

Farmers' Knowledge of Environmental Issues and their Attitude towards Erosion Prevention in Bekwarra Local Government Area of Cross River State, Nigeria

¹Etuki Eborly Egbonyi, Ph.D
etukieborly@gmail.com

¹Oham Sunday Bassey

¹Afo Joseph

*¹Department of Environmental Education
Faculty of Arts and Social Science Education
University of Calabar, Calabar*

Abstract

This study adopted correlational research design to investigate the relationship between farmers' knowledge of environmental issues and their attitude towards erosion prevention in Bekwarra Local Government Area of Cross River State, Nigeria. A research question was raised which was transformed to a research hypothesis. The sample size was 165 respondents drawn from a population of 1650 registered farmers of Bekwarra Local Government Area. Questionnaire entitled "Farmers' Knowledge of Environmental Issues and their Attitude towards Erosion Prevention" (FKELATEP) was the instrument for data collection. Pearson Product Moment Correlation analysis was the statistical tool used for testing the hypothesis at 0.05 level of significance. Finding of the study shows that there was a significant relationship between knowledge of environmental issues and erosion control in Bekwarra Local Government Area. It was therefore recommended that environmental stakeholders, government and non-governmental organizations should extend environmental awareness campaigns, especially concerning erosion prevention, to Bekwarra Local Government Area of Cross River State.

Keyword: farmers, environmental, attitude, erosion, prevention

Introduction

Land is very precious and plays an essential role in every living thing in the world. The Seventeen Sustainable Development Goals (17, SDGs) is one of the ways proposed by the United Nations in 2015 to achieve a better and more sustainable future for all. An increase in pressure on land is highly likely to happen to achieve the SDGs that are related to food, health, water and climate (Keestra et al, 2016). In order to fulfill the desire to have a sustainable generation in terms of no poverty, zero hunger, good health and wellbeing, land needs to be explored to satisfy all these needs through agriculture and development.

Soil erosion is a global problem and it is one of the major challenges facing many countries. Soil erosion generally means the destruction of soil by the action of natural phenomena, like water, wind, and snow, and human-made (anthropogenic) factors like intensive and extensive agriculture, operating in conjunction with natural agents (Zachar, 1982). According to Holy

(1980), erosion can be classified as a natural or an accelerated process, depending on its intensity. In the first category, soil erosion occurs under normal conditions that take place for millions of years and is the means for the formation of new soils. While accelerated soil erosion is a result of human activities mostly through deforestation, over-grazing and non-suitable farming practices where soil loss is much more than its formation.

Few factors lead to soil erosion, which are soil erodibility, climate erosivity, terrain, and ground cover. Soil is the basis of production in agriculture and soil erosion that occurs in the agricultural area has jeopardized the sustainability of agricultural activities. Accelerated soil erosion has unfavourable environmental and economic impacts (Lal, 1998).

Productivity effects of soil erosion can likely occur both onsite and off-site. The on-site productivity loss due to soil erosion is attributed to three interacting effects, which are reduction in soil quality, long term productivity effects, and short-term productivity effects (Lal, 2001). Erosion control is the practice of preventing or controlling wind or water erosion in agriculture, land development especially in coastal areas, river banks and construction areas. Effective erosion controls handle surface runoff and are important techniques in preventing water pollution, soil loss, wildlife habitat loss and human property loss.

In an attempt to control and manage soil erosion on offsite and onsite effects on land, researchers have been trying to come up with proper control practices and strategies to reduce the amount of soil erosion. Controlling soil erosion is a matter of encouraging innovative approaches in land management techniques and methods. Lots of research had been done on control practices of soil erosion in terms of soil management and land improvement and developments. However, residents of erosion prone areas do come out with proper control practices and strategies to reduce the amount of soil erosion. These control practices and strategies include: avoidance of over grazing, allowing indigenous plants to grow along river banks, using a crop rotation system, practicing minimum or no tillage, conserving wetlands, making sure that there are always plants growing on the soil, and that the soil is rich in humus.

Knowledge of environmental issues can be defined as having ideas about the harmful effects of any human activity on the environment. This includes both the biological and physical aspects of the environment. Air pollution, water pollution, natural environmental pollution, garbage pollution, among others, are some of the major environmental issues that are causing immense concern. Environmental knowledge also involves the process of recognizing values and clarifying concepts in order to develop skills and attitude necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surrounding (United Nations Environmental Programmes [UNEP], 2012). It is in this light that farmers' understanding and level of knowledge on various environmental concepts and problems are important. Environmental knowledge is also defined as the sum total of responses that people make to various thematic aspects of the construct of environmental education. In simple terms, it means knowledge and understanding of facts and concepts related to environment and consequences of various environmental problems such as pollution, population explosion, deforestation, ecological disruption, energy crises, among others. This knowledge helps in land management and erosion control.

