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Environmental Legislation and Biodiversity Conservation For Community Development in Cross River State, Nigeria

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Keywords

Environment, Legislation, Biodiversity, Conservation, Community Development.

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Abstract

This study sought to establish the relationship between environmental legislation and biodiversity conservation for community development in Cross River State. To achieve the purpose of the study, two hypotheses were formulated and tested at .05 level of significance. Literature was reviewed according to the sub-variable of the study. The study adopted the "ex-post facto research design''. The study population was made up of 4496 registered farmers from which the respondents were drawn. The sample for this study comprised 600 registered farmers residing in 12 selected communities from the study area. The instrument for data collection was a 20 item structured questionnaire. Face validity of the instrument was done by the supervisors and two experts in tests and measurement. The Cronbach Alpha reliability technique was used to ascertain the instrument's reliability, which ranges from .07 to .82, which certifies the instrument's reliability to measure the research variables. The administered questionnaire analysed data using simple regression analysis for the two hypotheses. The study's findings revealed that national park acts relate significantly to biodiversity conservation, and national environmental standard and regulation enforcement agencies significantly relate to biodiversity conservation in Cross River

	State, Nigeria. Based on the findings of the study, it was recommended, among other things, that; The management of the National Park should be fully empowered in terms of human, material and financial resources to protect the biodiversity in the pack from intruders that are mostly from the local communities around the Parks and National Environmental Standards, Regulation Enforcement Agency should be credible enough to uphold environmental standards without fear or favour.

Introduction

Biodiversity conservation has become one of the most significant challenges hampering community development in Cross River State in recent times. Cross River State is richly blessed with biological biodiversity. The Cross River State "rainforest'' plays a very significant role in providing and sustaining resources necessary for the survival of community residents. These resources include the protein-producing animals, the trees that are turned into logs of wood used to build houses and bridges, the watersheds that protect the streams and springs from which people draw their water, and the forest, which also provides the essential oxygen needed by humans while regulating the temperature of the Earth's surface. The importance of biodiversity in community development is enormous, but unfortunately, people's attitude towards ''biodiversity conservation'' is abysmally low and calls for concern (Salami, 2018).

Generations of community members have come and gone. However, biodiversity is still undergoing unprecedented changes arising mainly from anthropogenic factors such as unsustainable logging practices, unsustainable agricultural practices (indiscriminate bush burning, continuous farming, among others) and low awareness creation on biodiversity conservation strategy. Increasing human activities in Cross River State, which adversely affects the equilibrium state of the Environment, has resulted in a high rate of biodiversity depletion. With increasing awareness of the dangers posed by such challenges, the government and non-governmental organizations have risen to the global challenge of ensuring the restoration, preservation and conservation of biodiversity through the instrument of the law. African governments, for instance, are making increasing efforts to ensure that no stone is left unturned in controlling the rate human activities affect biodiversity, which adversely affects human health, thereby affecting community development in the state.

The forest, a biological community, consisting of a complex association of tree plants, water sources and soils that have evolved over millions of years, provides habitats for millions of biodiversity (plant and animal species). The forest is directly threatened by the ''depletion and

degradation'' of natural resources on which plants depend. Some 20,000-50,00km of potentially productive land is lost annually worldwide through deforestation (FAO, 2012). Globally speaking, deforestation activities affect the protective, productive, and regulating functions of biodiversity; some of these "deforestation" activities have decreased the vegetative cover where 2.9 million Km2 of the earth are said to be at a very high risk of the impact of desertification, food shortages, and global warming (FAO, 2012). Cross River State is richly blessed with an abundance of biodiversity that improves lives. Several devices have been invented to promote or encourage development to enhance agriculture, industrial and transportation activities. These activities, while providing the raw materials for the production of goods and services, have also resulted in pollution of the land, atmosphere and rivers, which is detrimental to the land and marine biodiversity.

The disappearance of biodiversity in Cross River State has partially been blamed on hunting/poaching activities which have promoted the cutting down of trees and the burning of bushes in most cases before hunting takes place. There is also wanton destruction of the forest (deforestation) for commercial timber and farming purposes. These loggers deforest the forest with impunity, as many of them have the backing of top government officials. The Boki forest used to be a home for animals like elephants, tigers, leopards and buffalo but these animals are now on extinction due to wanton logging and hunting activities that have dominated the area. The Ikom and Etung forest are not exempted from this wanton destruction. The destruction of the forest has affected the development of the communities negatively. Logging activities are increasing daily in most parts of the state. The Cross River State governments have made a concerted effort in an attempt to conserve biodiversity, thereby enhancing community development in the state. As a result of conserving the state's biodiversity, the state government banned logging activities in 2010. Also, the Cross River State forestry commission bill was signed into law on Wednesday, September 8th, 2010, in response to biodiversity conservation. Environmental non-governmental organizations have played vital roles in biodiversity conservation in the state.

These environmental NGOs include CERCOPAN, PANDRILLUS, Green Planet Initiative International and NGO coalition for Environment (NGOCE), among others. These NGOs have contributed significantly to the study area's conservation of plants and animal species. However, despite the state government and environmental NGOs efforts, biodiversity depletion is still increasing. Most of the Law Enforcement Agencies saddled with the responsibilities of protecting biodiversity seem to be compromising with the loggers and hunters. At times, some of these hunters set the forest ablaze to achieve their selfish aim, thereby destroying the forest that harbors wildlife. The pressure of these human activities on the Environment has dramatically transformed the nature of biodiversity. National and state governments are vital for preserving biodiversity by passing laws requiring the protection of species and habitats. However, the independent and post-independent eras have witnessed the emergence of legal frameworks that enhance effective environmental policies (Rousel, 2017). Environmental policies refer to policies made to secure a quality environment for good health

and well-being. Implementing and enforcing such policies and programmes are necessary to attain their objectives; the instrument of the law is the primary means. The law refers to a body of rules enacted to achieve objectives.

