INFLUENCE OF TRADITIONAL METHODS ON ATTITUDE OF FARMERS TOWARDS DEFORESTATION IN SOUTHERN CROSS RIVER STATE RAINFOREST ZONE, NIGERIA

BY

Agnes Omari O.
Department of Environmental Education
Faculty of Arts and Social Science
University of Calabar, Calabar
+2347035973533
Email: oruagnes@gmail.com

&

Iton, Whiteley Eme
Department of Environmental Education
Faculty of Arts and Social Science
University of Calabar, Calabar
+2348038722458
Email: emewhiteley@gmail.com

Abstract

The main purpose of this study was to examine influence of traditional methods on attitude of farmers towards deforestation in Cross River State rainforest zone, Nigeria. To achieve the purpose of this study, a hypothesis was formulated to guide the study. Literature review was carried out according to the variable of the study. Ex-post facto research design was considered most suitable for the study. A sample of five hundred and sixty- eight (568) respondents was randomly selected for the study. The selection was made through stratified and simple random sampling techniques. A structured questionnaire was the instrument used for data collection. The instrument was validated by three Lecturers in Test and Measurement and the research supervisor who vetted the items developed. The reliability estimate of the instrument was established through the Cronbach alpha reliability method. One-way analysis of variance and simple linear regression statistical tools was used for data analysis. The result of the analysis revealed that there is a significant influence of traditional methods on the attitude of farmers towards deforestation in rainforest zone in the study area. Based on these findings it was recommended among others that environmental educators and advocates should ensure that more traditional methods (town crier) on environmental conservation are organized and engage regularly to help change attitude towards deforestation in the study area. It was also recommended that the mass media should be maximally utilized to continually

create environmental awareness among the citizens to empower them to develop a more positive attitude towards eradication of negative environmental practices and actions.
Keywords: Traditional methods, Attitude, Farmers, Deforestation, Cross River State rainforest

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. The forest is directly threatened by depletion and degradation of the natural resources on which plants depend. Some 20,000-50,000km^2 of potentially productive lands is lost annually worldwide through deforestation. The activity affects the protective, productive and regulatory functions of the forest on a global perspective; many more have reduced the vegetative cover where 2-9 million km^2 of the earth crust is said to be at very high risk of the resultant impact of desertification, food shortages, global warming etc (Food and Agricultural Organizations (FAO), 2012).

Deforestation is the conversion of forest to an alternative non- forest use. Currently deforestation constitutes major environmental problems. Eneji, Ogar, Essien and Bullem (2014) have pointed out that approximately 78% of the forest cover in the world have disappeared in the last two decades due to various activities of farmers, ranchers and the multinational companies; this forest has been cleared for logging, timber export, subsistence agriculture, collection of hardwood for fuel and 82% of the hardwood exploited in the forest suffered lost annually and these remains problematic in West Africa.

The Nigerian environment since the attainment of independence in 1960 has grown rapidly from a predominantly primary production based economy to an industrialized one among other countries of the world today presents a grim litany of woes, where every state of the federation suffers from one form of environmental problems or the other in varying degrees. According to Food and Agricultural Organization (2015) Nigeria destroys about 600,000 hectares of land every year through indiscriminate exploitation and husbandry. Such careless exploitation of forest has implications in a number of worsening environmental problems in the country, including soil erosion and infertility, desertification and flooding.

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 (Robert, 2017). The author further said that 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.
Non-Governmental Organizations Coalition on Environment (NGOCE, 2018) reported that carbon emissions from automobiles, planes, factories etc in addition to deforestation cause

damages to the earth's crust. The rate of deforestation in the 1980s was estimated at about 400,000 ha/yr, while reforestation was only 3.200 hectare per year. Food and Agricultural Organization (2020) reports that the tropical rainforest capture most attention on deforestation during 1990 and 2010; Nigeria lost an average of 409,700 hectares of forest cover between 1990 and 2005, which is estimated at 35.7% (Odihi, 2023). The highest rate of primary forest lost and climate change may increase by 41.2% between 2000 and 2010 if care is not taken (FAO, 2017). However, Nigeria case is even irritating about 85% of the rural populace and about 78% of the urban population are extremely poor and live in squatter settlements, while about 73% of the entire Nigerian population lives below the UN $1 per day limits, hence these poor households draw from the forest for their survival Oates, Mcfarlan, Groves, Bergl, Linder, and Distell (2023); Oloruntoba & Adetokumbo, (2016) and Ogunjobi, Meduna, Oni, Inah and Enya, (2020).

