farming practices

Introduction

For a very long time, people have been farming in order to create food. Farming is an activity that includes collecting NTFPs, or non-timber forest products, raising crops, and caring for animals. In order to produce crops, raise animals, and extract non-timber forest products, humanity have altered the natural environment through farming practices. This means that people would not be able to farm without altering the natural environment, and without farming, people would not have food to eat. In the past, there was no issue with how the natural environment was

modified by farming practices because the environment was not perceived as a necessity which should be cared for. In recent times, such perceptions are drastically changing due to the numerous environmental challenges (flooding, deforestation, climate change and resource depletion among others) brought about mainly by man's actions on the environment. One of the major ways in which man's actions have served to bring about the environmental challenges is through land modification processes and practices (James & Ngala, 2015 cited in Igwebuike & Etan, 2018).

One of the organizations in Cross River State that assists farmers in adjusting to new developments in farming methods is the Cross River Agricultural Development Programme (CRADP). Officers from the state's extension services work to educate farmers on modern farming methods by designating agricultural zones. Educating farmers on technologies related to farm clearing, land preparation, planting materials, planting time, cropping system, weeding, soil fertility, mulching, staking, harvesting, and agricultural product storage is among the extension services provided in the study area, which is Cross River State (Ibok, Ekanem & Umoh, 2019). The state is given a lot of attention in terms of agricultural produce based on the fact that it is amongst the top five states within the nation in terms of cocoa, cassava, yam and plantain production (Ofori, Fobil& Odia, 2018).

Concerns about farmers' interactions with the environment have arisen recently because of the need to lessen some of the effects of environmental changes, such as climate change. The implementation of regulations and incentives to promote environmental awareness and sustainable behaviour, working with NGOs and environmental organizations to develop and deliver educational programs and materials, and using media, social platforms, and events to inform the public about environmental issues and sustainable practices are some of the environmental education strategies that have been introduced as a result of environmental challenges. This brought about the advent of “sustainable farming methods like crop rotation (alternating crops in a field to maintain soil health and prevent pest build-up), cover cropping (planting crops to cover soil between growing seasons to prevent erosion and improve soil quality), integrated pest management (utilizing a mix of biological, cultural and chemical methods to control pests while minimizing environmental impact), conservation tillage (reducing soil disturbance to maintain soil structure and prevent erosion), precision agriculture (using technology to optimize resource use and reduce waste in farming operations), agro forestry (integrating

bushes and trees into crop and animal farming systems), organic farming (avoiding synthetic pesticides and fertilizers in favour of natural alternatives), water conservation techniques (implementing efficient irrigation systems and water management practices) and rotational grazing (moving livestock between pastures to prevent overgrazing and maintain grassland health)”. The long-term productivity of farmlands is what these techniques are meant to guarantee. Because of its significance for agricultural products, there have been concentrated attempts to raise awareness of contemporary farming methods in the research area (Yadav, Yadav, Mishra, & Sachan, 2020).

The use of excessive amounts of pesticides and herbicides, the annual felling of all forest trees on newly cleared farmland, bush burning, the failure to use improved crop varieties during planting, the shortened fallow periods for intended farmlands, unsustainable soil management practices, and the extracting forest products other than timber are all practices that farmland users engage in despite land use regulations set forth by government-based agencies within the study area. Reduced crop yield, soil nutrient mining (leaching of the natural nutrients in the soil), high concentrations of chemicals in water bodies, soil erosion, deforestation, and the extinction of exotic plant and animal species were all consequences of the aforementioned practices. Besides the consequences mentioned, it is concerning because there are also perceived long-term effects, such as the loss of farmlands owing to poor soils in this age of population growth. In light of this, this study was conducted so as to determine the connection between sustainable agricultural methods within the state of Cross River and environmental education awareness practices.

Objectives of the study

The study sought to:

1. determine the connection between the utilization of faith-based organizations and sustainable farming practices in Cross River State; and:

2. find out the connection between the utilization of traditional plays and sustainable farming practices in Cross River State.

Research hypotheses

The following hypotheses were developed to direct the investigation;

H₀₁ There is no significant relationship between use of faith-based organizations and sustainable farming practices in Cross River State, Nigeria.

H₀₂ There is no significant relationship between use of traditional plays and sustainable farming practices in the state of Cross River Nigeria.

