

ASSESSMENT OF INCOME GENERATING ACTIVITIES THAT INFLUENCE SUSTAINABLE LIVELIHOODS OF FOREST COMMUNITIES IN NIGERIA: IMPLICATIONS FOR POLICY ENHANCEMENT IN NIGERIA

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ABSTRACT

Forest reserves around forest settlements are continuously encroached by the rural dwellers for sources of income generation. This study identified and evaluated Alaguntan forest reserve and the effectiveness of different income generating activities and interventions that will influence the livelihoods of the forest communities. The study revealed that the government established some farm settlements around the forest reserves areas. The interventions brought by the government include access to and use of land for agricultural production of cash crops, seasonal maintenance of roads that leads the settlement to urban communities. The identified sources of income include production and sale of agricultural products, snail and animal hunting and harvesting of mushrooms from the wild. Sales of firewood seem to be one of the major income generating activities. This shows that there is a considerable amount of trees that are felled by the communities. The policy implications of this is that government should enforce laws to ban illegal felling of trees and support more effective income generation strategies through involvement of local organizations and strengthen coalition building with income generation opportunities for sustainable forest community livelihoods in Nigeria.

Keywords: Forest, income, sustainable, capacity building, livelihoods, policy, Nigeria

INTRODUCTION

Nigerian Economic Situation

The structure of the Nigerian economy defines the essential characteristics of the central problem of under-development: a low level of production base, a monocultural production structure, degraded environment and the predominance of subsistence and commercial activities. Per capita income remains under \$750 and the number of people living in absolute poverty is on the rise. The current situation does not reflect the country's great wealth in natural and human resources. The analysis of the structure and growth of the Nigerian economy involves the review of the structure and growth of the gross domestic income and expenditure, composition of investment expenditure, exports and imports as well as the relationship between savings investment with an emphasis on their influencing factors (NISER, 2000). It is obvious from the analyses that Nigerian economic development aspirations, four decades into Nigeria's post independence era, remains that of altering the structure of production and consumption activities to diversify the country's economic base, reduce its dependence on crude oil and subsequently reduce poverty among the populace.

Therefore, for Nigeria to effectively diversify her economic base the focus of policy instruments must aim at reconstituting the excessive dominance of the primary sector. However, micro-economic policy distortions in the early 70s of the Nigerian economy, despite its vast resources, has yet to create the necessary institutional and structural changes that will enhance rapid and sustainable growth and development and poverty reduction. There are no incentives in both the private and public sectors, leading to low/weak maintenance of infrastructure. Unsurprisingly, the increase in oil pump price and deregulation has increased the cost of living. The expansion in aggregate consumption of foreign goods hurt Nigeria's economy. Nigeria has therefore been experiencing a deplorable poverty situation. The people who often feel this situation most are the rural dwellers (those living around forest reserves or enclaves), and uneducated people with large families.

Forest Ecosystem

The forest ecosystem is often seen as a complex and highly dynamic array of living communities of plants and animals interacting with non-living things such as the soil. Abu et al (2002), see the system as self-renewing and transforming through a cycle of processes that ecologists have yet to understand. In any case, human encroachment or interventions has either enhanced, or often degraded, the ecosystem. Sometimes the encroachment could be very devastating on the forest ecosystem, thereby rendering it unprofitable and unsustainable. Therefore the forest communities need to understand the ecosystem of the forest and its potential as an income generation source in order to cause little or no damage to the forest ecosystem, and at the same time maintain sustainable ecosystem regeneration or sustainable forest management/conservation.

Forestry And Economic Development

The focus for better economic development in all areas of the economy in Nigeria is poverty reduction or alleviation through the enhancement of economic growth. Research has shown that agriculture plays an important role in the economic development of a nation (Olaniran, 2002). However, this growth must be visible in all areas of agriculture dealing with land and natural resources. According to Olaniran, forests in Nigeria are divided into three ecological zones, occupying land areas of about 10 million hectares, the humid forest zones have annual rainfall of over 1600mm, sub-humid zones with about 1000–1600mm rainfall and the Savannah zones with less than 1000mm. Forests contributes to economic growth and national income. The forest sub-sector accounts for about 8% of the agricultural gross domestic product. Forest also plays a role in the sustainability of the forest communities' living (Gbadebo et al, 2002). FAO (1991); Abiola (1997) identified forest as indirectly contributing to household food security through income regeneration and employment.