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 (Philip, Harrison, Akintoye, Olorundami, Nkpena & Ukata, 2014). The authors further stressed that forest disappearance in Southern Cross River State has been blamed on agricultural activities which have promoted the cutting down of trees, and the burning of bushes before cultivation takes place.

Though there seems to be several kinds of human activities that may promote human sustainability in the Southern part of Cross River State, yet many people mostly the indigenes engage in agricultural activities for their survival. Even those who engage in these industries like the quarry industry, cement industry and other businesses, still cultivate parcels of land to support their families. In the late 80s and early 90s, there were still pockets of forests that housed several millions of lives, but industrialization and widespread agricultural activities have destroyed the forest due to negative concept towards the environment. Attitude is one's disposition or reaction towards event.

Philip et al (2014) 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. The current National Tree Planting Campaign is a mere ritual as well as a radio, television propaganda which should be redesigned and the negative impact of deforestation made known to the masses to stem the tide of biodiversity loss. Governmental agencies and non-governmental organization (NGOs) like Nigerian Conservation Foundation (NCF), Federal Ministry of Environment (FME), Federal Environmental Protection Agency (FEPA), National Parks, the National Resources Council (NARECO), in collaboration with the United Nations Environmental Programme (UNEP), the

World Wide Fund (WWF), and other several agencies have embarked on numerous projects aimed at preserving the Country's biodiversity (Anijah-Obi 2021). However, not much has been achieved as Nigeria keeps losing its forests, wildlife and plant species.

The public has the right of access to environmental information held by public authority and making information about the environment available in order to achieve sustainable development. With access to environmental information, the people have full knowledge of the implications of their activities on the environment and are able to participate more effectively in decision-making processes that affect the environment (Iyorza & Bassey-Duke, 2016). Environmental information can be achieved through process of the use of traditional methods. The government, humanitarian groups and non-governmental agencies are doing everything at their disposal to ensure that there is adequate awareness creation on forest conservation. To carry out this task successfully, Environmental Educators and extension officers charged with the responsibility of stimulating the relevant awareness and generating appropriate attitudes among the people on issues concerning deforestation and other environmental problems should be trained and deployed to the forest zones (Bullem, 2012).

Use of traditional methods is the indigenous ways of conveying information to audience through the types of traditional media selected on social and environmental resources. It involves the use of proverbs, folklores and tales, town crier, and taboos to draw peoples' attention on the dos and don'ts of the community regarding the environment and its resources. Amaowo (2017) asserts that, trado-media refers to the traditional method of communication such as face to face spoken communication, the use of gong, bells, whistle, flutes, horns, drums, leaves example palm frond, clay and face to face spoken communication was not only the first kind of human communication to develop, it has remained throughout history, and is most commonly used. People speaking to people remain the fundamental mechanism of living together. Trado-media is still, generally speaking an effective way of giving information or moving to action producing change in attitudes most especially at the village or rural level.

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 (Arcury, 2020).

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.

The agents of deforestation are those slash and burn farmer's activities (Ambe, Eja, & Agbor, 2015), commercial farmers' ranchers, loggers, firewood collectors, infra-structure developers and others who are cutting down the forest. There is an increase in resource extinction and depletion in most rural communities in Nigeria. The need to improve farming activities has increased demand for fertilizer application by farmers. The use of artificial manure and its attendant problems may render the soil barren after a relatively long period of time of its use. This practice overtime may lead to the destruction of micro and macro-organisms that their activities are necessary and significant in the eco-system. In the same way, plant species that are supposed to be preserved may not be spared. The increase in global warming and ozone layer depletion is greatly caused by the fumes arising from bush burning. Thus, leading to the reduction in the circulation of atmospheric oxygen, climate change, rise in ambient environmental temperature, among other problems.

This study therefore sought to establish if there is any significant influence of traditional method on attitude of farmers towards deforestation in the rainforest zone of Southern Cross River State, Nigeria.

