



Mass Media as an Environmental Awareness Strategies and Attitude of Farmers towards Deforestation in Southern Cross River State, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author AOO designed the study, wrote the protocol and wrote the first draft of the manuscript. Authors MRO and JEE managed the literature searches and the analyses and the discussion of the study. All authors read and approved the final manuscript.

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ABSTRACT

The main purpose of this study was to examine mass media as environmental awareness strategies and attitude of farmers towards deforestation in the rainforest zone of southern Cross River State, Nigeria. The hypothesis, which states that the use of mass media does not significantly influence the attitude of farmers towards deforestation in the rainforest zone of southern Cross River State, Nigeria, was formulated to guide the study. Ex-post facto research design was considered most suitable for the study. The sample consists of 568 respondents randomly selected through the stratified and simple random sampling techniques. A structured questionnaire was the instrument used for data collection. The instrument was faced validated by three experts in Test and Measurement. The reliability estimate of 0.83 was established through the Cronbach alpha reliability method. Simple linear regression statistical tool was used for data analysis. The result revealed that, there is a significant influence of mass media on attitude of farmers towards deforestation.

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Based on this finding it was recommended among others that environmental educators and advocates should ensure that the mass media should be maximally utilized to continually create environmental awareness among the citizens in order to empower them to develop more positive attitude towards eradication of negative environmental practices and actions.

Keywords: Mass media; environmental awareness strategies; attitude; deforestation; rainforest zone.

1. INTRODUCTION

Forest is a biological community consisting of complex association of trees, plants, water sources and soil that have evolved over millions of years, providing habitats for millions of plants and animal species (<https://www.worldwildlife.org/habitats/forest-habitat>). Forests are fundamental for food security and improved livelihoods. They contribute to resilience of communities by regulating water flows, providing food, wood energy, shelter, fodder and fibre, generate income and employment and harbour biodiversity [1].

There is rapid disappearance of tropical forest as human clears the natural landscape for farming and pastures, harvesting timber for construction of roads and urban areas [2]. While deforestation meets human needs but also has some devastating consequences such as social conflict, extinction of plants and animals species and climate change that presents challenges not just local but global. However, it was observed that accelerating destruction of the rainforest that form a precious cooling band around the earth's equator is now being recognized as one of the main causes of climate change (<https://www.ran.org/the-understory/deforestation>). Deforestation connotes the long-term or permanent loss of forest cover and implies transformation into another land use [3].

Cross River State is blessed with abundance of resources to improve lives. In a bid to promote or encourage development, several devices have been invented to enhance agricultural, industrial and transportation activities. These activities, while providing the raw materials for production of goods and services have also resulted in pollution of land, atmosphere, vegetation and rivers [4].

Philip et al. [4] pointed out that 19% of the tropical forest zone has been lost through deforestation. Hence, the need to adopt sustainable conservation of forest practices. Serious awareness campaign should be created

by the government and environmentalists on the important role played by the forest.

Mass media is the process of sending information to a large audience in different parts at the same time. Mass media play active role in the dissemination of information on the usefulness of environmental resources. Mass media consists of both print and electronic media. The print media include circulars posters, leaflets, bulletin, newspapers and journals while the electronic media deals with television, radio, Internet, video and telephone [5]. Setyawati and Shaw [6] believed the media can utilize innovative ways in its programming to educate the audience and to make the message absorbed. For example information on harvesting guidelines, dangers of illegal logging and indigenous forest management can be packaged into an lively documentary or live broadcast to influence the behaviour change. The media can also provide educational information as well as collecting feedback on the most suitable ways of managing the forest.

The function of media includes monitoring, assessment and reporting, as well documenting issues of public interest. Continuous exposure of media creates behaviour change and brought impact in various dimensions of the society. Studies have shown the dynamics of media impact on social, economic and politics, disaster management and post disaster recovery and public service [7,8,9].

Excessive depletion of ecosystem is blamed on inadequate information on the management and utilization of environmental resources. However, over 80% of forest areas in Nigeria have been cut down for various reasons that ranges from logging for timber to feed local and international industries, and the lost of forest through road construction. The remaining 20% that is left is gradually exploited due to farming, hunting and overgrazing of animals [10].

These environmental awareness strategies are essential for requisite knowledge, skills, information and ideas in order to change their attitude towards deforestation of the existing

forest resources and applying such skills for sustainable management of forest resources in the state and beyond. The process of increasing peoples' knowledge and enlightenment on the environment and challenges as well as acquire the relevance skills to effectively manage the environment is referred to as environmental awareness strategy [11].

Access to environmental information might be connected to deforestation of rainforest zone in the study area, depending on the available environmentally friendly information; people's consumption pattern may be shaped positively. Environmental awareness strategies may be enhanced through information and messages that addresses environmental sustainability. Another factor that may influence deforestation of rainforest zone in the study area may be literacy level of the people. For people to think right, it may be influenced by their literacy level. Education promotes balanced judgment, right behaviour and attitude towards the utilization and management of rainforest resources [12].