Deforestation And Environmental Issues

Tropical deforestation has been a tropical environmental concern (Azeez, 2002) affecting both the forest areas and forest communities. Forest and forest covers have important

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environmental roles to play globally. The forest cover protects the environment by regulating soil water, habitat for wildlife, biodiversity, carbon fixing (UNEP, 1992) and provides other numerous natural resources. In Nigeria, deforestation has been seen to cause erosion that is affecting reservoirs, decreasing the aquatic populations, reducing the navigability of canals and also the quality of soil (Olaniran, 2002). He noted that forest wetlands, and of course forest in general, should be a place where deforestation must be avoided. The problem of desertification and environmental degradation threatens not just Nigeria but the whole world. Fuelwood that is usually for domestic use is becoming very scarce and expensive. Therefore, fuelwood shortages are greatly sped up by man's unbridled activities such as felling of trees and deforestation and the over grazing of livestock. The foreseeable consequences of deforestation and wood shortage call for urgent interventions for the government to increase poor forest communities' influence over income and assets opportunities through policy reforms.

Positive environmental benefits will always result from good forestry practices. Abu et al (2002), emphasized that there is the need to ensure that interactions with forest resources are guided by key concerns for sustainable management and conservation. The emphasis on research should focus on exposing the activities that threaten sustainable forest management (SFM) and propose better actions. This could be done through strong organizational, local, regional and global institutional coalition building.

Forest Sub-Sector As Potential Income Source

The forest sub-sector accounts for about 8% of the agricultural gross domestic product. It provides employment for varying groups of people (Abiola, 1997; Olaniran, 2002). Trees, when matured, can fetch the forest communities a lot of income. The forest is important for edible fruits, vegetables, medicines, edible oil, spices, drinks, bush meat and other products called non-timber products. Almost all rural dwellers depend on fuelwood as their source of energy for domestic uses, planting of trees can reduce the high cost of fuelwood. Better forest management can enhance land productivity, which will make rural dwellers not depend so much on agricultural residues, which are supposed to be incorporated into the soil for fertilization as an alternative to fuelwood. If the watersheds are protected, they provide habitats for wildlife and help stabilize the fragile ecosystem. Forest also provides fodder for livestock. The estimated benefit of biodiversity in general (in billion dollars), by the Federal Environmental Protection Agency in Nigeria, amounts to \$03.75 GDP (Various species). Current benefits (various species, subsistence, ecosystem, scientific and recreational) are \$06.00; non-current, option, existence and bequest uses are \$01.00; and direct employment benefits are \$15.60. All these will amount to about \$26.35 billion. Despite these numbers, biodiversity depletion continues unchecked.

Afforestation Interventions In Nigeria

The Afforestation Programme is jointly sponsored by the World Bank, Federal and State government. The aim of the programme was to stabilize conditions in deteriorating areas. The Ondo State Afforestation Project (OSAP) is situated within the reserve in the area. The project was executed over a period of six years between 1980 and 1986. This is part of the long-term plantation programme in Nigeria and is expected to yield 300 m³/ha of pulpwood and saw logs over a period of 15 years at the ratio of 2:1 (Azeez, 2002). The project was coordinated by Afforestation Programme Coordinating Unit (APCU). Each state units works under the State Forest Department (SFD), headed by a coordinator who in turn is supported by Extension and Training Staff, Finance, Monitoring and Evaluation as well as the Research Department. They are to make sure that the following objectives are achieved:

1. Establishment of planting stock through reactivation of the existing nurseries to produce seedlings;
2. Establishment of 525 kilometers of conventional shelter belts to protect 10, 500 hectares of farmlands;
3. Carry out comprehensive farm forest extension services and
4. Carry out applied research in forest nurseries shelter belts and farm forestry.