Statement of the problem

The need for farmers to develop positive attitude towards reduction in deforestation has become necessary. This is because most agricultural practices and other human activities such as slash and burn agriculture, hunting with regular setting of forest ablaze, over grazing and continuous farming are some of the ways by which farmers deprive the rainforest of its natural resources. Rapid degradation and natural resources depletion has continued to be a subject of concern. The rate of forest destruction has accelerated significantly since the turn of the 21stcentury.

In Southern Cross River State between 2000-2005 about 30,000 hectares of forest areas have been cleared down for several purposes: road construction, housing estate, erosion control, road expansion and agricultural plantation. The greatest destruction of resources is caused by exploration, excavation and blasting of stones which has greatly affected and led to depletion of forest resources. The removal of forest has significant negative implications on the environment and human beings. The consequences of these unsustainable forest practices include global warming, drought, flooding, loss of biodiversity, flora and fauna, loss of fertile land required for improved food production and so on.

The effort of government to control the unwanted destruction of forest resources and its consequences has not yielded desired results. This unfortunate situation may be attributed to attitude of rural farmers towards forest resources. Government in the past has created avenues

to educate the farmers on sustainable use of the forest. The questions however, remains; how does programme like use of traditional methods influenced the attitude of farmers as regards their continued unsustainable use of the forest? This is the problem to which the study seeks solution to.

Purpose of the study

The main purpose of this study is to examine the influence of traditional methods on the attitude of farmers towards deforestation. In specific terms the study seeks to:

1. Identify the influence of the use of traditional methods (town crier) on the attitude of farmers towards deforestation.

Statement of hypotheses

The following hypotheses were generated to guide the study.

1. Use of traditional methods of mobilization (town crier) does not significantly influence the attitude of farmers towards deforestation.

Literature review

Traditional or indigenous method is a complex set of knowledge and technologies existing and developed around specific conditions of population and communities indigenous to a particular geographic locality, (Perrotta & Trosper, 2012). Similarly, Ayaa and Waswa (2016) assessed the role of indigenous knowledge systems on the conservation of bio-physical environment among the Teso Community in Busia County- Kenya. The purpose of the study is to identified and established the traditional practices on the bio-physical Teso community indigenous environmental practices and also to assess changes in these knowledge systems from the time of kenya's pre-independence to the 2000s era. A descriptive cross-sectional design was used in the study. Both qualitative and quantitative approaches of data collection and analysis were adopted using a total sample size of 384 respondents selected based on Fischer's formula.

Data was collected using various social science methods such as the questionnaire and focused group discussions. All questionnaire based data were cleaned, coded and entered into SPSS for analysis using Chi-square Pearson (P) Values. The results showed that the use of totems, protection of sacred places, prohibitions, gender and age restraints decline by 41.3, 68, 41.8 and 38.2% respectively. Also the use of indigenous environmental knowledge systems has negatively impacted on the state of the bio-physical environment and the deterioration in land fertility and only a few elders using the knowledge systems and there is reduction in the number of rivers, streams and wetlands.

It was recommended that rekindling, recording and preservation of indigenous environmental best practices among local communities such as the Teso for sustainable natural resources management be reinvigorated and integrated in conventional environmental management plans. The study of Mutara (2015) reiterated that the indigenous knowledge systems skills,

knowledge and attitudes when harnessed and appropriately applied are capable of sustaining communities forest zone and can enhance development in areas such as natural resources management, education, healing and management diseases, nutrition, wealth/income/business, entertainment, politics among others.

Amaowo (2017) asserts that, trado-media refers to the traditional method of communication such as face to face spoken communication, the use of gong, bells, whistle, flutes, horns, drums, leaves example palm front and clay. Face to face spoken communication was not only the first kind of human communication to develop, it has remained throughout history, the most commonly used. People speaking to people remain the fundamental mechanism of living together. Trado-media is still, generally speaking an effective way of giving information or moving to action producing change in attitudes most especially at the village or rural level.