Establishing the Federal Environmental Protection Agency Act (FEPA) in 1998 was a turning point for several states' governments to establish their own Environmental Protection Agencies. FEPA was later repealed by the National Environmental Standard Regulation Enforcement Agency (NESREA) Act in 2007. In line with the above effort of ensuring the protection of biodiversity, the Cross River State forestry commission is saddled with the responsibility of conserving biodiversity in the state in September 2010, Cross River State government signed the state forestry commission bill into law. This is considered a significant step towards the sustenance and strategic management of the vast forest reserves in the state. In 2019, the Liyel Imoke-led administration banned logging activities in the state rainforest. However, logging activities went undercover by powerful government officials who used their offices and powers as a shield to perpetrate their deeds. The Cross River State Forestry Commission Law provided a legal framework for the conservation and sustenance of the forest and ecosystem in the state, which harbours about 60% of the total forest reserves in the country (CSFCL, 2010). The law empowers the forestry commission to regulate the activities of ministries, parastatals, local government areas, departments, organizations and statutory bodies relating to forest resources, wildlife conservation and sustainable forestry.

The Cross River State’s rainforest is fast depleting because of human influences. This human influence includes; logging, arable crop farming, clearing for pasture, hunting/poaching activities, and using chemicals in fishing and government activities such as road construction. The effect of biodiversity depletion has led to a decline in forest cover, forest degradation, soil impoverishment, general deterioration of environmental conditions, and severe economic implications. However, the Cross River State forestry commission laws 2009, section 86-98, guide against illegal forest businesses like firewood collection, timber production, and indiscriminate hunting and fishing, which rural citizens take as one of their primary occupations. Environmental Impact Assessment Act (EIA) is aimed at creating awareness of the general principles, procedures and methods to enable the prior consideration of environmental impact assessment on specific public or private. Environmental impact assessment is a principal instrument in achieving biodiversity conservation. Development projects' natural habit loss and fragmentation are the major causes of biodiversity loss (Trewek & Thompson, 2007). Environmental impact assessment act awareness will sensitize the public to the dangers of not considering the effects of development projects on biodiversity. As well as enlightening the public on the benefits of Environmental Impact Assessment (EIA) consideration on biodiversity conservation.

Cross River State Forestry Commission Law made provision for establishing a state forestry commission to conserve biodiversity in the state. Biodiversity loss has led to a decline in forest cover, soil impoverishment, general deterioration of environmental conditions, and severe

economic conditions. However, the Cross River State forestry commission law guides against illegal forest businesses like unsustainable logging and indiscriminate hunting. This law has contributed immensely to biodiversity conservation in the state. The endangered species act is a crucial domestic and international conservation legislation that provides a framework to conserve and protect endangered and threatened species and their habitat. The endangered species act concentrates on managing Nigerian wildlife and some of their species in danger of extinction due to over-exploitation (Endangered Species Act, CAP, E9, LFN, 2004). The endangered species act has contributed immensely to biodiversity conservation in the state.

The convention on biological diversity is the international legal instrument for conserving biological diversity. Biological diversity is the variability amongst organisms, including terrestrial, marine and other aquatic ecosystems and their ecological complexes. Diversity may be within species, between species and in the ecosystem. Convention on biological diversity mainly guides the development of legislative mechanisms in Nigeria and Cross River State. The convention on biological diversity has played a significant role in biodiversity conservation by promoting the development and application of domestic laws for the conservation and sustainable use of biological diversity.

National park management act awareness enlightened the public on the purpose of the National Park, which is to establish protectorates and use them for resource conservation, water catchment protection, wildlife conservation and maintenance of the national ecosystem balance. National Park has been instrumental to wildlife conservation in the study area. National environmental standard and regulation enforcement agency act awareness is the awareness of an act that provides for the establishment of NESREA charged with the responsibility for protecting and developing the Environment in Nigeria and related matters. NESREA is responsible for protecting Nigeria, the Nigerian Environment in which the study area (Cross River State) is inclusive. The national park is concerned with establishing protectorates used for resource conservation, water catchment protection, wildlife conservation and maintaining the national ecosystem balance (National Park Act, AP, N65, LFN 2004).

Muhumuza (2017) conducted a study on factors affecting the success of conserving biodiversity in national parks: a review of a case study from Africa. He revealed that two approaches are commonly used to sustain biodiversity in national parks. The study seeks to discover why some approaches adopted in the management of the parks have been successful and others unsuccessful at conserving biodiversity in national parks. A metadata analysis of 123 documents on case studies about the conservation of biodiversity in national parks was conducted. A series of search engines were used to find papers for review. Results showed that socio-economic and cultural factors are responsible for the success and failure of conserving biodiversity in national parks in various contexts. The highest percentage in successful case studies (66%) and unsuccessful case studies (55%) was associated with creating and managing the parks. These results suggest that future conservation approaches in National Parks in Africa should emphasise the human dimension of biodiversity conservation more than the purely

scientific studies of species and habitats in national parks. The result also shows that the nation enhances community development.

Isugo and Obiola (2015) studied community participation in wildlife conservation and protection in the Oban Hills area of Cross River State, Nigeria. The study aimed to examine the nature and extent of community-based wildlife management in the area by identifying an effective, ethical way of investigating the goals of wildlife conservation with the needs of the rural poor in the tropics. A descriptive survey method was used to collect data; five villages were selected based on their proximity to the park while a simple random sampling technique was used to draw a sample of 288 respondents". Data was obtained through interview guides and questionnaires with the participants in the Environment. The findings of the analysis indicated that community leaders and youths play a crucial role in educating their members on the importance of wildlife conservation and guarding their forests against poachers, thereby enhancing community development.

The finding of the above-reviewed study was considered relevant to this review based on the recommendation of the researchers that the Cross River National Park (CRNP) should enforce policy through public enlightenment, arrest violators and liaise with other government agencies and enforcement of local taboos within the communities.