These objectives were set out to stabilize and sustain forest and forest communities.

However, the main problem for attempts at sustainable forest management and conservation is that it is rarely a viable financial proposition while forest exploitation such logging and deforestation continue to be highly profitable activities (Richards and Moura Costa, 1999). The opportunity cost of sustainable forest management is often earned from forest exploitation and alternative land uses. The high cost of 'time' in sustainable forest management or conservation stemming from slow biological growth encourages these non-sustainable options. Poor incentives and development for sustainable forest management and conservation and the problem of giving value to forests, especially forests with high environmental functions and biodiversity conservation, are challenges. The estimated cost of the unidentified measures for conservation and rational use of the biodiversity base is often approximated at \$595.07 million. The Federal Environmental Protection Agency (FEPA), (1992), analysis of the Nigerian Economic burden of sustainability through biodiversity conservation indicated also that the share of the cost of the measure on the GDP was 4.17% in 1990. In any case, no serious efforts have been made to estimate the financial needs of the forest reserves areas, or forest users. Nonetheless, research in developed nations has shown that the forestry sector could be self-financing through effective taxation of the forest rent (Repetto and Sizer, 1996).

However, the main focus of this study is to evaluate the effectiveness of different income generation activities and interventions that will enhance sustainable the livelihoods of forest communities. The crux of the matter is how to provide appropriate financial incentives which has a vital role to play in strengthening local organization and coalition building, then developing the regulatory framework for forests by identifying policy reforms that support more effective income generation strategies and local organization and coalition building for the poor forest communities.

METHODOLOGY

The study area is Alaguntan forest reserve located between latitude 6° and 7° and longitude 3° and 4° E. The reserve is situated in Isokan Local Government of Osun State which is in Southwest Nigeria. Alaguntan forest reserve has a total land area of 882 km². The study area has a moist tropical climate with two major air masses that influence the climatic condition. The area is characterized by a bi-seasonal-rainy and dry pattern with the average relative humidity of about 84% daily during the rainy season while annual temperature average is 26.95°C. The topography is gently undulating elevation ranging between 30m 300m above sea level along the valley of major rivers around the reserve.

The target population for this study was comprised of rural men and women in the settlement around Alaguntan Forest Reserve. Two communities were randomly selected for this study. One respondent was picked from each of the sixty households randomly selected from each settlement making a total of 120 respondents. A

well-structured questionnaire interview schedule was administered to the respondents with the help of an enumerator. Also, focus group discussions were utilized involving opinion leaders to support the information collected with the questionnaire. The data collected were analyzed using descriptive and inferential statistical analysis. Descriptive analysis was presented using frequency counts, percentages, pie and bar charts. The inferential statistics will involve the use of Chi² to test for significant relationships.

RESULTS AND DISCUSSION

The study analyzed one hundred useful questionnaires that could be retrieved from the respondents out of one hundred and twenty questionnaires distributed. The data are analyzed based on the objective of the study and presented under different headings.

Personal/socio-economic status of the respondent in Alaguntan Forest Reserve

This represents the distribution of the respondents by age, sex, marital status, educational status, major occupation and sources of income generation in the study area.

Figure 1 represents the age distribution of the respondents, which shows that the majority (70%) of the respondents are between 30–49 years of age. Followed by 20–29 years (18%),

