PRACTICES TOWARD SUSTAINABLE NATURAL FOREST AND ENVIRONMENTAL MANAGEMENT

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Abstract

This paper examines practices toward Sustainable Natural Forest and Environmental Management. Thus the paper looks at the various environmental impact of natural forest deforestation, identify causes of environmental degradation and to describe practices that ensure sustainable management of natural forests.

The world agricultural practices geared toward environmental sustain ability as it is faced with various aspect of environmental degradation as a result of daily human activities. Forest environment whose benefits were known to include conservation of water cycle and climate, soil formation ,nutrient recycling etc has attracted ever increasing demand for forest goods and for developmental purpose, which have led to very adverse- effect on the forest ecosystem. The results of deforestation are desert encroachment, environmental degradation climatic change, pollution and above all global warming. Ethno botanical survey and inventory, economic evaluation of forest products, creation of extractive forest reserves, adoption of community forestry management system, role of women in forest management, non- governmental organization and agro forestry practices are the practices highlighted toward sustainable natural

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forests and environmental management to mitigate global warming and climate change especially in the developing world in which Nigeria is not an exception. Exploitation of nation forest should be controlled with adequate monitoring and ecologically friendly logging technologies should be involved and sustainable forests management practices should be centered on the indigenous people's knowledge for the desired goal of biodiversity conservation to be achieved

Key words: Practices, Sustainable, Forests Environment, Nigeria.

Introduction

The world agriculture is geared towards environmental sustainability as it is faced with various aspect of environmental degradation Opara-Nadi (1998) Eke, et al (2010) asserted that the most interact able problems facing the world today. Include the food shortage, hunger crises and global environmental degradation. Forest environment whose benefits were known to include conservation of water cycle and climate, soil formation, nutrient recycling etc, has attracted ever increasing demand for forest goods and for developmental purpose, which have led to very adverse effect on the forest ecosystem. The results of deforestation are desert encroachment, environmental degradation, climatic change, pollution and above all global warming (Altah, 2003 Eke, et al 2010).

In Nigeria most domestic energy comes directly from biomass sources even though Nigeria is an oil rich country. Forests are commonly known for the goods that they provide such include timbers, fuel wood, fodder and other non- timber forest products such are, soil, snail, mushroom, wild vegetables, wild fruits etc. Forest also provide a number of crucial ecosystem services, protects up stream watersheds and wetlands, conserving biodiversity and gene pools for the future generations and in providing landscape beauty. Adedire, (2007) Eke, (2010) described forest as a fundamental and vital component of the world ecosystems that provide habitat for large proportion of world's plants and animals species.

These forests suffer from a lot of environmental degradations as a result of human economics activities, and forest loss is still a major concern to human humanity. The anthropogenic perturbation of the natural environment had increased tremendously over the

years, following increase in human population and economic activities. Humankind has over exploited the forest resources and over loaded the environment with pollutant. The combined effects of these activities have led to significant changes in the environment, such as reduction in vegetative cover and quality species extinction, changes in climate conditions and reduction in water ,moisture air, and soil qualities which are collectively disturbed as a result of environmental degradation(Olaitan et al 2010) climate change in particular, is expected to have impact on forest biodiversity and the ability of forests to provide soil and water protection, habitat for species and other ecosystem services. Most rural poor derive their livelihood from wild species of biodiversity.

The urban population is also benefiting from the exportation of the country's biological resources (Adegoke et al 2010).All forms of environmental degradation are capable of producing multiple and complex effects on natural resources because of the interconnection of all these resources. It is unfortunate that some of the forest plants and animals species are going into extinction due to deforestation and over exploitation of our forest (Eborh, 2005). There is an urgent need for practical steps to be taken by agricultural extension officers. In order to mitigate effects of change (Ekanade, 1995)

Objectives

The objectives of the study are to examine various environmental impact of natural forest deforestation, identify causes of environmental degradation and to describe practices that ensure sustainable management of natural forests.