In their 2017 study, Bassi Monguno and Joseph examined how the Kida village in Borno state's Hawul protected the environment. In particular, community involvement in environmental protection will be evaluated as part of the study's evaluation of the local environmental management system. A sample of 150 respondents completed questionnaires to provide data on the study population, which totals 120,733. The researchers focused on group discussions and in-depth interviews. The findings revealed a significant difference between problems associated with indiscriminate tree felling, bush burning, overgrazing, and ignorance among community members' willingness to participate. It was recommended, among others, that the government play an important role in boosting community participation by replacing trees, patrolling and employing conservation workers. In addition, public enlightenment should be considered in the community on the dangers of not protecting and conserving the Environment.

Ayaa and Waswa (2015) studied indigenous knowledge systems on farmers' attitudes towards deforestation in the southern Kenya region. A survey research design was employed for the study. The population of the study was one thousand nine hundred and two (1902), and the sample size for the study was nine hundred and fifty-one (951) respondents drawn from the study area. Simple and stratified sampling techniques were adopted for the study; the questionnaire was the only instrument used for the study tagged ''indigenous knowledge systems and attitudes of farmers towards deforestation questionnaire (IKSFDQ) was used for data collection''. One-way analysis of variance (ANOVA) was the statistical tool used for data

analysis. The use of indigenous knowledge systems greatly impacts farmers' attitude towards deforestation in rainforest zones.

The 1991 National Park Decree 36 established five national parks as well as a governing board for the preservation and conservation of vegetation and wild animals in the national parks, as well as advising the government of the adequacy and efficient utilization of facilities for the growth and protection of floral and faunal resources (Asuquo, 2016). The Federal Government policy goal on the conservation of biodiversity is to ensure the sustainable use of forest resources and preserve the many benefits of soil, water, and wildlife conservation for economic development. Among the current priority programmes in Nigeria are the extension of national parks and reserves and the compilation of flora and fauna of Nigeria (Ogar, 2009).

The Nigerian Biodiversity Strategy and Action Plan (NBSAP) reviews the status of biodiversity conservation in Nigeria to fill the gaps identified in the country study programme and develop strategies and action plans to bridge the gaps in the conservation efforts. The first draft report for four selected eco-regions has been produced and circulated among stakeholders for their discussion and input. (Oyeshola, 2008). The inputs from the planned stakeholder workshop will be incorporated into the second draft report to be discussed at the national workshop pending the presentation of the final report to the government for approval.

Resulting for governments efforts in biodiversity conservation, according to Owolanbi (2010), the following achievements have been made:

a) There are 32 game reserves/sanctuaries and six national parks in place, covering a total of about 4,293,800 ha scattered in different areas of the country;
b) There are 12 strict nature reserves; and
c) There are 13 proposed game reserves/national parks covering about 372,000 ha in the country.

The Cross River State Government believed that a large functioning national park would impact favourably on tourism development and the maintenance of climate and water supply for the State as a whole. The establishment of the Cross River National Park has helped a great deal in strengthening village institutions and increasing incomes following investment by farmers in new improved indigenous techniques. Lands under intensive sustainable use, stable agro-forestry or intact and regenerating forest cover are extended. Lawal (2008), noted that the first national park was established in 1872 at Yellowstone in the United States of America. Since then, many more national parks have been created worldwide. Established in the 1920s and 1930s, national parks in eastern and southern Africa have been particularly successful. They have become major tourist attractions generating significant foreign exchange earnings for their countries.

Nigeria's idea of a national park establishment is a very recent development (Lawan, 2005). Lawan further noted that in 1979 Kainji Lake was established as the first national park in the

country. Then Chad Basin, Cross River, Gasha-gunti, old Oyo and Yankari were established to bring the number to six national parks. In 1999 Kamuku and Okomu national parks were added through the promulgation of Decree 46 of 1999, bringing the number of national parks to eight. Among other objectives, these parks were established to protect representative samples of Nigeria's varied ecosystem from the semi-arid or Sahel to Sudan and Guinness Savannas, wetlands, rainforest, mountain etc. It is encouraging to note that these national parks are all quietly making progress. Cross River State is currently beset with many environmental problems such as deforestation, drought, desertification, sheet, gully and coastal erosion and flooding, loss of biological resources, etc., without doubt; the national parks stand to offer some antidote to these ills. The national parks are today's investments for Nigeria's tomorrow so that generations yet unborn can have a secure future.

Lawan (2005) notes that the above-mentioned national park benefits are mandible by the National Park Decree N0.36 of 1991. According to this Decree, the Nigeria National Park Service has statutory responsibilities for the following, amongst others:

a) To preserve, enhance, protect and manage vegetation and wild animals in the National parks;
b) To advise the Federal Government on the development and preservation policy of the National parks, including the financial requirements for the implementation of such policy, and
c) To advise the Federal Government on the declaration of areas for the purpose of protecting wildlife species, biotic communities, and sites of particular interest or of aesthetic value, the service considered may be declared as national parks under this Act.

The primary objectives of the National Park are hence geared towards:

i. The conservation of selective and representative samples of wild communities in Nigeria.
ii. The establishment of an ecologically and geographically balanced network of protected areas under the jurisdiction and control of the Federal Government,
iii. The protection of endangered species of wild plants and animals and their habitats;
iv. The conservation of wildlife throughout Nigeria also that the abundance and diversity of their species are maintained at the optimum level commensurate with other forms of land use in order to ensure the continued existence of wildlife for their sustainable utilization for the benefit of the people;
v. The preservation of outstanding scenic, natural, scientific, recreational and other values in the national parks and
vi. The protection and maintenance of crucial wetlands and water Catchment areas.

