

Challenges Of Biodiversity Conservation For Effective Agricultural Activities In Etche Local Government Area Of River State. Nigeria: A Review

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Abstract: A review of the meaning and efforts made for biodiversity conservation globally was made. Biodiversity conservation challenges for agricultural activities in Etche Local Government Area of Rivers state were x-rayed. Such challenge includes human population, rapid infrastructural development, deforestation, poaching, illegal grazing, coupled with poverty and indiscriminate bush burning. Based on these factors, recommendations were made.

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Introduction

Biodiversity conservation refers to rational utilization of available natural resource such that the present use will not jeopardize future use. It does not prohibit use but discourages wanton destruction of the natural resources. Biodiversity conservation applies sound ecological principles and processes to meet future needs. This is very important because the pressure on global biodiversity is so much but these resources are dwindling on daily basis. Moreover, biodiversity is essential for human survival and the maintenance for ecosystem processes.

Biodiversity of biological diversity refers to different living organism from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. It encompasses the variety of all forms of life on earth, which provides the building blocks for human existence. Biodiversity is important to the maintenance of a healthy environment. Its roles in meeting human needs directly in crop/animal production while maintaining the ecological process upon which our survival depends is enormous. These include material goods (for example, for food, timber, medicines, and fibre), undermining function (flood control, climate regulation, and nutrient cycling), and benefits such as recreation (Rands *et al* 2010). These and other economics as well as social contributions are substantial, and because of these innumerable benefits derivable from biodiversity, there is a considerable stress on global biodiversity.

Efforts Made on Biodiversity Conservation

Several efforts and initiatives have been made at both local and global levels to curb biodiversity loss. At the global level, the convention on biological diversity (CBD) was negotiated signed and ratified by over 150 countries in response to the alarming loss

of species and ecosystem (Herkenrath,2002). Nigeria is a signatory to the international treaties and conventions for conservation and sustainable use of biodiversity. At the local level, the Nigerian government has developed an action plan to conserve its biological diversity and has made a commitment to conserve Nigerian's 25% of total forest area. Emphasis is placed on in situ conservation of biodiversity within protected area such as forest Reserves, game reserve, National parts and wildlife sanctuaries. In situ conservation outside protected area was also included to complement conservation of biological diversity inside protected area, to secure Nigerian's biodiversity for future generation (National Biodiversity Strategy and Action plan, 2004).

However, in spite of these efforts, reports about the un-relented biodiversity loss still dominate contemporary media and literature. For example, Thomas (2003) estimated the rate of decline in agricultural activities at between 50-100 times of the natural process with 34,000 and 5,2000 species of plants and animals respectively at the brink of extinction. But according to IUCN (2007 the rate of species" Loss is between 100-1000 the natural phenomenon with one to five species loss annually for the wildlife group. Similarly, Tabarelli (2005) noted that less than 100,000 km² (about 7%) of the Atlantic Forest remains. The forest harbours more than 8,000 endemic species, and is one of the world's 25th biodiversity hotspots. Various factors have been advanced for this persistent loss by many scholars including increasing human populations, deforestation, habitat fragmentation, overkill, secondary extinction, introduced species logging (Thomas 2003), over exploitation, climate change, pollution and disease (IUCN, 2007).

Knowledge about the challenges of biodiversity conservation is vital in Etche Local Government Area of Rivers State, for sustainable and effective conservation efforts. In the recent times, there has been an unprecedented increase in the rapid loss of biodiversity in the area and globally. This increasing global trend can lead to extinction of threatened crops, fauna and flora species. Hence, it is necessary to appraise and determined the challenges before they become irreparable especially those that can be remedied to avoid devastating effects of such problems on biodiversity. Interestingly, one of the major objectives of management of most global protected areas for agricultural activities in Etche Local Government Area is conservation, however vital information concerning conservation problems of agricultural activities in the Local Government Area is not available. Although, few studies have been carried out, none of them focus on the problems of biodiversity conservation in the area. Past studies in the area and the country as a whole by the Nigeria Biodiversity Study Group (2008) only identifies certain resources of the area. Therefore, it becomes important that a review of the challenging factors on biodiversity conservation in Etche Local Government Area be made and to provide useful information for further researchers.

This study tends to fill in the gap in knowledge on biodiversity conservation in the Area. This will also help in providing useful information needed for realistic conservation of biodiversity efforts in Rivers State, Niger Delta region and Nigeria at large.

