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In Situ Forest Biodiversity: Integrating Indigenous and Local Knowledge Systems into Conservation Policies in Southwestern Nigeria

Ajibade Lanre Tajudeen

Departments of Geography, Faculty of Social Sciences, University of Ilorin, Ilorin, Nigeria

***Corresponding author:** Ajibade Lanre Tajudeen, Departments of Geography, Faculty of Social Sciences, University of Ilorin, Ilorin, Nigeria, Tel: 2347031182966; E-mail: ajadi_saheed@yahoo.com

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Abstract

Biodiversity loss has become a major problem in Southwestern Nigeria because 70-80 % of its forest has been converted to non-forest uses. Modern conservation systems have not yielded desired result because the techniques had proved inadequate in addressing conservation issues. The study is therefore an assessment of indigenous and modern methods of forest management in Southwestern, Nigeria. Primary and secondary data were used in this study. The secondary data (inventories of woody species, lists of communities within the buffer zone, types of forest resources and conservation techniques) were obtained from Osun Osogbo Sacred Grove (OOSG) and Old Oyo National Park (OONP) records. Quadrant method was used for sampling of the woody species. The study sites consisted of eight plots of 50 x 50 m along two 300m long transects. One Way ANOVA, Relative Species Index, Species Diversity Index (SDI), Important Value Index and some descriptive methods, such as; tabulation, percentages, mean and standard deviation were used to analyse the data. The findings of the study were that: biodiversity index was higher under indigenous conservation method at OOSG of (3.48) compared to OONP (3.14) under modern conservation method and the Species Diversity Index (SDI) suggests that both indigenous and modern techniques of forest conservation encouraged biodiversity conservation (SDI 3.01- 8.27).This study concluded that indigenous conservation techniques yielded better conservation results and contribute to biodiversity integrity of the study area. The study recommended that there should be a policy that will strengthen and integrate existing indigenous practices to further make stronger conservation efforts.

Keywords: Biodiversity; Indigenous knowledge; Modern; Conservation; Nigeria

Introduction

Forest biodiversity is of importance in environmental conservation. Forest resources play a key role in protecting the environment and can be sustained either by modern or indigenous systems the outcome of any will affect forest resource management. In Nigeria, forest resources continue to attract more attention due to their significance in biodiversity conservation, carbon sequestration and livelihood support. Rich and diverse types of indigenous, traditional forest and pasture management practices vary throughout Nigeria according to different cultures, locations, climatic conditions and socio-economic situations [1].

Conservation of biological diversity is essential for efficient functioning of the earth ecosystem. Forests are ideal habitats for a wide range of flora and fauna some of which are endangered species. Forests create vertically stratified habitats upon which nearly all other forest dwelling organisms such as micro-organisms, small plants, insects, reptiles, birds, and animals depend.

Forests are especially substantial in terms of their potential for triggering subsequent changes in biodiversity within and among associated organisms. This is because they exert such a major effect upon all lives above, amidst and beneath them. Forests also influence local and regional climates and soils as well as serve as checks in the loss of biological diversity and the species of plants composing various ecosystems.

in-situ conservation is an ideal method to protect ecosystems in their natural habitats especially now that there is substantial evidence of increasing loss of biological diversity globally The accelerating rates of loss of floral and faunal species and the projected negative impacts of this loss of germplasm on humankind have been expressively described by a growing number of prominent scientists and numerous international organizations and development agencies [2].

Decline in biodiversity is increasingly becoming one of the major concerns of humankind since the last quarter of the 20th century. In highlighting this view, the 2002 World Summit on Sustainable Development, held in Johannesburg - South Africa, declared that despite significant efforts, the decline of biodiversity worldwide continues at an unprecedented rate and that a reversal in this ongoing decline should urgently be achieved.

Similarly, UNESCO observes that the reversal of biodiversity decline has become one of the major challenges that the world faces today. It is from such reality that biodiversity decline is increasingly becoming a worldwide challenge that requires collective and urgent efforts at local and international levels. Biodiversity is already being reduced, degraded, and hugely threatened across the planet.This situation points to the destruction facing environmental systems and resources. In spite of all these, biodiversity resources, if sustainably