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Significance of Floral Biodiversity Conservation in Kano State, Nigeria

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ABSTRACT

Biodiversity preservation, the act of ensuring and saving the riches and assortments of species, environments, biological systems, and hereditary decent variety on the planet is significant for our wellbeing, riches, nourishment, fuel and administrations we rely upon. It assumes a vital job in supporting numerous areas of advancement. The paper assessed the threats facing floral biodiversity in Kano state with a view to analyze the different species facing extinction ranging from trees, shrubs and grasses at different major land uses in the study area, different human activities that are responsible for floral biodiversity threats such as cultivation and grazing were also assessed. Documents from different sources were used to assess the plant where extinct. The study identified the economic importance of floral biodiversity, hydrological effects of floral biodiversity, and settlement effects of floral biodiversity as well as the condition of some plant species that are facing extinction in the study area.

Keys Word: Biodiversity, Floral, Extinction, Farmland and Grazing land.

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INTRODUCTION

The variety of life on Earth, its biological diversity is commonly referred to as biodiversity. Biodiversity is also defined as "the variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part (Alvey, 2006). Biodiversity encompasses the variability of organism from all sources and the ecological complex of which they are part of and this includes diversity within species and between species of the ecosystem (Kawada et al., 2010). Diversity holds together life on this planet; all plants, animals and microorganism on land, in water and Diversity within species, between species, and of ecosystem is the treasures of nature; which must be preserved. Plants form the basis for existing living organisms as they serve as good shelter, woodland providers and also as a resource base for human medicines and as such there is the need for serious conservation of plants because of their importance not only to man but also to the environment as a whole. They play crucial role in regulating the atmosphere and climate, they store carbon, they help to drive general precipitation pattern and distribute heat to the temperate zones. Plants moderate local climates, providing milder, moisture and less variable condition than places without plants (McNelly, 2004). Much of the water vapor in the air over tropical forest comes from transpiration through plants (Hollings, 1987).

Plants protect the local hydrological cycle, protecting the soils from excessive erosion and reducing the tilt loads of rivers, slowing run-off and moderating flood and other harmful fluctuations to the stream. Trees and other plants cover areas of the drainage basins, regulate the run-off of water and may help to maintain spawning habitat of fish and sustain major fisheries (Salm, 1984). Plants also provide ranch for livestock production (Poffenberger, 1996). Despite all this wealth of benefits provided to humanity by plants, they are being destroyed and degraded almost everywhere as a result of poor management. Most vegetation covers have been modified by man and the remaining areas of the vegetation cover are under heavy pressure especially in the study area. This situation called for the United Nation in 1999 to say that "Individual species of

plants have no right to bring other plants to extinction or to play with nature by deciding which species serve us best and should, therefore, be allowed to live"(FAO,2000). Thus, it becomes imperative for the local government to device effective management strategies for plant biodiversity conservation. The strategies should as a matter of necessity take into consideration the socio-economic level of the people of the area, educational characteristics, power distant as well as the corruption level in the area. Indiscriminate exploitation is the major ecological problem that has contributed to the loss of plant species in the study area. Such over-exploitation activities like unplanned and intensive land use, uncoordinated expansion of settlement, clearance for farming, right of way for infrastructural development overexploitation and wasteful practices, overgrazing and overlapping for normal and fuelwood are all implicated. Many parts of indigenous and exotic plant species are lost to medical purposes due increase in the contribution of traditional herbal medicine in health delivery has indeed put extra pressure on some plant species such as *Khaya Senegaleses* (Mahogany), *Aegyptiac*a (desert date) and most recently *Cordia Africana* are over-harvested and therefore threatened. Even the fast adapting *Azadirachta indica* (neem tree) is under threat with regard to over-harvesting for medical purpose.