According to the National Park Act 36 of 1991, the mission of a national park is to manage and regulate the use of these unique ecosystems designated as national parks of such means and measures to preserve and conserve Nigeria heritage, particularly the fauna and flora, the habitats they live in, and the unique sceneries they afford. Igwe (2011) found that the creation

of Cross River National Park (CRNP) has made a significant contribution to biodiversity conservation in Cross River State. Cross River State has benefited immensely from all the benefits attached to national parks, courtesy of the National Park Decree 36 of 1991.

While the FME is for natural resource management, the responsibility for conservation and management of natural resources with the protected areas that will be assisted by the Global Environment Facility (GEF) component of LEEMP resides with National Park Services Decree No. 46 of 1999. More specifically, the national park services are responsible for the conservation of selected representative examples of wildlife communities in Nigeria, the establishment of an ecologically and geographically balanced network of protected areas under the jurisdiction and control of the Federal Government and, among other responsibilities, for the conservation of biodiversity in Nigeria (Cross River National Park 2003). One of the functions of the national park service given in Decree No. 46 is cooperating with other agencies to promote and develop alternatives to wildlife as a source of income for the rural population.

It was recommended that a conference on environmental legislation be made compulsory for all forest stakeholders to educate the people on the need to conserve their forest. Administered by the Ministry of Environment, the national environmental standards and regulation enforcement agency (NESREA) Act of 2007 repealed the federal environmental protection agency (FEPA) Act. NESREA is the embodiment of laws and regulatory focus on protecting and sustainable development of the Environment and its natural resources. The following sections are worth noting:

Section 7 provides authority to ensure compliance with environmental laws, local and international, on environmental sanitation and pollution.

According to Ladan (2011) the National Environmental Standards and Regulation Enforcement Agency is currently the primary Federal body charged with protecting Nigeria's Environment. NESRA was created by the NESREA Act 32. In line with section 20 of the 1999 constitution, the federal government established the agency as an institution under the Federal Ministry of Environment, Housing and urban development supervision. The NESREA Act was created to replace the defunct federal environmental protection agency (FEPA). In examining the enforcement of preventive principles in Nigeria, it is necessary to look at the establishment, mandate and powers of NESREA established by the ‘‘NESREA” Act, 2007.
NESREA was established on 30 July 2007 as a “body corporate with perpetual succession and a common seal, which may sue and he sued in its corporate name’’. It is responsible for enforcing environmental standards, regulations, rules, laws, policies and guidelines; its authority extends to enforcing environmental guidelines and policies, such as the national policy on Environment, 1999. This is an indication of the importance and relevance of environmental standards, rules, policies and guidelines. Although they may not have the force of the law, they are a vital and necessary element in the ‘‘protection and prevention of the environment” (Ladan, 2011).

Abang, (2018) researched the "NESREA'' Act and environmental sustainability in Rivers state Nigeria. The purpose of the study was to ascertain the efficacy of the NESREA Act to environmental sustainability in Rivers State, and the survey research design was adopted for the study with a sample of 220 respondents. The questionnaire was used as Instrument for data collection; simple regression analysis was the test statistic used to analyze the data. The result showed that the NESREA Act significantly positively influences environmental sustainability. Similarly, Valery (2019) studied NESREA Act and Biodiversity conservation in Ogoniland, Rivers State, Nigeria. The purpose was to determine the extent to which NESREA Act has contributed to biodiversity conservation, the ex-post-facto research design was used with a sample of 450 respondents, with the help of a well-structured questionnaire, data were collected from the 450 respondents and analyzed using simple and multiple regression. The results showed that the NESREA Act has contributed immensely to biodiversity conservation in the study area.

Effanga, (2017) conducted a study on community participation and the attitude of farmers towards deforestation in southern Cross River State, Nigeria. The researchers adopted an ex-post facto research design. The study population was one thousand six hundred and (1602) respondents drawn from the study area. The study's sample size was eight hundred and one (801) local farmers. Simple and stratified random sampling techniques were adopted for the study, tagged community participation and farmers' attitudes towards deforestation questionnaire (CPFADQ). One-way analysis of variance (ANOVA) was the statistical tool used for analyzing data collected. Based on the findings, it was concluded that community participation towards deforestation is a key strategy in management. These strategies will stimulate community participation in resource management and boost forest management and employment opportunities.

Food security is a powerful community development tool pertinent to improving access to food and strengthening food policies and systems. Food security is recognized as one of health's most critical social determinants. It has been linked to the increased prevalence of chronic diseases such as diabetes, hypertension, and cardiovascular disease (Asor, Ojong, Erim, Tawo and Ojuah, 2021).

Ogar (2013), in support of the above author, believes that local communities should be involved in resource management by gradually handling the harvesting and management activities. Nigeria, and indeed Cross River State, through the Federal Environmental Protection Agency (FEPA) Act, had achieved the following significant milestones in environmental protection and conservation of biological diversity, development of the National Policy on the Environment, the establishment of the National Council on Environment (NCE); establishment of a National Advisory Committee (NAC) on Agenda 21: a review of National Environmental Policy guidelines and standards; enactment of

environmental impact assessment (EIA) law, the establishment of a National Energy Policy; and enactment of Nuclear Safety and Radiation Protection Legislation, implementation of the National Agenda 21: and initial development of vision 2010 strategy.

As a consequence of the Environmental Protection Act, the National Environment Board was created in 1990. It provides a forum for consultation and harmonization on environmental management issues at the federation level. The FEPA legislation gave rise to the National Environmental Policy. Section 3, subsection 3,4 of the policy emphasized biodiversity conservation (National Policy on Environment 1889). There indeed have, in recent years, been increasing deforestation, soil degradation and deterioration and desertification in Nigeria. All these have been due to the spread of agriculture, commercial timber felling and local cutting of wood for fuel at will. This is further aggravated by accidental forest fires, farming, and game-related bush burning. The need is, therefore, to secure development while at the same time sustaining the productivity of the natural vegetation, protecting wildlife, maintaining genetic diversity and avoiding forest and soil destruction.