Literature review

Faith-based organizations' activities and sustainable farming practices

In the modern era, faith-based organizations, or FBOs, are religious agents that contribute to social change. This claim is still up for debate based on differing opinions from many facets of human society. Donor organizations, for example, which represent organized civil society perspectives, challenge this claim, as James (2017) reiterates. Without a doubt, FBOs offer social, health, and educational services together with human development services. The moral competence of FBOs, their roots in both urban and rural areas, and the respect and confidence of both their members and recipients are some of the comparative advantages that they are thought to have over secular social service providers. According to James (2017), FBOs have been at the vanguard of social movements and service delivery in development for decades, but donors have ignored them. Research on the activities of FBOs in Nigeria is relevant since it is acknowledged that faith is essentially a major force behind societal transformation. Throughout history, agriculture and religion have been natural bedfellows. This is particularly clear from the way that religious traditions have consistently influenced agricultural development and practice around the globe.

Farming God's Way: agronomy and faith challenged is the title of a research conducted by Spaling and Kooy (2019). Farming God's Way (FGW) is a form of conservation agriculture (CA), according to the authors, that reinterprets the CA concepts of crop rotation, mulching, and no tillage by

utilizing biblical metaphors such as the Garden of Eden, God's blanket, and God doesn't plow. Faith-based networks have facilitated FGW's growth as a development intervention to help resource-poor farming households achieve food security, adapt to climate change, and improve soil productivity throughout Sub-Saharan Africa and beyond. The production, sustainability, and faith claims of FGW are identified and contrasted in this study to see which claims are contested. Using focus groups and semi-structured interviews, a qualitative study of Canadian program managers in charge of CA or FGW initiatives in Africa and smallholding FGW farmers in Kenya is conducted. Program managers, farmers, and the literature generally agree on production-related claims of better soil moisture and climate change adaptation, but social claims of increasing labor demand on women and religious claims of faith improving CA are disputed. The results demonstrate that female farmers categorically deny the assertion that FGW increases their labor costs for weeding. The idea that faith prevents adoption or innovation on the farm is also disputed by FGW farmers, who say that FGW links faith to their work, changes their motivations and methods for farming, and alters their perspectives in order to embrace faith-based conservation agriculture.

Faith-based organizations(FBOs) and churches are actively promoting Farming God's Way (FGW) as a measure to promote development to help agricultural households in Sub-Saharan Africa with few resources improve their soil productivity, adapt to alteration in climate and improve the quality of food. One. Conservation agriculture (CA) and FGW are synonymous, however FGW is rooted on a religious system that is theocentric (focused on God) and invokes God as the First Farmer who does not plough, views mulch as God's blanket, and imitates biodiversity and other natural processes that are ascribed to the Edenic Garden. Two. The three conservation agriculture agronomic principles—crop rotation, mulching, and no tillage—are represented by these biblical analogies (Spaling & Kooy, 2019). Donisian (2017), carried out a research work titled the role of faith-based organizations in the improvement of social welfare for rural impoverished

households in Nyamweru Sub-County, Kabale district: an analysis of Caritas Kabale Diocese as a case study. According to the author, faith-based organizations (FBOs) have for a long time committedly made positive contributions towards provision of education, support in agriculture, skills, health to enhance social welfare but some people in rural areas still have low income, have poor health standards, have no food security, and have limited skills and lack employment due to low levels of education hence poor social welfare. In this study, the role of FBOs (Caritas-Kabale Diocese) in improving social welfare among the impoverished rural residents of Nyamweru Sub-County was evaluated. Examining the role that FBOs play in improving social welfare among rural poor households, identifying the difficulties that FBOs encounter in doing so, and establishing the strategies that have been implemented to improve FBOs' performance in improving social welfare among rural poor households were the goals that guided this study. The study's case study design was supported by a qualitative methodology. The study used a sample size of 80 respondents and these were selected both randomly and purposively. The data collection instruments used in this study included questionnaires, interview guide and focus group discussions. The analysis of data was done utilizing descriptive statistics, like frequencies and percentages. From the findings, it was revealed that the roles of FBOs including Caritas Kabale Diocese are important in improving the welfare of rural poor households. A research by Lang (2018) examined the influence of religion in agriculture: insights from Cameroon's Bamenda Grassfields since pre-colonial times. Since the beginning of human communities, the author claims, the connection between growth and religion in the widest sense has remained resilient. There is evidence of the dynamic involvement of religion in a variety of developmental sectors in communities all throughout the world. The study's focus, agriculture is among the economic sectors where religious organizations and influences have had a significant impact.