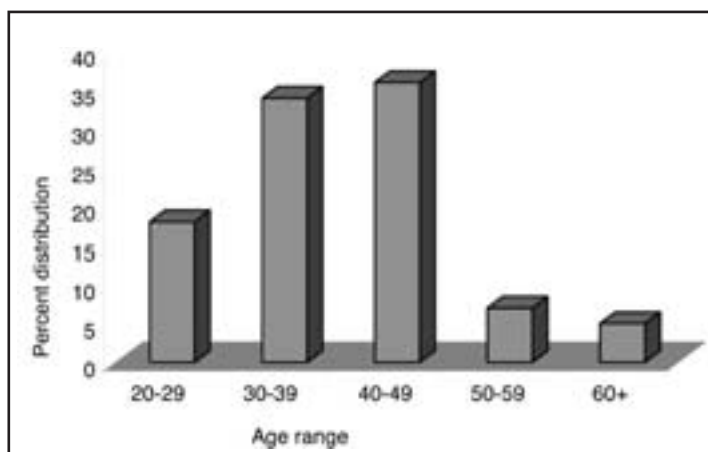


Fig. 1: Age distribution of the respondents in the study area

Table 1.— Educational distribution of the respondents.

Educational level	Frequency	Valid Percentages
No education	5	5.0
Adult literacy	28	28.0
Primary school education	9	9.0
Secondary school education	23	23.0
NCE/OND/HND	32	32.0
B.Sc.	2	2.0
M. Sc.	1	1.0
Total	100	100

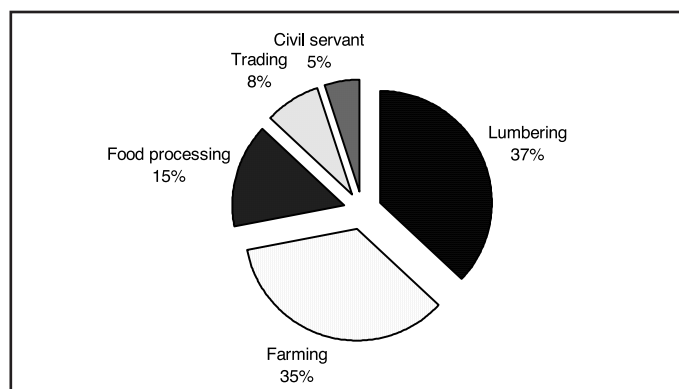


Fig. 2: Distribution on the occupation of respondents

50–59 years (7%), and older people from 60 years and above (5%). This shows that many mature and active people are living in this settlement that have the responsibility of taking care of themselves and their families. The settlement is meant to house both men and women. However, the result collected indicated a greater number of males (65%) than females (35%). This could be attributed to a low response by women as the people in this study areas still relegate women to the background due to culture. The study also revealed that more than half of the respondents (86%) are married. The widowed are about 5% while separated ones are 1%. These groups of settlers will need a source of income generation to take care of their families, more than the very few singles (8%). The reason being that married people will feel the effects of deforestation, especially shortage of fuelwood. This will encourage forest encroachment for income generation.

Table 1 shows that the majority of the respondents (60%) had little education, very few had no formal education (5%), and just less than half (35%) had higher education. This will affect the rate of involvement and acceptance of innovations that will improve the settlers' livelihoods.

Figure 2 shows that 35% of the respondents are farmers and 5% and 8% respectively are civil servants and traders. Many of them engage in lumbering (37%) as their major occupation. This shows the different categories of occupation engaged by the settlers. The high number of the respondents that engage in lumbering exposes the activity that threatens sustainable forest management. The focus group discussion exposes other forest based income generating activities engaged by the settlers such as; snail collection, honey collection, gathering of fuelwood, gathering of fruits and nuts, collection of mushrooms, collection of chewing sticks, leaves for wrapping, collection of medicinal herbs, collection of spices, hunting for bush meat and craft and basket weaving. This also shows that this forest can make a great contribution towards improving the livelihoods of the communities around them.

Intervention from the Government

Most of the respondents (74%) stated that the main intervention received from the State government was the supply of cocoa seedlings. Those that received palm seedlings (8%) and both (17%) were very few. This shows that most of the settlers got their seedlings from the government and this could be linked with the percentage (58%) that do not participate

Table 2.—Chi² test of relationships between income generating activities and respondent gender.