According to the policy, the strategies for achieving these objectives include:

a. Promoting the rational exploitation of forest resources to meet domestic consumption needs and to achieve a significant export activity on a larger term basis.
b. Regulating forestry activities to enhance conservation and environmentally sound management practices;
c. Monitoring the quantitative and qualitative changes of forest cover and their effect using conventional and modern technology such as multispectral satellite imagery;
d. Providing data on the balance between the nation's forest biomass and the prevailing environment and changes in the forest biomass considered to have a significant impact on the Biodiversity
e. Strengthening forest protection programmes to ensure adequate vegetation cover to mention a few.

Onosede (2006) noted that an unexpected discovery of the dumping and storage of tons of hazardous waste at a village port of Koko in the former Bendel State in 1988 embarrassingly called for a unifying environmental Framework Law that would be charged with the overall responsibility of protecting the Nigerian Environment. Decree No. 88 of 1988 established the Federal Environmental Protection Agency. It was later amended by Decree No. 59 of 1992 and enlarged in scope to include natural resources conservation and to provide the institutional arrangements for the overall coordination and management of the Environment in Nigeria. It also established a governing council that drew membership from different ministries and departments and was charged with the overall policy direction of the Agency FEPA. The FEPA has developed some specific legislative instruments, including a 1989 national environment policy, revised in 1999, Decree No. 86 of 1992, and National Environmental protection (Effluent Limitation) Regulations of 1991, Pollution Abatement in industries and facilities generating wastes regulations of 1991, and solid and Hazardous Waste Management

Regulations of 1991. In recent years, additional guidelines and standards have been developed, including environmentally friendly products (eco-labelling), water quality, oil spills, fingerprinting and waste disposal. FEPA encouraged States to set up their own environmental protection agencies that would address their unique environmental problems, including biodiversity depletion. Some local governments even joined and instituted their own environmental protection committees too.

However, there was a vacuum in the enforcement of environmental laws, standards and regulations in the country. The National Environmental Standard and Regulations Enforcement Agency (NESREA) (2007) was established as a parastatal of the Federal Ministry of Environment, Housing and Urban Development to address the situation. The NESREA act was assented to by Mr President on 30th July, 2007. By the NESREA act, the FEPA act Cap P10 LFN 2004 has been repealed. The NESREA 2007 Act N0.25 established the National Environmental Standard Enforcement Agency (NESREA) with responsibility for the protection and development of the Environment in Federal and environmental technology and is empowered to establish environmental criteria, guidelines, specifications, standards, procedures and processes for environmental protection as well as to enforce the Act and Environmental Law in general.

The government has attempted to address the issue of environmental management. This is clearly demonstrated by the whirlwind of meetings, conferences, reports and investigations. Nigeria has been involved in all important universal activities and has signed various treaties, conventions and performances. Among these are the framework conventions on climate change held in Rio1992, the convention on drought and desertification, the biodiversity convention etc. Despite all these efforts by the government, the attitude toward environmental management in Yakurr Local Government Area is still poor. Based on this backdrop; the researchers posed questions; Does materialistic value orientation influence the attitude of residents toward environmental management in Yakurr Local Government Area of Cross River State, Nigeria? (Essien, Essien, Ojong, Owan, & Imo, 2020).

Following NESREA 2007 Act No. 25 ‘‘NESREA’’ has the responsibility for the protection and development of the Environment, biodiversity conservation and sustainable development of Nigeria’s Natural Resources in general and Environmental technology, including coordination, and liaising with, relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulations rules, laws, policies and guidelines. The agency's vision is to ensure a ‘‘cleaner and healthier environment for Nigerians”, while its mission is to inspire personal and collective responsibility in building an environmentally conscious society to achieve sustainable development in Nigeria.

By section one of the “NESREA’’ Act, the National Environmental Standards and Regulations Enforcement Agency was established as a body corporate with perpetual succession and a common seal, with the power to sue and be sued in its corporate name. It is further provided that the Agency, shall, subject to the provisions of the Act, have responsibility

for the protection and development of the Environment, biodiversity conservation and sustainable development of Nigerians Natural Resources in general and environmental technology, including coordination and liaison with relevant stakeholders within and outside Nigeria on matters of enforcement of environmental standards, regulation, rules, laws, policies and guidelines.

The Act also established a governing council for the agency.

By section 7 of the Act, the agency shall have the following functions and powers:

a) Enforce compliance with laws, guidelines, policies and standards on environmental matters;
b) Coordinate and liaise with stakeholders, within and outside Nigeria, on matters on environmental standards, regulations and enforcement:
c) Enforce compliance with the provision of international agreements, protocols, conventions and treatise on the Environment, including climate change, biodiversity conservation, desertification, forestry, oil and gas, chemical, hazardous waste, ozone depletion, marine and wildlife, pollution, sanitation and such other environmental agreement as may from time to time come into force;
d) Enforce compliance with policies, standards, legislations and guidelines on water quality, environmental health and sanitation, including pollution abatement;
e) Enforce compliance with guidelines and legislations on sustainable ecosystem management, biodiversity conservation and developing Nigeria's natural resources.
f) Enforce compliance with any legislation and sound chemical management, safe of use of pesticides and disposal of spent packages thereof;
g) Enforce compliance with regulations on the importation, exportation, production, distribution, storage, sale, use, handling and disposal of hazardous chemicals and waste other than in the oil and gas sector;
h) Enforce through compliance, monitoring the environmental regulations and standards on noise, air, land, seas, oceans and other water bodies other than in the oil and gas sector;

However, the primary concern of this study is on sections 7 (c) and (e), which emphasized enforcing compliance with the provision of international agreements, protocols, conventions, and treatise on the Environment, including climate change, biodiversity conservation, desertification, forestry, oil and gas, chemicals, hazardous waste and ozone depletion, marine and wildlife, pollution, sanitation, and such other environmental agreement as may from time to time come into force; and enforcing compliance with guidelines and legislations on sustainable management of the ecosystem, biodiversity conservation and the development of Nigeria's natural resources.