Traditional plays and sustainable farming practices

Conventional plays have a vital role in environmental protection and communication. These media serve as the society's actual representatives. It serves as a vehicle for delivering instruction and information in entertaining ways. A wealth of folk art, folktales, folk dances, songs, and dramas can be utilized for development projects in developing nations. For both literate and illiterate societies with rich cultural legacies, these media have the ability to convey developmental lessons. They are able to overcome the effort of language, conversation, and words in addition to other hurdles to communication, such as comprehension, clarification, curiosity, attitude, and perception. Folk media's appropriate idioms, meaningful purpose, and entertainment value make it incredibly influential on rural society. In addition to using communication and education as a combined tool for policymaking, traditional media can incorporate environmental concerns into development policy. Our nation's patriotism movement has benefited greatly from the use of folk tunes. "Public participation can result in better environmental quality outcomes and enhances the decision's legitimacy and quality" (Paul, Stern & Dietz, 2008 in Polbitsyn & Earl, 2019).

Kabadayi (2018) conducted a study on Using Technology and Traditional Play to Increase Preschoolers' Awareness of Environmental Pollution for Sustainability. Preschoolers develop quickly in the domains of cognitive, social-emotional, physical, psychomotor, language, and aesthetics, according to the author. During this time, it's critical for kids to develop environmental awareness in addition to fundamental behaviors and abilities. Environmental issues mostly harm children, according to research. However, it is essential for children to live in a clean and healthy environment. Therefore, by developing ecological balance and raising awareness of sustainability throughout the preschool years, children may demonstrate healthy development in all developmental domains and contribute to a healthy future. Preschool science and nature programs are crucial in helping children develop

an awareness of the environment during this time because they incorporate activities that foster environmental consciousness and make significant contributions to children's environmental awareness for sustainability. A total of 80 preschoolers from Konya province's pre-school facilities participated in the current study. Both the pre- and post- \bar{n} tests were created by the researchers using the environmental contamination awareness scale. SPSS 18 was used to analyze the data. There was a substantial difference in the experimental group's awareness of environmental contamination, as indicated by the preschoolers' post-test results.

Khamung (2014) carried out a research on cultural heritage and conservation of sustainable agriculture as a means to develop rural farms as agritourism destinations. According to the author, rural communities have the natural resources and cultural heritage to draw agritourism development; if they observe and practice self-sufficiency farming and use sustainable agriculture practices while maintaining their local cultural heritage, the success of agritourism will be significantly increased. This paper's goal is to examine the development of agritourism by examining the rural cultural heritage, the agricultural landscape, local customs, sustainable agriculture practices, sustainable conservation methods used locally, and farmers' conservation sensitivity. Furthermore, the preservation of regional farming customs and cultural heritage can act as the cornerstone for the growth of agritourism destination farms. In rural villages that aspire to become agritourism destinations, the understanding of vernacular landscape, culturally constructed landscape, farming livelihood, cultural heritage, and traditional self-sustaining agricultural practices are the strong building blocks to foster prosperity, ecological integrity, cultural identity, social well-being, self-sufficiency, biodiversity, and sustainable conservation.

Methodology

The correlational research design was used in this study. This design involves the collection of data to accurately and objectively describe existing phenomena. The population of the study

consisted of all the 73,002 registered farmers in Cross River State, who are enlisted in the respective senatorial district. A manageable and sizeable sample size of 1, 443 respondents was selected for the study using purposive and accidental sampling techniques.

The instrument utilized for gathering data was a structured questionnaire titled "Environmental Education Awareness Strategies and Sustainable Farming Questionnaire (EEASSFQ)" designed by the researcher and validated by three experts. One in measurement and evaluation and two in Environmental Education Department, University of Calabar – Calabar. To determine the reliability of the instrument a trial testing was done using 50 respondents drawn from the study area with similar characteristics who were not included in the main study. A set of items was administered to the respondents after an interval of two weeks. The Cronbach Alpha reliability coefficient was used to test the degree of consistency of the instrument. They were found to range from .72 to .87. This implies that the instrument was reliable enough to be used for this investigation. The procedure for data analysis was based on the already structured research hypothesis. Prior to the administration of the questionnaire to the respondents (registered farmers), the researcher secured information on the venue and date of registered farmers meetings per LGAs of the sampled area. This the researchers attended with five other trained research assistants to other locations depending on the LGAs. At the meeting venue after the farmers had concluded their meeting deliberations, the researchers and their assistants respectively formally introduced themselves stating the aim of their visit, after which the questionnaire was administered to the respondents. Simple regression statistical technique was used to analyzed data for the study.