Odok (2017) emphasized that traditional method is another means of reaching out to the community people on environmental issues of public concern. Traditionally, many communities have various methods of addressing issues that bother on the management of environmental resources such as land, water and forest. There are sacred streams, pocket of forests, certain species of plants and animals that people are forbidden. The severity of this taboo is that, any community members that disobey or go against this stringent is burnished from the community, except where such individual is required to provide certain sacrificial items for purification. For example, the Betem people in Biase Local Government Area of Cross River State do not kill or eat python. They see python as a sacred animal that possesses certain spirits that guide the people. Indigenes as well as non-indigenes are forbidden from killing it. Any individual or group of persons that go against this law is burnished from the village. Not even his corpse is permitted into the community if in case he dies in a strange place.

Etiendem, Luc-Hens and Pereboom (2021) established a study on Traditional Knowledge Systems and the Conservation of Cross River Gorillas; Bechati, Ossimondi, Besali Forest Cameroon. The study assesses local perceptions of human gorillas' totemic kinship practices and taboos against hunting and eating of gorillas. A total of 184 questionnaires were distributed and the result shows that taboos are still respected and are mainly enforce through traditional councils by the use of town crier, signs and symbols. To remained people about certain taboos, may have been responsible for the achievements recorded so far in sustainable conservation and utilization of resources in various locations in Nigeria. Since environmental education seeks principally to foster awareness and knowledge of environmental problems, influence attitudes and skills for environmental protection, and mobilize communities to participate in environmental conservation programmes as well as understanding the role of the environment in the world view of a society is crucial if community environmental education and action programmes are to be effectively implemented.

Meribe (2014) agrees that, oral traditional method of environmental education represents the channels in which undocumented messages are passed on to the listeners or audience. It is commonly used in the villages and entire rural setting. It includes a face to face spoken communication, traditional stories and proverbs, folklores/songs, folktales, town-crier, gong, drums, and leaves. The author maintained that, the use of these media methods modifies and improves human behavior and interaction with the environment in order to benefit from it. Through its usage, it helps people to gain knowledge of new ways to care for the environment, such as attitude change and participation which are vital for working towards the solution of environmental problems. The main goal of environmental education is to find solution to environmental problems.

Everest (2020) explained with the rich African culture of Nigeria which could be found in many communities and various means of traditional communication. Each community environmental education has to carefully sort out those ones which are common to a particular community and use them to their utmost advantage. The talking drums for example, appear to be very common in many communities in Nigeria; they can be used in sending messages across to the indigenes. The use of talking drums varies with communities. For instance, some communities use talking-drums or wooden-gong to summon people in the community to a meeting. This method can be used to address the issue of forest resources exploitation, hence deforestation is one of the general factors of environmental issues in which agricultural development, urban growth, industrial expansion and pressures from increasing population has reduced the variability, stability and diversity of the forest resources (Ibrahim, 2022). In other communities, wooden-gong is used in place of drums to carry out a similar function.

Amongst the Ibibios of Akwa Ibom State, drums are used to give orders, impose restrictions or give directives. Drums can therefore, be used by the traditional rulers to give orders restricting people from committing a particular havoc in the environment like bush-burning, farming in forbidden areas, cutting tree in forests considered as sacred forests, fishing or washing clothes in streams that are conserved or even hunting in certain restricted areas. However, some ethnic groups use bells in place of drums to send out information. The Quas of Cross River State use bells to invite people to a meeting or to hand down orders by the traditional ruler. Generally, amongst the people of Cross River and Akwa Ibom States, the rapid tolls of the big church bells signify a disaster. It could be a fire outbreak, tribal warfare, burglary and stealing instance or any other commotion of great consequence in the society. It is a very effective way of raising an alarm in societies that can readily interprets the message. It is therefore possible to use big bells when there are instances of indiscriminate bush burning inviting everybody to come to the rescue (Akpama, 2018).

Maiyanga and Adamu (2015) argues that, the use of symbols for communication is common to some societies, certain objects when kept or placed in special ways and at special places connote certain meanings. For instance, if the village or an individual wish to place a ‘stop

order' on a particular cultivated land, all needs to do is to cut a fresh palm front and hang it conspicuously on the farmland. It does not call for any further interpretation for it is at once clear that there is one form of problem or the other on that land. This is common to some ethnic groups, especially the Ibibios. Other people make use of tree branches with leaves. For example, if one notices some up-rooted shrubs or leaves at intervals from a distance, placed on the high-way, it is some warming that there is an obstruction either in the form of a broken down vehicle, an accident scene or there is a dangerous pothole. As earlier indicated, symbols should be used freely in the communities to which they belong to help prevent some of our environmental hazards.