Statement of the problem

The rate of biodiversity depletion is increasing and alarming each day in Cross River State. The state is currently confronted by the problem of poor conservation of biodiversity. The researchers have observed with keen interest and dismay that there is a high rate of illegal logging activities, harvesting of Non-Timber Forest Products (NTFs), indiscriminate bush

burning, continuous farming, unsustainable agricultural practices, illegal hunting/poaching activities and the use of chemicals in fishing which are detrimental to community development. There is also a lack of awareness about creating biodiversity conservation strategies in the state. Consequently, these unsustainable activities have resulted in diverse environmental problems or hazards such as ozone layer depletion, erosion, flooding and wildlife extinction which degrades the community and hence poses a threat to community development. The pressure of human activities on biodiversity has negatively transformed the nature of biodiversity and the ecosystem. As these human activities exert pressure on the Environment, biological diversity (biodiversity) declines, habitats are transformed, and the population of some species dwindles to the point of extinction. The ever-increasing human population coupled with technological development stresses the world's biological diversity hence the unprecedented rate of biodiversity loss in Cross River State.

The continuous destruction and unsustainable use of the remaining Cross River State biodiversity through these unsustainable anthropogenic activities are the primary reason for the high rate of wildlife depletion and extinction in the state which has adversely affected community development. Animals such as; elephants, buffalo, leopards, hyenas, lions, and eagles have been extinct from the state, while trees like Ebony, Opepe, Cedar, and Mahogany are endangered species. The cross river Gorilla is almost hunted to extinction. The cross-river gorilla were formerly more widespread and abundant than they are today. The loss of even a few individuals of the cross river gorilla to poaching represents a significant threat to their survival. For such a small fragmented population, habitat loss and fragmentation further reduce connectivity between sites, increasing their isolation from one another and reducing the opportunity for gene flow.
Despite the concerted effort made by the state government to curb the high rate of biodiversity depletion in the state, biodiversity depletion is instead on the increase; in September 2010, the Liyel Imoke administration placed a ban on logging activities within the state reinforcing with the intention of ‘‘conserving biodiversity" in the state irrespective of the embargo, logging activities went on smoothly with impunity. The media has also played a key role in sensitizing the public to the dangers of biodiversity depletion and the need to conserve biodiversity all to no avail. Non-governmental environmental organizations like "CERCOPAN, PANDRILLUS'' among others have also played a key role in sensitizing the public on the benefit of biodiversity conservation by living by example, but all their effort proved abortive.

In realization of the above, the researchers sought to determine the relationship between environmental legislation and biodiversity conservation in Cross River State. The statement of the problem is therefore what is the relationship between environmental legislations and biodiversity conservation for community development in Cross River State?

The study aimed to determine the relationship between environmental legislation and biodiversity conservation for community development in Cross River State. Specifically, this study sought to;

1. Examine the relationship between National Park Act and biodiversity conservation.
2. Determine the extent to which the National Environmental Standard Regulation Enforcement Agency (NESREA) Act relates to biodiversity conservation.

Statement of hypotheses

1. National Park Act Awareness does not significantly relate to biodiversity conservation.
2. The National Environmental Standard Regulation Enforcement Agency Act does not significantly relate to biodiversity conservation.

Methodology

The research design adopted for the study is the correlational research design. According to Joshua (2005), the purpose of correlation research is to relate two or more variables. It is a research design that investigates the relationship between two more variables without the researchers controlling or manipulating them or without influence from extraneous variables. It is a systematic empirical inquiry in which researchers do not directly control independent variables because their manifestations have already occurred or are inherently not manipulable. In other words, since the researcher does not have direct control of the independent variable, he/she cannot manipulate them. The main reason for adopting this design is that the researcher seeks to establish the relationship between the dependent and independent variables. Also, because the relationship between environmental legislation (environmental impact assessment act, Cross River State forestry commission law, endangered species act, convention on biological diversity, national park act, national environmental standard and regulation enforcement agency act and sea fisheries act) and biodiversity conservation has already occurred and the researchers can manipulate them. This requires empirical data on these variables, which have already occurred in the population.

The research area for this study is Cross River State, Nigeria. Cross River State lies between latitude $4^{0}28^{I}$ and $6^{0}55^{I}$ North and longitude $7^{o}50^{I}$ and $9^{o}28^{I}$ East of the Greenwich meridian within the tropical rainforest belt of Nigeria. It shares boundaries with the Republic of Cameroon in the East, Benue State in the North, Ebonyi and Abia State in the West, Akwa Ibom State in the South West and the Atlantic Ocean in the South. Cross River State lies within the Cross River Basin, which has a total area of 33,855 km^2 of which 44,105km^2 lie in Nigeria and 9750km^2 in Cameroon. The cross-river basin also covers part of Nigeria's Benue, Abia, Ebonyi, Enugu and Akwa Ibom States. The topography of Cross River State is mainly characterised by low-lying undulating terrain with several areas of extensive floodplain along the course of Cross River and its major tributaries.

However, there are high elevations at the basement areas of the Oban and the Obudu Plateau with the Obudu hills attaining heights of up to 1,600m. The state has a land area of 23,074

square kilometres, with an estimated population of 3,866,300 million (Cross River State Bureau of Statistics, 2021) and a comparatively low population density of 20 persons per square kilometre. The state capital Calabar Municipality has a population of approximately 4,832,88. There are 18 local government councils in the state operating as sub-political structures in the state each headed by an appointed or elected head of the local government area; the local government councils are: Abi, Akpabuyo, Bakassi, Bekwarra, Biase, Boki, Calabar Municipality, Calabar South, Etung, Ikom, Obanliku, Obubra, Obudu, Odukpani, Ogoja, Yakurr, and Yala. The major languages spoken in the study area include Efik, Ejagham and Bekwarra; the minor ethnic groups and languages spoken are Ekori, Bahunwuu, Yakurr/Agoi, Boki, Bako and Mbembe.