Materials and methods

A descriptive approach is used in this work to point out issue involved in the study. The paper will describe environmental impact of deforestation, causes of deforestation and mention various sustainable management practices in solving environmental problems.

Impact of deforestation

Deforestation result in environmental problems such as erosion, wind storm erratic rainfall, flooding, silting of water bodies, water shortage, land slide, decline of soil fertility and threat of extinction of certain species of trees and other flora and fauna (Adedire, 2007, Eke, et al

2010). The mass destruction of the world rainforests is not beneficial to our environment (Oso, 2007). The burning of forest plants in order to clear land releases *carbon (IV) oxide* into the atmosphere thus increasing the global warming, Adegoke(2010) asserted that amount of *carbon IV oxide* currently in the atmosphere is estimated to be about 900 billion tones and is increasing at the rate of about 1 percent annually, deforestation reduces the soil water content, and ground water as well as atmospheric moisture (Fenical, 1983). The long term impact of deforestation on the soil resources can be very severe, clearing the vegetative cover through slashing and burning of farming land exposes the soil to the intensity of tropical sun and torrential rains. These affects the soil negatively by increasing its compaction leaching out its few nutrients available for crop, reducing the organic content and making the soil in marginal for farming (Adedire, 2004). Deforestation has a great influence on local and global climate when the forest is destroyed absorption of water into the soil will not be possible again and this leads to flooding and also leads to drought. Deforestation necessitated increase in temperature, trees provide shades and the shaded areas are usually characterized by a moderate temperature. According to Boo (1990) Adegoke, (2010) tropical forests are thought to play an important role in climate control by helping to maintain the global heat balance. Deforestation may account for as much as 10% of current green house gases emission. Green house gases are gases in the atmosphere that literally trap heat. The greener house gases that are release into the atmosphere the more the heat are being trapped. Hence there is a global warming trend in which the average temperature becomes progressively higher. The rapid destruction of rainforest has various effects on forests dwellers and animals as the process of deforestation in various geographical regions is destroying this unique environment. Consequently many animals and plants that live in the rainforests face the specter of extinction. The extinction of the plants and animals leads to diminished gene pool. The lack of biodiversity and a reduced planetary gene pool could have many unforeseen ramifications some of which could be fatal to the future of humanity. Destruction of the forest through exploitation destroys the source of life of the indigenous people, forest dwellers and animals that live in the forest.

Causes of Deforestation

Deforestation involves the cutting down of fuel wood, commercial logging, industrialization and urban expansion (Adegoke et al 2010). This has been in practice since the

beginning of civilization (wunder, 2000, Adegoke et al 2010). Due to rapid growth in population, large expanse of land were cleared for commercial and industrial developments such as road and building constructions, there is also more demand for wood to be used for firewood, charcoal production construction, paper and furniture making. The main cause of deforestation in West Africa particular in Nigeria is a growing population and subsequent higher demand of land for agriculture, livestock production and fuel wood (Ekanade et al 1996). Ignorance and illiteracy among rural people may have contributed to deforestation whereby they believe that forest is a free gift of nature that cannot exhausted. They thereby use it indiscriminately. But according to MacEchem, (1990) reported that the rainforests are disappearing because they are ignorant or stupid. Furthermore exploitation of the forest by cutting down natural grown trees for monocropping of exotic tree species that mature early and sell at high price is another causes of deforestation whereby, the primary concern is to make profits within a limited time.

Sustainable management practices on natural forests.