STATUS OF BIODIVERSITY IN NIGERIA

Nigeria is rich in biodiversity because the country is endowed with a variety of plants and animal species found in the grasslands: There are about 7895 plant species identified in 338' families and 2,215 genera. There are 22,000 vertebrates and invertebrate's species. Out of this number 20,000 are vertebrates and invertebrate species. These species include about 20,000 insects, about 1000 birds, about 1000 fishes.'247 Mammals and 123 reptiles. Of these animals; 0.14% is threatened while 0.22% is endangered. About 1,489 species of microorganisms here also been identified (Habu and Gila 2016). All these animals and plants species occur in different numbers within the country's vegetation that range from mangrove along the coast in the south to the Sahel in the North (Nigeria First National Biodiversity Report, 2001), This biodiversity contributes greatly to the sustenance of the rural economy. In Nigeria, the alarming destruction of natural habitats is principally caused by unsustainable land use resulting in depletion of the country's biodiversity as cited by Benton (2007). Nigeria first National biodiversity report stated that about 60% of 65% species of trees now faced with extinction while 35% of 40% are at risk (Imeht and Adebobola, 2001).

FLORAL DIVERSITY

Floral diversity refers to a variety of plants occurring in particular on the diversity of naturally occurring or time. It generally refers to indigenous or native plants. The word "Flora" comes from the Latin name, Flora is the goddess of plants flowers and fertility according to Roman mythology. A total of 215,644 species of plants out of 298,000 predicted have been catalogued on earth till date. Apart from this 8,600 plant species have been recorded from ocean out of estimated 16,600 (Envis Centre on Floral Diversity India, 2011). Effective assessment of floral composition can best be achieved in the study by giving a conceptual review of some terms such as floral diversity, species diversity, etc. Various species of plants are identified which include trees, shrubs, herbs and grasses and this is a result of field survey names of the plants are written in Hausa and scientific equivalent of each is given with its functions in the area of study (Table 1).

THE ECONOMIC IMPORTANCE OF PLANT BIODIVERSITY

Plant biodiversity is very important and vital to human and environment. About 80% of our food supply comes from just 20 kinds of plant and different kind of leaves First National Biodiversity report (2000). A significant proportion of drugs or native remedies are derived directly or indirectly from the biological sources. For example, among all the species identified only a few of them are used as a source of medicine. Plants products have valuable medicinal properties and have been used as traditional medicine for many years. The leaves, fruits and oil of the Neem plant are used to cure many ailments like acne, scabies, eczema' and other fungal infections. Plant biodiversity plays a vital role in regulating the atmosphere and water supply. The increasing diversity of trees and other plants will increase the number of insect predators such as birds, lizard and certain insects so as to improve pest control. Various practices are devised in promoting plant biodiversity conservation so as to enhance the greater use of biodiversity in all aspects.

(1) Creation of market orientation approach to biodiversity functions (2) Highlighting people on general importance of each and every species of plant (3) Understanding an indigenous, recognition of farming system and technology so as to build a strategic framework needed for sustainable use of plant biodiversity (4) Farmers concern are on with their farm because of the benefit they derived from it, as such sustainable agricultural practice that makes their farming to be of utmost benefit to them and (5) Agroforestry is clone to encourage for proper management of their farmland against environmental hazard in the study area.

HYDROLOGICAL EFFECTS OF FLORAL BIODIVERSITY

Some proportion of the study area was on the irrigation

Table 1. Inventories plant species found in kano state. Based on the field survey carried out the following species was identified.

S/No	Local Name	Botanical Name	Functions
1	Kuka	*Adausonia digitata*	Economic resources
2	Kanya	*DiosprosMasjnlifonnis*	Econ res, medicinal
3	Tsamiya	*Tamaradusindica*	Econ res, medicinal
4	Marke	*Anogesusleocapus*	Econ res, medicinal
5	Kadanya	Acasiatolisica	Economics resources
6	Darbejiya	*Azadirachtaindica*	Medicinal
7	Gawo	Ipomeaolefera	Econ res, medicinal
8	Durmi	*Ficussyringilola*	Economic resources
9	Cediya	Ficusthenongii	Medicinal
10	Baure	*Ficusconginsis*	Econ res, edible
11	Farar kaya	Acacia siebiriana	Medicinal
12	Aduwa	*Bedonitesyghepeca*	Econ res, medicinal
13	Turare	*Eucalyptus species*	Economic res.
14	Goruba	*Hypogea thebeica*	Economic res, medicinal
15	Magarya	*Zielphiaabsinica*	Econ res, medicinal and fodder
16	Bagaruwa	*Acacia nelotica*	Medicinal fodder
17	Dashi	*Cemmoporaafricana*	Medicinal
18	Dinya	*Sderoyacaryabiera*	Edible
19	Dakwara	*Acasia senegalensis*	Economic resources
20	Kudiji	*Stireiga harmonica*	Medicinal
21	Sabara	*G. senegalensis*	Medicinal fodder
22	Zuwo	*C. mergrifolia*	Fodder
23	Yadiya	*Talezia speculate*	Fodder
24	Zogale	*Moringa olifeira*	Medicinal edible
25	Runhu	*Cassaiasinguecma*	Medicinal
26	Tumfafiya	*Calatropis polecera*	Medicinal
27	Kargo	*Felicegma R.*	Medicinal
28	Nonon kurciya	*Eliphobiahirta*	Fodder medicinal
29	Yaryadi	*Ipoineaerioeapa*	Fodder
30	Garahuni	*Momordica charantia*	Medicinal
31	Karangiya	*Cenchnisbiflonis*	Fodder
32	Kajiji	*Acasiafortis*	Medicinal