Challenges Of Biodiversity Conservation

Problems confronting biodiversity conservation abound globally including Nigeria which has contributed to loss of biodiversity. Effort has been made on global biodiversity due to the fact that current efforts to limit biodiversity loss are not yielding the desired result. Report from Meyers et al (2000), shows that globally, about 44% of all species of vascular plants and 35% of all species in four vertebrate groups are confined to 25 hotspots comprising only 1.4% of the land surface of the Earth are at risk of extinction. In Etche Local Government Area, of Rivers-State increase in human population, habitat transformation, deforestation, infrastructural development and increasing poverty are some of the factors confronting biodiversity conservation. Bastian et al (2008) Worldwide supported this by recent decades, the loss of the entire species and natural areas caused by reporting that in human activities has been going on at unprecedented rates. Issues from the World Bank (2010) also observed that humankind has become the driver of major extinction events on Earth in the last two decades. Globally environmental problems like global warming and climate change

have contributed to no small way to global challenge on biodiversity conservation.

Human population explosion

Human population expansion has lead to steady dwindling of agriculture activities more especially in areas where wildlife once thrived and forest tress exist are fast disappearing. The fact remains that due to rapid human population, there seems to be no place left in Etche Local Government Areas where human cannot be found. This has lead to a growing number of confrontations in many places between humans themselves (tenant and land owners) and also human and wildlife community, referred to as “Human Wildlife Conflict”. In human life conflict, when wildlife lose their natural habitats and have reduced access to natural food, they often depend on agricultural crops, livestock and can injure or kill humans (Riley *et al* (2003).

Rapid and Accelerated Infrastructural Development

Globally there is an increase in human population in the recent times, resulting to increased in demand for the provision of infrastructural facilities such as road network, accommodation facilities, sewage disposal system, health facilities and educational facilities especially in developing countries and Etche Local Government Area of River State.

Hence, in order to meet the need of increasing human population, land meant for agricultural activities are encroached upon with disastrous consequences. The urge for urbanization has contributed in no small way to the shrinking and obliteration of agricultural activities. Consequently this has led to a decrease in fauna and flora populations in the area. This creation of new settlements and the large scale expansions of existing once, often result in the destruction of forest and other natural vegetation. The construction of infrastructural facilities such as roads, airports educational establishment has large area of natural vegetation with a reduction in agricultural activities.

Poverty

It is widely accepted that in biodiversity loss, poverty are linked problems. (Adams et al.2004) Increase in the number of people living below poverty level has also contributed to loss in agricultural activities as well as decrease in production especially in developing counties. Many poor people in underdeveloped nations (Etche Local Government Area) depend largely on agriculture as source of protein and food. Activities such as poaching and logging have contributed to loss of biodiversity and their habitat. Meyers *etal* (200), in his work reported that access by the rural poor people to basic substance resources – farmed and gathered

food, fodder, water. Fuel, building materials, medicines, raw materials for tools and house wares is essential for livelihood security. Butchart (2010), maintains that rural household depend on diverse wild animals, foods and protein source to provide food security and supplement diets. Survival has continued to be a major reason why rural poor people in the buffer zone of protected areas like Etche Local Government Area of Rivers State create biodiversity loss. Trespass into such territories for bush meat hunting abound. Herkenrath (2012) noted that in sub-Saharan African, 41% of the human population exist on a daily wage of less than 1USD, a higher proportion than any other area of the world. A number of international organization working on bush meat issues such as the overseas development institute, UK Tropical forest forum, and Bush Meat Crisis Taskforces (BMCTF, 2008), all agree that livelihood challenges are at the core of reasons accounting for village frequent trespass into the territories of parks and protected areas in the tropics.

Commercial Agriculture

The quest to improve agricultural practices which are referred to as modern commercial agricultural production has also been found to be a factor contributing to biodiversity loss. Also the use of machines-Tractors, harrowers, plough etc. to clear vegetation and drive raw materials in order to increase food production has also affected wildlife and plant species survival (Butchart, 2010). Commercial agriculture which involves the cultivation of thousands of hectare of land for mono cropping has lead to the clearing of several acres of vegetation, consequently, another aspect of agricultural vegetation are not only rendered homeless but also displaced leading to depletion of the soil and wildlife species.

Disease

Disease outbreak in plant and wildlife population is another factor decimating agricultural activities. Diseases were once considered of no significant implication to agricultural activities until the recent times. However, modern agricultural activities integrate diseases monitoring and control in order to achieve effective conservation programme. Crops and animal diseases occur in both confined and semi intensive conditions and have been reported by modern researchers as a factor contributing to loss of agricultural production (Jones *et al* 2008). When animals and crops are infected, their biochemical and physiological process will be affected negatively and similarly growth and reproductive capabilities will be hindered. Disease conditions have been reported to lead to immediate death of animals and abnormalities in crops if not handled properly.