Gebremichael, Yakkob and Mekonoen (2015) holds that, symbol could be placed on a developing erosion site restraining people from farming or cattle grazing or carrying out any other activities on the spot for fear of aggravating the situation. It is however being emphasized that, by tradition the environmentalist does not possess the right to enter into a village and place a symbol himself without the consent of and approval of the community leaders. Etiendem, et al (2021) confirms that, in many cases, traditional knowledge has been orally passed for generations from person to person. Some forms of traditional knowledge are expressed through stories, legends, folklore, rituals, songs, and even laws. Many uncivilized and modern communities today still make use of these methods to manage and preserve environmental resources and other forms of lives that exist in the environment.

Traditional knowledge refers to the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, traditional knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animals' breeds. Sometimes it is referred to as an oral tradition due to the fact that, it is practiced, sung, danced, painted, carved, chanted and performed down through millennia. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, forestry and environmental management in generation (Adamu, 2014).

Methodology

The research design adopted for this study was Ex-post facto design. The Ex-post facto design was considered suitable for this study because the manifestation of the independent variables has already occurred. Another reason is that the researcher has no direct control over the independent variables that is use of traditional methods because it has already occurred in the population. The study area was Southern Cross River State; Nigeria. The Southern Cross River State is located between latitude 5^0 41^1 50^{11}East Greenwich Meridian and longitude 8^0 $20^1 25^{11}$North of the equator. It covers an area of 15,165,54km^2 while the remaining forested area is 8,290km^2. The Local Government Areas in the zone are Akamkpa, Akpabuyo, Biase,

Odukpani, Calabar Municipality, Calabar South and Bakassi Local Government Areas (Geography and Environmental Science, 2017).

It is bounded by Yakurr and Etung Local Government Areas to the north, Akwa Ibom and Abia State to the West, the Atlantic Ocean to the South and the Republic of Cameroon to the East. The area has an undulating topography, which rises and falls gradually. The inhabitants of the rural areas in Southern Cross River State are mostly farmers, traders, hunters, stone merchant and fishermen.

Southern Cross River State has a projected population of 1,187,454 (National Population Commission, 2016). The vegetation of the area is made up of tropical high forest which are Akamkpa, Biase and large part of Odukpani, the mangrove and swamp are Calabar Municipality, Calabar South, Akpabuyo, Bakassi and some part of Odukpani, the area has the largest percentage of the remaining forest in the entire Cross River State (Cross River National Park, CRNP, 2016). The socio-economic activities of the people are predominantly farming, gathering, hunting, fishing and logging. Large and small scale farming which serves commercial and subsistence purposes is also practiced in the area. Some of the crops cultivated include plantain, banana, cassava, yams, melon, maize, vegetables etc. which are processed and sold to generate revenue. The hunting of animals for bush meat in forest is carried out using local traps, bows and arrows and guns. Animals commonly hunted include monkey, porcupine, bush pigs, chimpanzee, drills, cutting grass and snakes etc. The reason for the selection of Southern Cross River State is because the zone harbours biodiversity.

The population of the study consisted of all the farmers in Southern Cross River State. Records from the State Ministry of Agriculture and Water resources showed that they are two hundred and forty- eight thousand six hundred and eighty (248,680) farmers in the one hundred and seventy-seven (177) communities in the study area.

The multi- stage sampling procedure which comprised stratified random sampling technique, simple random sampling and proportional simple random sampling technique. The proportional simple random sampling technique was adopted in selecting five percent (5%) that is five hundred and seventy-six community-members used as respondents for the study. The instrument used for data collection in the study was questionnaire tagged Influence of traditional method (ITMQ) on Attitude of Farmers towards Deforestation Questionnaire (AFTDQ). It was designed using four point Likert scale of strongly agree (SA), Agree (A), Disagree (D) and strongly disagree (SD) and contained fifteen (15) items that measured the sub- variables of the independent and dependent variables. The validity and reliability of the instrument were ascertained before the instrument was finally used in the work. Data obtained was analyzed using simple linear regression analysis.