area of river and its tributaries. The tree species population density is very high along the river bank. The cultivation at wetland is seriously affecting biodiversity as irrigation and flood rice cultivation forms, one of the major practices in the area one can hardly see a tree species standing in farmland. The focus group discussion revealed that the farmers cut not only the trees in their farms, but they also cut all the trees around as they observed that the trees became a host to birds that destroy their farm produce and also the trees disturb the (low of water). The wetlands are fertile with seasonal flooding increasing or improving the fertility year in year out.

SETTLEMENT EFFECT ON FLORAL BIODIVERSITY

The study area has been a semi-arid zone and excessive hot season with high temperature, as such the settlement of the area tend to transplant of a lot of trees of different species because of the high temperature. Such as neem trees, chediya, lalle, zogale (moriga), gamji etc. It is clear that the people of the area are aware of the numerous importance attached to plants to their own life, but due to necessity they tend to engage in some act in the farmland, grazing by cutting of trees indiscriminately without replacement and bush burning during farm clearance.

FACTORS RESPONSIBLE FOR PLANT BIODIVERSITY LOSS IN STATE

Extinction is a feature of all biological systems, but the extinction of global biodiversity is now proceeding at an alarming rate. According to I.U.C. N's report (1996), it is generally agreed that the following factors are responsible for the loss of biodiversity: (1) Overexploitation (2) Introduction of non-native (alien or exotic) and (3) Climate change. The specific contribution of each of these causes to the study varies with land use practice. Poverty-induced overexploitation of environment degradation: this occurs through encroachment of agriculture on grazing land and forest reserve and over cutting of natural vegetation for fuelwood. These problems

compounded by rapid urbanization with its concomitant exponential increase in demand for fuelwood or wood product, construction and other natural resources. All these factors here caused reserved distribution of natural ecosystem. The status and trend of plant biodiversity can be summarized as follow (1) The status of plant biodiversity loss is poorly documented and the viability of this population is unknown (2) Most likely genetic diversity has decreased as specific populations have wiped out and (3) Species diversity in traditional production systems is relatively well retained in Farmers' crop yields and family herds. Changes in farm use are an immediate threat to plant biodiversity because it's affected the biodiversity, but as population increase, and the urban sector is not able to absorb this increase. There will be pressure on agricultural land leading to agro habitat degradation as well. Some powerful factor far beyond copy capacity of the legendary resilience of the various system, human settlement, and wide-scale irrigation schemes, etc. The root causes of these factors are population increase, decrease of market distortion and disincentives that courage natural resources exploitation at expense of the area adapted sustainable development. But climatic factors at both local and global levels are also exacerbated by the' land user (Umar, 2004).

Conclusion

The findings of this study revealed that there is significant variation in biodiversity in terms of types and density between farmland and grazing land. Different species including trees, shrubs and grasses are extensively assessed and their functions are analyzed. The intensive grazing in the area is largely affected by grass species biodiversity while cultivation is largely affecting the trees species, especially irrigation activities, as it has direct effect on trees. The study shows the extent of how different species are facing extinction base on the different humans' activities as well as climate change.

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