The state is an Agrarian state, with about 75% of its people engaged in subsistence farming. Poverty is endemic, with over 70% of the population living on an income of less than US $1 a day. The civil service is a significant employer with over 20,000 employees. The public sector has been the prime mover of all economic activities in the state despite some attempts to promote private sector investment. The private sector is still relatively underdeveloped and is dominated by informal sector activity. The state has a rich stock of arable land and various mineral resources that offer investment opportunities in agriculture, forestry and eco-tourism. Over the past 10 years, the sector has received significant investment, including the Obudu ranch and resort, the Tinapa business resort and others. Agriculture and tourism development are the flagship sectors to drive future economic development.

Average annual rainfall ranges from 1,760mm in the Northern part of the state to 3, 100mm in the southern part. The dry season duration varies from 3 months in the south to 5 months in the North. Only 6% of rainfall occurs in the driest three months of the year. This has significant consequences for water resources management, particularly in the Northern part of the state where some rivers are non-perennial due to the impermeable geology of most areas of the state, runoff from sub-catchments is 40%-60% of annual rainfall.

Seasonal flooding has created extensive deep fluvial channels.
The study population consists of all registered farmers in the study area of the state including male and female who range between the ages of 18-65 years old, who are considered to be the active population residing in the state. The figure for farmers registered in the state is "4496", as shown by the available records of the Cross River State Bureau of Statistics (2019). The two local government areas in the Northern Senatorial District had 1,582 registered farmers, the local government areas in the Central Senatorial District had 1,651 registered farmers and the two local government areas in the Southern Senatorial district had 1,329 registered farmers. The researchers decided to use registered farmers from the target population because it will be a herculean task to ascertain the number of all farmers in the state.

The sampling procedure adopted for this study is a purposive and simple random sampling technique. Using a purposeful sampling technique, six local government areas were deliberately chosen from among the three Senate areas because of the high concentration of forest. From each of the selected local governments all the communities were written on pieces of paper from which two communities were randomized using a simple random sample technique of "hat and draw''. This produced twelve communities, two from the six Local Government Areas and four from the three Senatorial zones. These 12 communities were therefore used as samples in this study. A breakdown of the sample respondent is shown in table 1.

The sample for this study included 600 registered farmers out of a total of 4,499, using 13.3 per cent to select the total sample for each community. As a veritable tool for the data generation for the study, the researchers, with the supervisor's assistance, developed a 20-item research instrument referred to as Environment Legislation and Biodiversity Conservation for community development Questionnaire (ELBCDQ).

The questionnaire had two parts. Part one contained items meant to elicit information on the respondents' demographic data. The items in the questionnaire were presented on a modified four (4)-point Likert Scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Each statement sought to determine the relationship between environmental legislation and biodiversity conservation. The respondents were required to respond by ticking the options that best appealed to them.

To ensure that the items selected for inclusion in the questionnaire could elicit relevant responses from respondents, drafts of the instrument were presented to the supervisor and two senior lecturers from the Department of Educational Foundation, Faculty of Education for face validity. Through their constructive criticism and recommendations, some items were dropped, some were modified and some were retained. There were initially 50 items, but after the validation process, 45 items were retained and certified okay to measure the study's variables.

To determine the reliability of the instrument (questionnaire), a test was performed on 50 respondents in the study area who were not participating in the study. The Cronbach alpha reliability procedure was used to determine the instrument's internal consistency, which ranged from .701 to .821, implying that the instrument is both valid and reliable to be used for this investigation. The reliability coefficient table is presented in table 2.

Due to the size of the sample, the researchers employed the services of 6 research assistants (Youth leaders). These research assistants were instructed to administer the questionnaire to the community's registered farmers until the expected number from each community was reached. After distributing the questionnaire to the research assistants, the researchers went

back the next week and collected the instrument which was coded and scored appropriately to answer the research questions and test the hypothesis.

In order to ensure that the data collected was analyzed appropriately, a key was developed to code each piece of information received from respondents. Each of the questionnaires was scored independently. The questionnaire was coded and scored appropriately. All items in the questionnaire were awarded numerical values. For each of the positively constructed items, responses would be awarded this: strongly agree (SA) was assigned 4, Agree (A), 3, Disagree (D) 2 and strongly disagree (SD0 1. The reverse was for the negatively constructed items.
The analysis of the hypotheses was done using simple regression analysis.

Results/Discussion

Ho:1

There is no significant relationship between National Park Act Awareness and biodiversity conservation in Cross River State.

In this hypothesis, the independent variable is National Park Act Awareness while the dependent variable is biodiversity conservation. To test this hypothesis, simple regression statistical analysis was used and the result as presented in Table 1.

Table 1
Simple regression analysis relationship National Park Act Awareness and Biodiversity Conservation in Cross River State

Variable	R	R^2	Adj. R^2	Std. Error		
International convention	.446[a]	.199	.197	1.90848		
Source of variation	SS		Df	MS	F	Sig.
Regression	540.308		1	540.308	148.343*	.000[b]
Residual	2178.086		598	3.642		
Total	2718.393		599			

*significant at . p <.05

The analysis in Table 1 showed that the Adj $R^2$is 0.197. This implies that National Park Act Awareness could account for 19.7% of the variance in the dependent variable (Biodiversity Conservation). However, while the percent contribution is small, a glance at the table showed that F=148.343 ($p<0.05$) is very important. Also, since p(.000) is less than p(.05), it implies that National Park Act Awareness significantly relates to biodiversity conservation. As a result, the declared null assumption is rejected.