Presentation of results

The two research hypotheses were stated and tested in order to provide solution to the problem of this study. Each hypothesis was tested at .05 significant level.

Hypothesis one

There is no significant relationship between use of traditional folk media and sustainable farming practices in Cross River State, Nigeria. The independent variable is use of faith-based organizations while the dependent variable

is sustainable farming practices in Cross River State. In analyzing the hypothesis simple regression statistical analysis was used and result shown in Table 1.

TABLE 1
Simple regression analysis on the connection between the utilization of faith-based organizations and sustainable farming practices in Cross River State

Variable	R	R ²	Adj. R ²	Std. Error	
Faith-based organizations	.189 ^a	.036	.034	2.229477	
Source of variation	SS	Df	MS	F	p-value.
Regression	349.876	1	98.211	8.51*	.023 ^b
Residual	3982.527	1441	11.495		
Total	4332.403	1442			

*Significant at p <.05

The analysis in Table 1 showed that the Adj R² is 0.034. This implies that 3.4% of the variance in the dependent variable (sustainable farming practices) could be accounted for by use of faith-based organization activities. However, though the percentage contribution is small, a cursory look at the table showed that F=8.511 (p<.05) is significant. Also since p(.023) is less than p(.05), it implies that use of faith-based organizations' activities have a significant relationship with sustainable farming practices in Cross River State, Nigeria. Therefore, the stated null hypothesis is rejected and the alternate hypothesis upheld. This implies that use of faith-

based organizations has a strong positive relationship with sustainable farming practices in Cross River State Nigeria.

Hypothesis two

Use of traditional plays have no significant relationship with sustainable farming practices in Cross River State, Nigeria. The independent variable is traditional play while the dependent is sustainable farming practices in Cross River State. In analyzing the hypothesis simple regression statistic was used and the result of the analysis is stated in Table 2.

TABLE 2
Simple regression analysis on the connection between the utilization of traditional plays and sustainable farming practices in Cross River State

Variable	R	R ²	Adj. R ²	Std. Error	
Traditional folk media	.172 ^a	.030	.028	2.132111	
Source of variation	SS	Df	MS	F	p-value.
Regression	638.301	1	121.281	11.19*	.011 ^b

Residual	3694.102	1441	12.110		
Total	4332.403	1442			

*Significant at $p < .05$

The analysis in Table 2 showed that the Adj R^2 is .008. This implies that 0.8% of the variance within dependent variable (sustainable farming practices) could be accounted for by use of traditional plays. However, though the percentage contribution is small, a cursory look at the table showed that $F=0.153$ ($p>.05$) is not significant. Also since $p(.0721)$ is greater than $p(.05)$, it implies that indeed use of traditional plays has no significant relationship with sustainable farming practices in Cross River State, Nigeria.. Therefore, the stated null hypothesis is upheld. This implies that use of traditional plays has a strong negative relationship with sustainable farming practices in Cross River State Nigeria.

Discussion of findings

Use of faith-based organizations’ activities and sustainable farming practices

According to the outcome of the analysis in hypothesis one, the alternative hypothesis was maintained and the null hypothesis was abandoned. Consequently, it suggested that there is, in fact, a significant association between the operations of faith-based organizations and environmentally friendly agricultural methods in Cross River State. The findings are consistent with James' (2017) assertion that Faith-Based Organizations (FBOs) are religious agents that facilitate social change in the modern era. Based on differing opinions from various facets of human society, this claim is still up for debate. Donor agencies, for example, represent organized civil society's perspectives. However, FBOs are valued to have comparative advantages more than nonreligious social service providers, for example, their moral competence, their roots within rural and urban communities, the respect and trust of their members as well as their beneficiaries. According to James (2017), FBOs have been at the vanguard of social movements and service delivery in development for decades, but donors have ignored them. Research on the activities of FBOs in Nigeria is relevant since it is

acknowledged that faith is essentially a major force behind societal transformation. Throughout history, agriculture and religion have been natural bedfellows. This is particularly clear from the way that religious traditions have consistently influenced agricultural growth and practice around the globe.