Poaching

Poaching involve illegal killing of wildlife species and this constitute an obstacle to wildlife conservation in Etche Local Government Area and wildlife worldwide. Damania *et al* (2005) reported that poaching results basically from insufficient meat supply to feed the increasing population, particularly in the rural communities adjoining protected areas. Also, it results when people get involved in active poaching. Estimates on the numbers of elephants killed each year by poachers range from 45,000 to 400,000 globally (Anonymous, 1987). Poachers can bring species to instant extinction, if the last in the species is killed. Poaching is often aggravated by increased in demand for bush meat. As demand for bush meat consumption increases, hunting activities also increases to cope with the rising demand. The unrestrained pressure on the wildlife resources would eventually decrease their population in the wild and hence a collapse in their conservation. Okiwelu *et al*, [2009]; Damania *et al* (2005) also opined that unsustainable bush meat hunting is one of the biggest obstacles to mammal species conservation particularly in West and Central Africa.

Deforestation

The uncontrolled felling of trees both inside and outside protected areas has been found to threaten both fauna and flora populations. Wild animals usually migrate from areas where tree covers are removed. Some animals that cannot withstand open cover due to deforestation dies (eg. Grasscutter). In Etche Local Government Area, there is an increasing demand for woods. The crude manner of collecting certain forest products in the area such as honey, wild fruit, timber, thatch, ropes, palm wine tapping and medicinal plant can also lead to habitat destruction. For instance honey collection, firewood collection, and charcoal making, all involves cutting down plant species and killing of young trees with fire. Camara (2003) observed that wild fruit such as *Brachystegia eurycoma*, *Pakia biglobosa* and *Arvingansmithii* collection in commercial quantity result in depletion of plant seed banks. He further reported that deforestation of the Brazilian Atlantic Forest and its associated ecosystem has resulted in massive loss of biodiversity of tree protected areas.

Illegal Grazing

Illegal grazing of livestock along farmers land and bushes in Etche local government area by the Fulani rearers is quiet noticeable. Such illegal activity, which is very rampant, can have devastating effect on both the crops and flora species composition in the area. Grazing livestock without restriction is quite inimical to agriculture production. Apart from contending with crops for survivals, they also introduce pathogens into the plantations (Odunlami 2005). The nomadic Fulani cattle rearers have also

been reported to be coppicing and also cutting down branches of tree to feed their live stock in places like Abara, Elele, Ozuzu, etc these nomadic Fulani's have no regard for fragile soil and watershed. They have also been known for killing wild games for their own food (Ubaru, 2000). Furthermore, it is important to state that consistent grazing of livestock in plantations and farmland can also cause compaction, which lead to erosion. Hence, their continuous grazing of the vegetation if unchecked, could adversely affect not only the vegetation but also the water washed for animals (wildlife) in the local government area.

Illegal Bush Burning

Another challenging factor to biodiversity in the area is illegal bush burning, while prescribed bush burning is management toll in the management of protected areas in the sub-Saharan Africa. However, illegal bush burning on the other hand, poses threat on both crops fauna and flora species of protected areas in Etche Local Government Area. Odunlami (2005) reported cases of bush burning associated with illegal grazing in Yankari Wildlife Park. He noted that illegal fire is often set indiscriminately by different category of intruders into the park and plantation. Poachers sometimes set the plantation on fire in order to attract wild games to the resultant fresh flush, as noted in communities like Abara, Odogwa, Umuoye etc which usually enables them to have great kills. Fulani cattle rearers set the vegetation on fire in order to control the incidence of tsetse fly from biting them and their cattle. They also set fire indiscriminately in order to provide warmth for themselves and their cattle during cold resulting to crop loss and conflicts with the inhabitants. Farming communities also use fire on their farmlands in preparation for farming season. This has sometimes resulted in the loss of crops and some wildlife species. Some young games and sickly are usually lost. Also eggs and nests of wild games birds equally get destroyed. Incessant indiscriminate bush fire can also destroy the soil structure thereby facilitating erosion, flooding and further loss of vegetative cover.

Recommendations

From the discussion, it is noted that biodiversity conservation in Etche Local Government Area is enormous. For effective Agricultural activities, it is necessary that the following recommendation are adhered to:

1. Government should enact stiff laws and penalties that will discourage indiscriminate felling of trees, poaching, illegal grazing in the area. These laws should not only be made at the state level but

local authorities also (L.G.A chairman, councillors, tradition chiefs} should also create by laws.

2. Provision should be made for grazing land. This implies that graze land be established at specific localities to discourage illegal grazing with strict penalties for out laws.

3. The issue of poverty level in the area is alarming as evidence in this work, this also lead to biodiversity loss. Stipends from local government authorities should be made to aging adults while unemployed youths should be engaged in entrepreneurship skills, this will minimize poaching and other social vices inimical to biodiversity loss.

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