Environment has become the concern of all academicians, scientists, policymakers and government across the continent of Africa and beyond. Widespread and systematic concerns for environmental issues have grown following the detrimental effects resulting from environmental degradation. Environmental degradation is real and it is an important concern for the society, as evident by the impacts of climate change. The degradation of the environment has far reaching negative impact to human livelihood and economy. It is for this reason that there is need for exploitation of effective ways of addressing the challenges in order to manage land and control soil erosion effectively.

Environmental education is a tool in environmental conservation. Its objectives include making learners aware of the environment, shaping their attitude and creating opportunities for them to actively participate in conservation, because conservation is one of the ways to manage land and control or prevent erosion. In order to address the myriad of environmental challenges, it is important that individuals are equipped with relevant environmental knowledge and skills.

Traditional thinking has been that behaviour can be changed by making human beings more knowledgeable about environmental and associated issues. This has largely been linked to the assumption that if human beings are more knowledgeable, they will in turn become more aware of the environment in more responsible ways. Therefore there is a need to promote environmental education and awareness to educate and inform all stakeholders and general public that the irrational destruction of land and ecosystem is destroying the basic pillar of posterity for future generations; and that as forests disappears, land becoming infertile and water is exhausted or polluted, children and women suffer most. There is an urgent need to improve public awareness and understanding of environmental issues with a view to promoting the conservation of land at community level. Environmental awareness is essential to empower people to participate in the decisions that will determine the direction of development and the state of the development where they live and work and to ensure the environment is protected and sustainably used and to demonstrate that human actions affect the environment.

One of the ways of preservation is by creating environmental awareness among society especially residents as they are future leaders, future custodians, planners, policymakers and educators of the environment and its issues (Jackson, 2005). Awareness of environmental issues has grown tremendously over the past decades as modern science and more globally conscious population continues to be enlightened on the connection between healthy planet and livelihoods of people everywhere; but that connection has arguably been undermined by population growth, urbanization and area loss, creating a potential divide between people and the natural environment. It is believed that through contact with and learning about natural areas, this disconnection can begin to mend and balance with nature restored.

Environmental knowledge has the potential to facilitate awareness that leads to this connection and exposure to nature, either through structured environmental programmes or unstructured programmes (Woodgate, 2012). Shobieri (2005) states that solving existing environmental crisis requires environmental knowledge and its proper understanding which should be deeply rooted in educational system at all levels of school education. The existing curricula of primary school, secondary and college levels provide a lot of opportunities to make the students aware

of the environment. Awareness will make residents more knowledgeable on environmental matters, thus a possibility of shaping their attitude and behaviour. Responsible environmental behaviour is the ultimate goal of environmental behaviour which is the key foundation to sustainable development (Yurtt & Sullum, 2010).

Efut et al. (2018) conducted a study on perception as a framework for human interaction with the environment. The purpose of the study was to examine the remote factors that influence human perception of the environment. A sample of 200 respondents was selected from the residents of Adim, Akpet Central, Biakpan and Beten through stratified random sampling technique. Questionnaire was the instrument used for data collection and the data were analyzed with the aid of frequencies and percentages. The results indicated that the way individuals perceive the environment forms the basis for human interaction with the environment. Based on the findings of the study, it was recommended amongst others that knowledge of environmental education should be created for Biase people to accommodate behaviours that give preference to the environment.

Some residents of erosion prone areas have good knowledge of environmental issues and the impact on the environment, and they tend to work in solving environmental problems such as erosion; while some have little or no knowledge about environmental issues and they often give less attention to environmental problems. With the persistent occurrence of erosion in Bekwarra Local Government Area, it is therefore pertinent to find out how knowledge of environmental issues influences the prevention of erosion in the study area.

Statement of the problem

Bekwarra people are facing land degradation, and poor crop harvest as a result of soil fertility loss caused by water and wind erosion. Most of these erosion induced problems would have been avoided or reduced by applying positive attitude towards erosion prevention measure. How then does farmers' knowledge of environmental issues relate to their attitude towards erosion prevention? This is what the present study sought to establish.

Purpose of the study

The purpose of the study was to investigate how farmers' knowledge of environmental issues relates with their attitude towards erosion prevention in Bekwarra Local Government Area of Cross River State.

Research question

Based on the purpose of the study, a research question was raised thus:

1. How does farmers' knowledge of environmental issues relate with their attitude towards erosion prevention?

Hypotheses

To guide the study, the research question was transformed into a statement of hypothesis thus:

Ho1: There is no significant relationship between farmers' knowledge of environmental issues and their attitude erosion prevention.