Ho: 2
There is no significant relationship between National Environmental Standards, Regulation Enforcement Agency Act Awareness and biodiversity conservation in Cross River State.
In this ‘‘hypothesis”, the independent variable is National Environmental Standard Regulation Enforcement Agency Act Awareness, while the dependent variable is biodiversity Conservation. To test this hypothesis, simple regression statistical analysis was used and the result as presented in Table 2.

Table 2
Simple regression analysis relationship National Environmental Standard Regulation Enforcement Agency Act and Biodiversity Conservation in Cross River State

Variable	R	"R^2	Adj. R^2	Std. Error		
Environmental Standard	.526[a]	.277	.275	1.81331		
Source of variation	SS		Df	MS	F	Sig.
Regression	752.119		1	752.119	228.741*	.000[b]
Residual	1966.274		598	3.288		
Total	2718.393		599			

*significant at .p <.05

The analysis in Table 2 showed that the Adj R^2 is .275. This implies that 27.5% of the variance in the dependent variable (Biodiversity Conservation) could be accounted for by Environmental Standard Regulation Enforcement Agency Act. However, while the percentage contribution is high, a brief examination of the table showed that F=228.741 ($p<0.05$) is very significant. Also, since p(.000) is less than p(.05), it implies that, indeed, the National Environmental Standard Regulation Enforcement Agency Act does not significantly relate to biodiversity conservation. Therefore the stated null hypothesis is rejected.

Discussion of findings

The analysis of hypothesis one showed that the null hypothesis was rejected and the alternate hypothesis upheld. This implied that National Park Management Act CAP N65, LFN 2004 Awareness is significantly related to Biodiversity Conservation in Cross River State. The result is not surprising to researchers because the national park has contributed immensely to the conservation of biodiversity in Cross River State and the nation as a whole. National parks are limited areas to which hunters and loggers cannot access because of their boundaries. These restrictions have helped tremendously in biodiversity, especially in Cross River State's study area. Therefore, this result was anticipated by the researchers. This is in agreement with Amakiri (2010), who observed that the efficacy of national parks could be seen in ecological processes, life support systems, and protection of the Environment, particularly watershed areas. They play essential roles in science and education; they preserve our indigenous genetic resources that are the basis of any meaningful advancement in our Agricultural system and technology, etc. Indeed given our high population and dependence on natural sources for much of our food, fiber and medicine, the role national parks play far outweighs all other benefits and is not quantifiable in monetary terms. Cross River State is currently beset with many environmental problems such as deforestation, drought, desertification, sheet, gully and ‘‘coastal erosion and flooding", loss of biological resources, etc. without doubt, the national parks stand to offer some antidote to these ills. The national parks are today's investments for Nigeria's tomorrow so that generations yet unborn can have a secure future.

Also, by the findings Muhumuzah (2017) conducted a study on factors affecting the success of biodiversity conservation in national parks. The result revealed that all factors responsible for national parks' success and failure are socioeconomic and cultural in nature. Also in line with the study, Isugo and Obiola (2015) conducted a study on "community participation'' in wildlife conservation and protection. They found out that community leaders and youths play key roles in educating their members on the importance of wildlife conservation. So far, scholars seem to agree with the findings of this study. The researchers were convinced that the National Parks Act has made a significant contribution to the conservation of biodiversity in the state and in the country at large.

According to the National Park Act 36 of 1991, the mission of a national park is to manage and regulate the use of these unique ecosystems designated as national parks of such means and measures to preserve and conserve Nigeria's heritage, particularly the fauna and flora, the habitats they live in, and the unique sceneries they afford. Its mission is also to provide human advantages and enjoyment in such a way and by such means so that they are left untouched for generations to come.

The analysis of hypothesis two showed that the null hypothesis was rejected, implying that National environmental standard, regulations enforcement agency act 2007, Act No. 25 is significantly related to biodiversity conservation in Cross River State. The researchers expected the result because NESREA is a body saddled with the responsibility of enforcing environmental standards, regulations, rules, laws, policies and guidelines. This result portrays the importance of NESREA in protecting the Environment and conserving biodiversity in the study area. The above findings agree with Ladan (2011) who stated that the National Environmental Standards and Regulation Enforcement Agency is currently the primary Federal body charged with the protection of Nigeria's Environment; NESRA was created by the NESREA Act 32. In accordance with section 20 of the 1999 Constitution, the federal government established the agency as an institution under the federal Ministry of Environment, Housing and Urban Development. The NESREA Act was created to replace the defunct federal environmental protection agency (FEPA). In examining the enforcement of preventive principles in Nigeria, it is necessary to take a look at the establishment, mandate and powers of NESREA established by the NESREA Act, 2007.

Also in line with the result of the study, Valery (2019) who conducted a study on NESREA Act and biodiversity conservation, revealed that the NESREA act has contributed immensely to biodiversity conservation in the study area. However, Frynas (2018) contradicts this finding by analyzing the Nigerian situation regarding the NESREA Act. He believes that Nigerian state revenues were extracted from taxes and rents mainly from oil revenue from foreign companies rather than from productive activities. Arguing further, he concluded that the linkage between Nigerian business and foreign capital dominates the Nigerian political

economy and as a result, the state is biased in favor of oil capitalists, a problem which NESREA has failed to curb.

Conclusion

Based on the result of the study, it was concluded that there is a significant relationship between two of the sub-independent variables (National Park Act Awareness and National Environmental Standards, Regulation Enforcement Agency Act Awareness) and biodiversity conservation. There is a need for the public to be aware of these environmental legislations and comply with them in order to ensure a sustainable biodiversity thereby enhancing community development.

Recommendations

Based on the findings of the study, the following recommendations were made.

1. The management of ‘‘National Parks” should be fully empowered regarding human, material and financial resources to protect the pack's biodiversity from intruders, mainly from the local communities around the Parks. This will go a long way in boosting community development in the area.
2. The National Environmental Standards Regulation Enforcement Agency should be credible enough to uphold environmental standards without fear or favour.

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