Sustainable forest management practices (SFMP) is capable of reducing deforestation and its attended complication especially global warming. This is defined as the stewardship and use of forests and forest lands in a way and at a rate that maintain their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill now and in future relevant ecological, economic and social functions at local national and global levels and it does not cause damage to other ecosystem (Briner 2004, Adegoke et al 2010). The concept was further described as the attainment of balance, balance between societies increasing demands for forest products and benefits preservation of forest health and diversity. This balance is critical to the survival of forest and to the prosperity of forest dependent communities (FAO, 2001, Adegoke 2010). Sustainable forests management practices involves, Ethno botanical survey and inventory: it is imperative now to embark on comprehensive botanical survey of our natural forests the aim of identifying and classifying the valuable forests resources. The local people who have the indigenous knowledge of the resources should be involved in this exercise. According to Muul, (1993) Olajide, (2003) much of knowledge about the economic value of intact forest is already possessed by the indigenous people who have depended on these ecosystems for generation. Identification and documentation of varying species that produce economically forest products in

various areas where natural forest exists would facilitate the fashioning out of appropriate and effective sustainable forests management practices.

Economic evaluation of forest products.

It is platitude that good decisions can only be based on good data. Tropical forests resources management is generally be devilled by lack of good data on which good decision should be based (Mgeni 1991, Olajide, 2003). The contribution of forest products to rural economy in particular and national economy in general has not been accounted a large proportion of rural population earn their livelihood from the collection or extraction and sale of forest products FAO, (1983) Olajide, (2003) discovered that through collection and sale of forests products the quality of life and standard of living of rural population located near forests reserve improved significantly over their counter parts without similar forests reserve. In Peru and India for example fruits and latex have already been calculated to provide higher profit than cutting the forest timber and later using the land to raise cattle (plokin and Famolare, 1992).

Creation of extractive forest Reserves

The forests reserve in Nigeria are basically managed for timber production. The methods of timber extraction are very destructive. Logging often paves ways for other more destructive activities like pasture establishment and farming. The conversion of a natural forest to pasture and farm result in extinction of valuable biodiversity. The expectation of ethno botanical survey and inventory and economic evaluation of forests products earlier discussed is to provide information that should guide in the constitution of appreciable areas of the remaining natural forest where there are high production of forest products as exclusive extractive forest reserve. Creation of extractive forests where timber extraction will be prohibited would ensure the enjoyment of the benefits of the forest, biodiversity in perpetuity.. The sustainable management practices of the extractive forests would only allow the collection of materials, like edible and medicinal plant materials rattan mushroom latex and snails. This type of forests reserve would undoubtedly engender sustainable livelihood of many rural people who trade in the non-timber forests (NTFPs).Also that type of forest reserve mitigate the impact of global warming. According to Nokoe, (1993) Ayanwuyi (2002) Olajide (2003), the creation of

extractive forests (as set up in Amazonia, India and Peru) would offer long- term use to groups of people who choose to live in harmony with the forest ecosystem.

Adoption of community forestry

Management system: the forests management system in Nigeria generally does not involve the indigenous people in the management of constituted and legally gazette forests reserves. These methods of management hijacked and estranged the people from the forests. The forestry department gives concession to timber contractors to exploit timber without effective monitoring machinery to ensure sustainable exploitation. Consequently the forests are depleted denuded and destroyed. Therefore successful conservation of forests resources generally would be a mirage without integration of the people in the communities adjoining the forest estates. The people should be made to know that government is assisting them in managing the forests on sustainable manner. Communities should be encouraged to constitute forest management communities which would be liaising with the forestry department on the issues bordering on forest protects on card conservation, timber exploitation and payment of royalty to the communities. More importantly there is need to emphasized and strengthen forestry extension services obviously extension services has not been accorded importance in the years. It is quite apparent that the use of general agricultural extension network for sustainable forest management practices (SFMPS) has provide ineffective because of many disparities between agricultural and forestry practices. Vibrant forestry extension service in tandem with community forestry management system hold promise for sustainable conservation of the remaining area of our natural forests.