Nigeria is signatory to a number of treaties, protocols and conventions, all in an attempt to find lasting solutions to the issue of deforestation. Among these efforts is the UN Conference on the Human Environment, Stockholm Report 1972, Belgrade Charter 1975, Tbilisi Report 1977, Brundtland Commission 1983 and Agenda 21 of Rio Declaration 1992. The United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil in 1992, popularly known as the Earth Summit, also adopted an action plan for Sustainable Development, Agenda 21.

The Chapter 36 of Agenda 21 which is devoted to education states, that "Education is critical for promoting sustainable development and improving the capacity of people to address environmental and developmental issues". In spite of all these government efforts, deforestation is still a problem in the study area as logging, unsustainable agricultural practices, bush burning and wood collection is still part and parcel of the people in the study area. It is based on this premise that this study investigated the influence of mass media on the attitude of farmers towards deforestation in Southern Cross River State, Nigeria.

2. LITERATURE REVIEW

Mass media provide one of the most effective ready-made information of reaching a wide target audience on the usefulness of the environment

and its resources. Mass media simply means the physical ways by which one extends knowledge and skills to listeners (farmers). It is also an agent of information education, entertainment and motivation to farmers in accepting agricultural innovations, therefore mass media remains an important and necessary instrument which can act a vehicle for agricultural technology transfer.

Nigeria Forestry Commission [13] holds that, forest in most regions in Nigeria has continued to disappear due to human activities. Deforestation and desertification resulting from the exploitation of unprocessed log wood for export mostly by the multinational companies which have left no doubt that, comes 2020 Nigeria may not have 40% forest area left. This implies that the rate at which forest resources is disappearing either through farming or lumbering is not sustainable. This therefore, calls for adequate measures to be taken to address this issue.

Nkemnyi et al. [14] carried out a study on media communication aid Environmental Challenges in Buea Southwest region of Cameroon. The study examined the impact of communication in addressing environmental challenges and its approaches that influence effective conscious environmental behavior. A descriptive survey design was used. Data were collected adopting combine qualitative and quantitative questionnaire that sampled 75 household using SPSS analysis and chi-square for testing the hypothesis. The analysis revealed that media communication on environmental issues is still conducted merely as a public obligation rather as a tool to influence behavioral change towards the environment.

Therefore communication has not been able to capture and utilize approaches that can lead to interactive communication and influence positive environmental habits. There is an urgent need to explore detail strategies that confirm to local ethics and has the potentials to initiate interactive environmental communication. The mass media has variety of approaches to reach a larger audience such as television, radio, newspaper and Internet. These various approaches must be used to pass environmental education information on certain key issues.

Famuyide et al. [15] examined the Community Perceived Attitude on Forest Related Environmental Issues using Mass Media in Osun State, Nigeria by utilizing a descriptive survey design. Stratified and purposive random

sampling techniques were used to select a sample of 97 respondents. Data was obtained qualitatively using structured questionnaires and inclusive in its posers were inquiries such as: (i) the strategies employed by the attitude to forest related environmental issues with respect to community awareness on forestry mitigation approaches; (ii) farmers considered average mass media as town criers a mere threat. Data analysis was done using Principal component analysis (PCA) method.

The analysis revealed that attitude to forest related environmental issues with respect to community awareness on forestry mitigation approaches have been ranked very low while more end-user/farmers considered average mass media as town criers a mere threat; thus FREI cannot have adverse effect on the stability of the environment. The results of the study brought into focus the involvement of mass media in disseminating environmental issues as watchdogs for a good environment but that is currently dominated by incidental reporting from actual assessment. Most mass media do not channel feedback to appropriate body such as Forestry Research Institution of Nigeria (FRIN) for processing; therefore, this disposition becomes imperative for collaboration and vertically.

The study recommends that majority of the end-users agreed minimally that it is important to pay attention to FREI to eco-balance the environment while others said is mere threat, FREI cannot have advance effect on the stability of the environment. Therefore, Education awareness of the general public on FREI via FRIN, Media Department, News Agency of Nigerian (NAN), Broadcasting Corporations (BBC), Personal contacts via Phone calls, e-mails have free access to FREI. The relevance of this study to the researcher is that the need to undertake effective communication perceived attitude on forest management in the study area in order to strengthen sustainable livelihoods mass media coverage is essential.