Methodology

The design of this study was correlational research design. The population was the total number of registered farmers in Bekwarra Local Government Area, which is given as 1,650 registered male and female farmers. (Cross River State Ministry of Agriculture, 2021). The sampling technique adopted for this study is the simple random sampling technique. In the simple random sampling technique, the hat and draw method was used. Here the researchers wrote down the names of farmers, from the register of farmers, in pieces of paper which were wrapped and put in a container. The researchers blindly picked one piece of wrapped paper at a time with replacement. The names found in each of the wrapped pieces of paper picked were open and written among those to be used for the study. A total of 165 names were picked which represent 10% of the total population of 1,650 registered farmers in Bekwarra Local Government Area.

The sample for this study consisted of one hundred and sixty five (165) male and female respondents. The sample distribution among males and females is as presented in table 1.

Table 1: Sample distribution among males and females

S/N	Respondents	Total
1	Male	92
2	Female	73
	Grand total	165

The instrument employed for collection of data for the study is a structured questionnaire. The instrument was designed by the researchers. The questionnaire titled “Farmers’ Knowledge of Environmental Issues and their Attitude towards Erosion Prevention” (FKEIATEP) was made up of two parts (A and B). Part A was a five item questions about farmers’ knowledge of environmental issues while part B was made up of ten items concerning attitude towards erosion prevention. A four point scale of strongly agreed (SA), agreed (A), disagreed (D), and strongly disagreed (SD) was used. For positively worded sentences SA, A, D, and SD responses were scored 4, 3, 2, and 1 respectively while for negatively worded sentences the reversed scoring of 1, 2, 3, and 4 were done for SA, A, D, and SD responses respectively.

The constructed instrument was given to two experts (one from Environmental Education Department and the other from Department of Educational Foundations, all in the University of Calabar, Nigeria), for face and content validity. Based on their recommendations, the instrument was re-arranged, and some items were dropped due to ambiguity while some were added so that the instrument will measure exactly what it is intended to measure. The collected and collated data were analyzed using Pearson Product Moment Correlation.

Presentation of results

The results of the study were presented, based on the hypothesis of the study.

Ho1: There is no significant relationship between farmers’ knowledge of environmental issues and their attitude towards erosion prevention.

The independent variable here is farmers' knowledge of environmental issues while the dependent variable is attitude towards erosion prevention. To test the hypothesis, scores of respondents on farmers' knowledge of environmental issues and their scores on attitude towards erosion prevention were obtained and analyzed using Pearson product moment correlation analysis. The result of the analysis is as presented in table 2.

Table 2 Pearson product moment correlation analysis of the relationship between farmers' knowledge of environmental issues and their attitude towards erosion prevention

Variables	N	Mean	SD	r-value	p-level
Farmers' knowledge of erosion prevention	165	15.285	5.261	.810	.019
Attitude towards erosion prevention	165	28.836	2.968		

Significant at 0.05 level, df =163

The result of the analysis presented in table 2 indicates that at 163 degree of freedom, the calculated r-value was 0.810 and it is statistically significant at the 0.05 significant level; this is because the p-value of 0.019 was less than 0.05. The null hypothesis that there was no significant relationship between farmers' knowledge of environmental issues and their attitude towards erosion prevention was rejected. This means that there is a significant relationship between farmers' knowledge of environmental issues and their attitude towards erosion prevention.

Discussion of the findings

Findings obtained from the testing of the study hypothesis revealed that the null hypothesis that there is no significant relationship between farmers' knowledge of environmental issues and their attitude towards erosion prevention was rejected because the calculated r-value of 0.810 was statistically significant at the 0.05 level of significance. This means that there is a significant relationship between farmers' knowledge of environmental issues and their attitude towards erosion prevention.

This finding is in harmony with UNEP (2012) that environmental knowledge involves the process of recognizing values and clarifying concepts in order to develop skills and attitude necessary for understanding and appreciating the interrelatedness among man, his culture and his biophysical surrounding. It is also in agreement with Shobieri (2005) that solving existing environmental crises like erosion requires environmental knowledge and its proper understanding which should be deeply rooted in educational system at all levels of schooling. The finding is also in line with Efut et al. (2018) who reported that the way individuals perceive the environment forms the basis for human interaction with the environment. These interactions include how erosion is treated, prevented or controlled in their respective environment.

Conclusion

Based on the finding of this research, it was concluded that there is a significant relationship between farmers' knowledge of environmental issues and their attitude towards erosion prevention in Bekwarra Local Government Area. It follows that one cannot put to practice what

he or she does not have knowledge of; but those who have the knowledge of preventing erosion can either put it to practice or refrain from practising it.

Recommendations

Based on the finding and the conclusion of the study, the researchers recommended that Environmental stakeholders, government and non-governmental organizations should extend environmental awareness campaigns especially concerning erosion prevention to Bekwarra Local Government Area of Cross River State.

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