Role of women in forest management and protection:

In planning sustainable development projects and programmes there should be assurance that women and their dependents would benefit from such developmental objectives. Women can make important contributions in forests regeneration and conservation if they are allowed to have assaying forest management. It is essential that they are given some management role, either in relation to community forest, degradation plots of land or forest based enterprises (srivastava, 1991, Ayanwuyi 2002). Since the chipko movement women (CMW) in India have been in the forefront activities to protect forests. In Dehradun district or Uttar Pradesh in India heads of Mahihar Mandals women have now been granted identity cards by the forestry

department to act as forest patrol agents and the women have requested for training (Cecelski1984). Also several successful. Examples of involvement of women in forestry management practices with the help of non- governmental Organization (NGOs) have been recorded (Agarwal, 1985) one success story is from Bankura in west Bengal in India. Here the women were organization to afforest waste land (Narayan and Sachindra, 1982). But not yet in Africa (wiersum, 1984)

Non- government organization (NGOs):

N GOs have made significant contributions to a forestation in the tropics. According to Grainger (1984) Sense (1984) thereby providing the best medium for achieving a rapid expansion in planting rates. In Senegal for example NGOs planted more trees than the government forest reserve in 1983.

A forestation: is the establishment of forest plantation or other woody cover, such as wind break on land which has been devoid of forest cover for sometimes. A forestation techniques should involve the active support and participation of local people, because the techniques of a forestation involves low cost and simple technology for improving rural environmental quality and to control Global warning. Plantation and wind breaks provide fuel wood and fodder that is often in short supply and protect both fuel and community from cycle also becomes more stables with cool and moisture air.

Agro- forestry practice: this is the development of long term sustainable human based productive life maintenance. this systems involving the use of ecologically sound methods of producing crops, plants animals and trees by the use of *Luecaena, leucophala, Cliridia spium Acacia albida(kashia)* Shelton 2000,Place, et al 2003, Ayanwuyi, 2002).

Agro forestry is the creation and maintainer of land use system that include the production of crops, trees within the some contiguous space (Aryan, and Niranjan, 2000). Tree planting in agro forestry provide farmers with many products and services like food, fuel wood, fruits and nuts, poles, fodder, staking timber, medicine mulch shade and wind break all those products can bring needed income to the farmer (Fagbola and Osonubi, 1998).)One thing that many agroforestry have in common is the planting of fast growing trees that take nitrogen from the air and deposit it in the soil (Sharma and Singh, 1998 Pinstrup, 2001). Some of these trees have nitrogen fixing roots systems which also allows the plants to store nitrogen in the braches

and leaves NAS, 1979, 1980, ICRAF, 2003). The young trees are cut, chopped and mixed into the soil just prior to planting food crops, thereby building up organic matters and adding nutrients as long as the trees are growing they capture nitrogen that farmer would otherwise have to purchase in the form of fertilizer (Bohringer et al 2004, ICRAF, 2003).

Agro- forestry is a crop production system that uses appropriate input and systems including composting, biomass energy, solar energy, recycling, polyculture, wind energy biological control, organic farming gardening methods water and soil conservation technologies and other appropriate technologies that avoid the use of sticides and insecticides (Cheung and Wong, 2000). Consultative Group on International Agricultural Research (CGIAR, 2004) found that agro-forestry can trap as much as three tones of carbon per hectare in each year. Also Charlie , et al (2004) discovered that using of agro-forestry methods can increase biodiversity on farm land up to 20% in tropical climate.

Conclusion and recommendation

The status of our present forest and they have caused by deforestation to our environment, climate and biodiversity were examined. Forests are main-life supporting mechanism for planet earth and are also key to sustaining the biodiversity of natural ecosystem and in regulating the world's climate system. Forest then had been and is still nature's renewable resource that. If properly managed it can help solving some of the environmental problems facings our forests and agricultural practice today. As a result, heat their living, would be achieved through careful forest management and aspect for natural resources.

Therefore exploitation of timber in the nation's forests should be controlled with adequate monitoring through canvassed of ecologically friendly logging technologies. Natural forests should be managed sustainably for multiple uses and natural forests management should be centered on the indigenous people for the desired goal of biodiversity conservation to be achieved.

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