	Chi ² - value	df	P - value	Decision
Gender	8.049	4	0.090	NS
Education	93.504	24	0.000	S
Perceived improvement				
In livelihood	42.404	16	0.000	S

Table 3.—Chi² test of relation ship between frequency of tree felling and gender/ education.

	Chi ² - value	df	p- value	Decision
Gender	4.116	1	0.042	S
Education	13.632	6	0.034	S

in tree planting. While only 48% do plant trees, this is probably the percentage that could source seedlings from the government. Therefore their planting of trees is dependent on the number provided by the government. Interestingly, it can be deduced from the focus group discussion that the respondents plant mostly fruit seedlings, trees for fuelwood and medicinal plants. All the respondents believed that the intervention brought by the government/generated by the forest has produced an employment benefit. Apart from the provision of seedlings, government also has a way of improving their livelihoods by giving them access to use of land for agricultural production.

Constraint Faced by the Communities

One crucial problem encountered by the participant is lack of capital to enhance their income generation activities. All the respondents (100%) indicated lack of social amenities as another constraint to sustainable livelihood. These include, electricity, pipe born water, accessible road, credit facilities, restrictions in the type of crops to plant, inadequate farming land, and the high cost of labor.

Frequency of Tree Felling in the Area

The results show the alarming frequency of tree felling in the area (Fig. 3). Sixty-seven percent of the respondents' felled trees weekly and 33% felled trees fortnightly. This results from the poor deteriorating state of the economy and political instability and also contributes to the high rate of deforestation. For example, the number of the respondents that do not plant trees and the number that fell trees in the last few years have also resulted in over-logging of the forest resources to generate income. Therefore, poverty caused by the deteriorating economic situation constitutes a fundamental constraint in the ability to undertake protective measures to ensure sustainable forest management and development. Their response, that they usually get permission before felling trees, is untrue based on the frequency of tree felling. In any case, the focus group

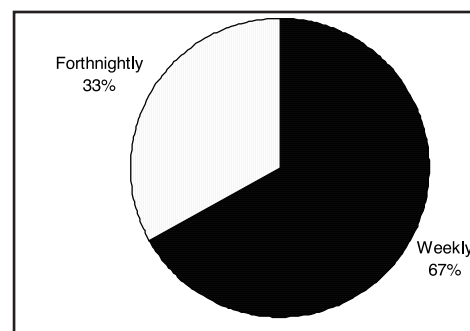


Fig. 3: Distribution of respondents on frequency of felling tree

discussion contradicts the above statement, indicating that there is illegal tree felling, higher than the number that have permission from the government.

Agricultural Extension Activities

Provision of information, training and visits by extension agents helped to provide information and skill on the best management techniques and exposure to sources of income generation or better livelihood activities. An extension agent has either weekly or fortnightly or monthly, visited all the respondents. This should have improved their income generation but for the dearth of extension agents in the area to visit them more frequently.

Table 2 shows that there is no significant relationship between income generating activities and the gender of the respondents. However, there is significant relationship between income generating activities and education. This is because more educated persons are involved in civil service and the less educated are involved in farming (various small scale farming). The results also revealed that the respondents perceived their income generating activities as improving their livelihoods.

Table 3 shows the significant relationship between frequency of tree felling and gender/education. This means that probably the more educated do not illegally fell trees and not frequently. Gender also has a significant relationship with frequency of tree felling. This could mean that more men fell trees than women.

CONCLUSION

The study has shown that forest reserves could aid in improving sustainable livelihoods of poor forest communities. Different income generating opportunities have also been identified in this forest reserve community that can enhance the livelihoods of these people through effective intervention. However these opportunities are constrained with weak organization coalition building and inadequate human and material resources. Government, local organization, extension agents and forest reserve communities must work together to achieve sustainable forest management and then support enhanced income generation sources. The issue is that the forest communities cannot manage and foster their own development successfully.

Policy Issue

There should be enforcement of policies to support more effective income generation strategies through:

- Local organization and coalition building
- Increased capacity participation
- Identify leverage points for the poor forest people to increase their influence over income and assets opportunities

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