Use of traditional plays and sustainable farming practices

The findings from analysis of the second hypothesis showed that the null hypothesis was upheld implying that indeed traditional play has no significantly relationship with sustainable farming practices in Cross River State. This result runs counter to that of Kabadayi (2018), who conducted research on Using Technology and Traditional Play to Increase Preschoolers' Awareness of Environmental Pollution for Sustainability. The author found that science and nature-based activities in preschool education programs are crucial in helping children develop an awareness of the environment during this time because they incorporate ecological awareness-raising activities and make significant contributions to children's environmental awareness for sustainability.

Furthermore, the current results are in conflict with those of Bıçakcı (2021), who conducted research on the "play for nature" project, which used music to raise public awareness of environmental issues. This study looks at a nonprofit program called "Play for Nature" that uses music as a tool to make people more conscious of the environment. From a public relations perspective, the project's strengths and limitations are carefully examined. The project's creator and organizer in Turkey, Fırat Çavaş, conducts an online interview after gathering data through relevant media coverage. According to the conclusion, a project that uses social media and music to reach millions of people should be managed with a strategic communication approach in order to achieve its primary goal. For

the next phase of the project, the study provides Play for Nature with a useful communication framework.

Conclusion and Recommendations

Based on the result of the study the following conclusions were reached that: There is a significant relationship between use of traditional plays and sustainable farming practices in Cross River State, Nigeria. Utilization of faith-based organizations' activities have no significant relationship with sustainable farming practices in Cross River State, Nigeria.

In light of the study's conclusions, the following recommendations were made:

1. Awareness creation on traditional plays through folk media as a sustainable farming practices awareness strategy should be improved and made an integral part of community standards and beliefs set by local leaders and elders.
2. Information on sustainable farming practices should be shared through the use of faith-based organizations to sensitize community members on the importance of cultivating healthy sustainable farming practices.

References

- Bıçakcı, A. B. (2021), Using music to raise public awareness of environmental issues: the "play for nature" initiative. The AIIC 2021 Annual International Multidisciplinary Conference will take place in Azores, Portugal, from April 24 to 26.
- Donisian , H, (2017). A case study of Caritas Kabale Diocese demonstrates how faith-based organizations can improve social welfare among rural impoverished households in Nyamweru Subcounty, Kabale district. A dissertation that was not published and completed at Uganda Christian University
- Ibok, O. W., Ekanem, J. T., & Umoh, I. U. (2019). Factors influencing the utilization of agricultural extension technologies by yam farmers in Yakurr LGA of Cross River State, Nigeria. *International Basic and Applied Research Journal*, 5(2), 100-109.
- Igwebuike, O. & Etan, M. O. (2018). Environmental education strategies, precursor for sustainable utilization of forest resource in Cross River State, *Education for today*, 14 (1), 153-159.
- James, P. & Ngala, A. (2015). Farmers in Taraba State, Nigeria's Zing Local Government Area: Their Knowledge, Preference, and Adoption of Soil Conservation Techniques, *Journal of Biology, Agriculture and Healthcare*, 3(2), 122-126.
- Kabadayi, A. (2018). Raising Preschoolers' Awareness of Environmental Pollution for Sustainability through Traditional Play and Technology, *Discourse and Communication for Sustainable Education*, 9(2) 133-144.
- Khamung, R. (2014). A study on how to develop rural farms into agritourism destinations by combining sustainable agriculture conservation with cultural heritage, *Silpokorn University journal of Social sciences humanity and art* 5(3), 1-35.
- Lang, M. K. (2018). Thoughts from the Bamenda Grass fields in Cameroon regarding the significance of religion in agriculture from pre-colonial times. *Mgbakoigba, Journal of African Studies* 7 (2) 131-134
- Ofori, S.N.; Fobil, J.N.; Odi, O.J. (2018). A cross-sectional research of women in rural areas of Southern Nigeria examined the usage of household biomass fuel, blood pressure, and carotid intima media thickness. *Environ. Pollut.*, 242, 390–397.
- Paul, A. S. (2019). *Traditional folk media in India*. Geka Books, NewDelhi.

Polbitsyn, S. & Earl, A. (2019).The contribution of traditional farming to the growth of the rural entrepreneurial ecosystem, The 13th International Days of Statistics and Economics, Prague, September, 23rd 2019.

Spaling, H. & Kooy, K. V. (2019). God's Way Farming: a debate between agronomy and faith. *Agriculture and Human Values*, 36:411–42.

Yadav, V., Yadav, S, R, Mishra, M A, & Sachan, P. (2020). The influence of the media on agricultural practices in India's District of Lucknow (U.P.)", *International Journal of Current Microbiology and Applied Sciences*, 9 (4) 2319-7706.