Results

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

Table 1: Simple regression analysis of the influence of traditional methods 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	.009	.000	.002	3.42620	
	REGRESSION ANOVA				
Model	SS	DF	MS	F	Sig
Regression	.472	1	.472	.040	.841
Residual	5822.450	566	11.739		
Total	5822.950	567			
	REGRESSION COEFFICIENTS				
	Unstandardized coefficients		Standardized coefficient	t	Sig
	B	Std error	beta		
(Constant)	14.852	.704	.	21.090	.000
Traditional methods	.009	.047	.009	.201	.841

The result of analysis as presented in Table 1 showed that the predictor or independent variable (traditional methods) does not significantly influence the predicted variable (attitude of farmers towards deforestation). The influence is not significantly positive (.040). The regression coefficient showed that traditional methods (β = .009; t = .201; $p<.05$) is not statistically significant in the prediction of attitude of farmers towards deforestation of the rainforest in Southern Cross River State.

Discussion

It was revealed from the finding obtained from analysis and testing of the hypothesis that the null hypothesis was upheld. This implied that there is no significant influence of traditional methods on attitude of farmers towards deforestation of rainforest in Southern Cross River State. This finding contradicted the finding of Meribe (2014) which reported that, oral traditional method of environmental education represents the channels in which undocumented messages are passed on to the listeners or audience. It is commonly used in the villages and entire rural setting. It includes a face to face spoken communication, traditional stories and proverbs, folklores/songs, folktales, town-crier, gong, drums, and leaves. The author maintained that, the use of these media methods modifies and improves human behavior and

interaction with the environment in order to benefit from it. Through its usage, it helps people to gain knowledge of new ways to care for the environment, such as attitude change and participation which are vital for working towards the solution of environmental problems. The main goal of environmental education is to find solution to environmental problems.

The finding of this study also contradicted the finding of Maiyanga and Adamu (2015) which revealed that the use of symbols for communication is common to some societies, certain objects when kept or placed in special ways and at special places connote certain meanings. For instance, if the village or an individual wish to place a 'stop order' on a particular cultivated land, all needs to do is to cut a fresh palm front and hang it conspicuously on the farmland. It does not call for any further interpretation for it is at once clear that there is one form of problem or the other on that land. This is common to some ethnic groups, especially the Ibibios. Other people make use of tree branches with leaves. For example, if one notices some up-rooted shrubs or leaves at intervals from a distance, placed on the high-way, it is some warming that there is an obstruction either in the form of a broken down vehicle, an accident scene or there is a dangerous pothole. As earlier indicated, symbols should be used freely in the communities to which they belong to help prevent some of our environmental hazards.

Conclusion

The study concentrated on the influence of traditional methods on 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 no significant influence of traditional methods on attitude of farmers towards deforestation. The need to mobilize people towards participation in environmental protection and management has become imperative in the midst of increasing incidence of environmental degradation. 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.

Recommendations

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

i. Environmental educators and advocates should ensure that more seminars on environmental conservation are organized regularly to help change attitude towards deforestation in the study area

ii. 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
iii. Relevant authorities should continue to ensure that residents of the study are exposed to and encouraged to attend workshops that would help develop their skills towards environmental management.
iv. Members of forest communities should be continually mobilized to participate actively in environmental issues affecting their communities in order to change negative attitude towards deforestation among members of these communities
v. The use of traditional media should be encouraged in the study area in order to diversify the medium through which environmental information is disseminated for continuous attitude change among members of forest communities.

References

Ambe, B. A., Eja, I. E., & Agbor, C. E. (2015). Assessment of the impacts and people's perception of bush burning on the grasslands and montane ecosystems of the Obanliku Hills/Plateau, Cross River State, Nigeria. *Journal of Natural Sciences Research*, *5*(6), 12-20.

Akpama, A. E. (2018). *Conserving the world's biological diversity.* Washington: International Union for Conservation of Nature (IUCN).

Amaowo, S. E. (2016). The green economy: Environment, sustainable development and the politics of the future. *Journal of Environmental Science,* 6 (4), 86-96.