Enobakhere et al. [16] investigated Assignment of public awareness and knowledge of media campaigns on Environmental issues in South-South Zone. The purpose of the study was to examine public awareness and knowledge of media campaigns on environmental issues in South-South State, Nigeria. The authors argued that media campaigns are strong instrument in public awareness on environmental issues. However, despite the remarkable progress made

by media in providing environmental information in Nigeria, there are still substantial constraints to the effective management and development of the environment. The mismanagement of environment has literally contributed to the problems of erosion and deforestation which has led to deterioration of the environs. Data was collected through questionnaire; a survey method was adopted to select a sample of 500 respondents using the Yaro Yamane's formula and inclusive amongst the poser were inquired (i) whether the respondents are aware of media campaigns; (ii) whether the indigenes have knowledge in regards to environmental management.

The study revealed that due to media campaign attitudes of respondents concerning environmental issues has changed positively towards the environment that is clean for a healthy living and most respondents prefer listening to environmental campaigns on radio station rather than any other means of information. It is recommended that media should not down play the issue of environmental hazards and they should play the agenda function by emphasizing on the effects of deforestation and general environmental degradation. Also campaign planners should increase their campaigns on environmental issues; this will make the public's to be aware and conscious of the environment. The relevance of this study is that mass media and social organizations have a large more positive role to play in the dissemination, investigation and use of environmental guidelines and values. So therefore, Mass media constitute the most effective mechanism for promoting concern for environmental quality which supports the objective of maintaining the quality of life.

Amu et al. [17] utilized a survey research design. The purpose of the study was to assess the attitude of 150 journalists in the coverage of climate change news and those who specialized in the areas of science, environment and social sciences; interview was used as the instrument. Purposive sampling technique was used to collect data in 10 national dailies newspapers based on their circulation potentials relative to other news. To draw a representative sample, simple random sampling method was used in selection of 15 journalists in the special areas. Data were analyzed using frequency, percentages, mean scores and multiple regression. The analysis revealed that majority of the journalists had favourable attitude towards reporting of climate change issues while

some personal characteristics like sex, training in reporting climate change issues and years of in-service influenced journalists attitudes towards coverage of news. The authors suggested that training of agricultural communicators should receive appropriate attention in universities in order to ensure that personnel with adequate training in agriculture, communication and environment are not shortfall in media organizations.

Despite the plethora of law enacted by government of Nigeria yet, a lot still need to be done to sensitize people and the multinational companies in order to reduce resource depletion if not eliminate by controlling those operations that lead to environmental degradation and resource depletion. The author further maintains that, environmental awareness approaches such as mass media and seminar may be very useful in disseminating information on environmental conservation and resource management. Ukpe [19] maintained that dissemination of environmental information may be adequate with the use of television. Television play vital role in passing information the way it should be presented. Apart from the verbal information dissemination, animation could be used to represent or demonstrate specific environmental issue that needs change. When animation or practical demonstration is used to support information, people's attention is drawn to appreciate it and also think right. Programme like bush burning and its damage to the plant and animal species is shown for farmers to take note and restrain from such attitude. In a study designed to investigate attitude and knowledge of print media journalists towards reporting of climate change news in Nigeria.

The literature reviewed identified that mass media plays a significant role in influencing people's attitude towards resource conservation and sustainable resource management. Those who have acquired relevant information about environmental resource management through mass media tend to conserve and manage environmental resources more than those who have not gotten such knowledge. The current study will add further evidence to this especially as it relates to forest conservation in the tropical rainforest.

3. METHODOLOGY

The research design adopted for this study was Ex-post facto design. The reason is that the researcher has no direct control over the

independent variable. The study area was Southern Cross River State; Nigeria. The Southern Cross River State is located between latitude $5^{\circ} 41' 50''$ East Greenwich Meridian and longitude $8^{\circ} 20' 25''$ North of the equator. It covers an area of 15,165,54 km² while the remaining forested area is 8,290 km² [20].

The area is a tropical rainforest with a three-layered canopy of tree stand; the soil type is sandy soil and rich humid. The rainforests is rich in timber and non-timber forest product (NTFPs) such as *Irvingia gabonensis*, *Piper nigrum*, *Garcinia kola*, *Cola acuminata*, *Juglans regia*, *Agaricus bisporus*, *Swietenia macrophylla*, genus *Diospyros* and other medicinal plants and herbs.. These forests have veritable habitats for animal species such as *Gorilla beringei*, Monkeys, *Pholidota* and *Reptilia*. This explains why this forest has become the point of attraction to conservationists [21].

The stratified random sampling technique was used to sample 576 community members selected from 33 communities in Southern Cross River State, Nigeria. The instrument used for data collection in the study will be the questionnaire. It will be tagged Environmental Awareness Questionnaire (EAR) and Attitude of Farmers towards Deforestation Questionnaire (AFTDQ).

To ensure that the items selected for inclusion in the questionnaire were capable of eliciting relevant responses from respondents, the researcher presented the designed questionnaire to three lecturers in Test and measurement. Through their constructive criticisms and recommendations some items were dropped and others replaced. The Cronbach alpha coefficient result obtained ranged between .74 to .82, which showed high reliability of the research instrument.

Data used for the study was obtained directly from respondents selected for the study through the use of questionnaire designed for data collection. In each of the communities selected for the study, the researcher visited the chiefs to take permission before administering copies of the questionnaire. The researcher used two trained Research Assistants to visit all the communities selected for the study for the administration of the questionnaire. The administered copies of the questionnaire were retrieved from the respondents after they had responded to them. Data obtained for the study

was duly coded by assigning numerical codes to each item in the questionnaire.

4. RESULTS AND DISCUSSION

This section covered the analysis of data based on each hypothesis formulated for the study. This is followed by interpretation of results and discussion of findings. The hypotheses were tested at 0.05 level of significance.

Mass media does not significantly influence farmers' attitude towards deforestation. The independent variable in this hypothesis is mass media while the dependent variable is farmers' attitude towards deforestation. Simple linear regression statistical tool was used for data analysis. The result of this analysis is presented in Table 1.

The result of analysis presented in Table 1 showed that the predictor or independent variable (mass media) significantly influences the predicted variable (attitude of farmers towards deforestation). The influence is significantly positive (9.850). The regression coefficient showed that mass media ($\beta = .131$; $t = 3.138$; $p < .05$) is statistically significant in the prediction of attitude of farmers towards deforestation of rainforest in Southern Cross River State.

It was revealed from the finding obtained from analysis and testing of hypothesis that the null hypothesis was rejected. This implied that there is a significant influence of mass media on attitude of farmers towards deforestation of rainforest in Southern Cross River State. This finding agrees with the finding of Nkemnyi et al. [14] which reported that mass media provide one of the most effective ready-made information for

reaching a wide target audience on the usefulness of the environment and its resources. Mass media simply means the physical ways by which one extends knowledge and skills to listeners (farmers) also is an agents of information, education, entertainment and motivation to farmers to accept agricultural innovations, therefore mass media remains an important and necessary instrument which can act a vehicle for agricultural technology transfer.

The finding of this study also supported the finding of Enobakhere et al. [16] which revealed that dissemination of environmental information may be adequate with the use of television. Mass media plays a vital role in passing information the way it should be presented. Apart from the verbal information dissemination, animation could be used to represent or demonstrate specific environmental issue that needs change. When animation or practical demonstration is used to support information, people's attention is drawn to appreciate it and also think right. Programme like bush burning and its damage to the plant and animal species is shown for farmers to take note and restrain from such attitude.

The finding of this study also supported the finding of Edu [10] which reported that media campaigns are strong instrument in public awareness on environmental issues. However, the remarkable progress made by media in providing environmental information in Nigeria, there are still substantial constraints to the effective management and development of the environment. The mismanagement of environment has literally contributed to the problems of erosion and deforestation which has led to deterioration of the environs.

Table 1. Simple linear regression analysis of the influence of mass media on attitude of farmers towards deforestation in Southern Cross River State (N = 568)

Model	R	R ²	Adj.R ²	Std error of estimate	
1	.131	.017	.015	8.76905	
Regression anova					
Model	SS	Df	MS	F	Sig
Regression	757.395	1	757.395	9.850	.002
Residual	43523.224	566	76.896		
Total	44280.620	567			
Regression coefficients					
	Unstandardized coefficients		Standardized coefficient	T	Sig
	B	Std error	Beta		
(Constant)	17.661	1.601		11.034	.000
Funding	.320	.102	.131	3.138	.002

Field work, 2018

5. CONCLUSION

The study concentrated on environmental awareness strategies and attitude of farmers towards deforestation of rainforest in Southern Cross River State. The result obtained from analysis of data and testing of hypothesis in the study revealed that there is a significant influence of mass media on attitude of farmers towards deforestation.

Environmental awareness has been identified as a viable tool for actualizing this goal. An uninformed citizen lacks the requisite knowledge, attitude and skills for sustainable environmental protection and management. This emphasizes the need for increased awareness levels towards raising a citizenry that is aware of the total environment and its associated problems, as well as possesses the skills and commitment required to participate in the conservation of the environment. Awareness creation empowers the people with the skills for solving current environmental problems as well preventing the occurrence of new ones. This will contribute significantly to the attainment of sustainable development. Through these media, people's behaviour and attitude may be affected. Otherwise, punitive measures should be taken against individuals and corporate bodies who are found guilty in their mode of operation and relationship with the environment.

6. RECOMMENDATIONS

The results obtained from analysis of data and testing of hypothesis guided the researcher to make the following recommendations;

- i. The mass media should be maximally utilized to continually create environmental awareness among the citizens in order to empower them to develop more positive attitude towards eradication of negative environmental practices and actions
- ii. Relevant authorities should continue to ensure that residents of the study are exposed to and encouraged to use available media
- iii. Mass Media should continue to disseminate environmental issues.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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