Amaowo, U. G. (2017). The green economy: Environment, sustainable development and the politics of the future. *Journal of Environmental Science,* 2 (4), 71-80

Anija-obi, F. N. (2021). *Environmental education*: *planning process and management*. Calabar, University of Calabar Press.

Arcury, T. A., (2020). *Environmental attitude and environmental knowledge.Human organization. 49(4), 300-304.*

Ayaa, D. D & Waswa, F. (2016). Role of indigenous knowledge systems in the conservation of the bio-physical environment among the Teso community in Busia country, Kenya. *African Journal of Environmental Science and Technology. 10 (12), 467-475*

Bullem, M. A. (2012). The Nigeria environment: Conserving the ecological biomes. *Journal of Science Education*, 6 (2), 29 – 34.

Eneji, V. C. O., Ogar, D. A., Essien, C. K., & Bullem, A. G. (2014). An assessment of deforestation rates in Bekwarra Local Government Area of Cross River State, Nigeria. *Journal of Environment,* 3 (2), 28-37.

Etiendem, D. N., Hens, L., & Pereboom, Z. (2021). Traditional knowledge systems and the conservation of Cross River gorillas: A case study of Bechati, Fossimondi, Besali, Cameroon. Ecology and Society, 16 (3), 22-31.

FAO. (2017). *Deforestation in developing countries of the world*. Rome: Food and Agricultural Organization

FAO. (2012). *The State of food insecurity in the world: Economic growth is necessary but not sufficient to accelerate reduction and malnutrition.* Rome: Food and Agricultural Organization

Gebremicheal, A., Yakob, G., & Mekonnen, G. (2015). Assessment of farmer's perception and adaptation mechanism to soil erosion problem in Shomba Kichib, Gimbe, district, Kaffa zone, South West Ethiopia. *African Journals of Agricultural Research,10(27), 268-276*

Ibrahim, A.M. (2022). *Introduction to environmental problems and management*. Kano: Wa'adallah Environmental Consults.

Iyorza, S., & Bassey-Duke, V. (2016). Perception of social and behaviour change communication media in Cross River State, Nigeria. *Journal of Theatre and Media Studies, 1(2),288-296.*

Maiyanga, Y. A., & Adamu, Y. Y. (2015). Effective communication as a means of conserving biodiversity.*Journal of Environmental Science,* 7(3), 83-96.

Meribe, N. (2014). Rethinking conservation communication in rural Africa. A case for indigenous African communication system (IACS). *Malaysian journal of communication, 30(1), 53-63.*

Mutara, M. (2015). Knowledge apartheid in disaster management discourse: is marrying indigenous and scientific knowledge the missing link? *Jambajournal of disaster risk studies, 7 (1), 76-84.*

.Oates, J. F., Mcfarland, K. L., Groves, L. L, Bergl, R. A., Linder, J. M,& Distell, T. R. (2023).Protecting forest fauna in Cross River State, Nigeria, in: Taylor, A. B; & Goldsmith, M. L.eds the Cross River Gorilla; Natural History and status of a neglected and critically endangered subspecies. Cambridge, UK Cambridge Universities press.

Odihi, J. (2023). Deforestation in afforestation priority zone in Sudano-Sahelian Nigeria. *Applied Geography*, 23 (4), 227-239.

Ogunjobi, J. A. Meduna, A. J., Oni, S. O., Inah, I. E., & Enya, D. A. (2020). Protection of staff job perception in Cross River National Park, Southern Nigeria, Middle-East. *Journal of scientific research*, 5, 22-27.

Oloruntoba, A. and Adetokumbo, O. (2016). Determinants of household's participation in social forestry in a zone of northern Nigeria *Journal of food. Agriculture and environment*, 4(2), 320-326.

Perrotta, J. A., & Trosper, R. L. (2012). *Traditional forest related knowledge: Sustaining communities, ecosystems and biocultural diversity*. London: Springer.

Philip, F., Akintoye, O. A., Olorundami, T., Nkpena, C. O., Ukata, S. U & Harrison, E. U. (2014). Forest resources of Cross River State: Potentials, threats and mitigation measures. *Journal of Environmental Science, Toxicology and food Technology,* 8 (6), 64-71.