



Full Length Research Article

HUMAN OCCUPATIONAL ACTIVITIES IN THE STUBBS CREEK FOREST RESERVES (SCFR) OF AKWA IBOM STATE: IMPACTS AND IMPLICATIONS ON SOCIO-ECONOMIC ENVIRONMENT

***Essien, Blessing Stephen and Okon Sunday Udoh**

Department of Sociology and Anthropology, University of Uyo, Nigeria

ARTICLE INFO

Article History:

Received 28th December, 2014
Received in revised form
08th January, 2015
Accepted 11th February, 2015
Published online 31st March, 2015

Key words:

Occupational activities,
Stubbs Creek Forest,
Environment,
Akwa Ibom State.

ABSTRACT

Akwa Ibom State with a total land area of 8412.0km² is endowed with Stubbs Greek Forest Reserve (SCFR). The exploitation of the SCFR has reached an alarming proportion principally due to human occupational activities such as farming, lumbering, oil exploration, road and residential constructions. Relying specifically on field-based data from 240 respondents from three Local Government Areas in Akwa Ibom State, it has been observed that, continuous exploitation of the SCFR through human occupational concerns has resulted in the destruction and loss of human habitat and bio-diversity. Also, deforestation, loss of genetic base in plants and animals, loss of wildlife as well as air and water pollution are noticeable adverse consequences. Socially and economically, inhabitants of the exploited zone continue to remain in abject poverty, hunger, thirst and malnutrition. The study therefore recommended that concrete and comprehensive SCFR management policy be evolved to check the unnecessary human exploitation of the zone. More so, proper sensitization, orientation, and education of the people on the needs to preserve the lives of animals and plants in the SCFR should be intensified. Such orientation will expose these exploiters to the dangers of deforestation on the lives of the people.

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INTRODUCTION

The Stubbs Creek Forest Reserve (SCFR) was first considered as an ecosystem by order No. 45 of 1930 which was later modified in 1941(Anab,1997). The establishment of the Reserve was gazetted in the defunct Eastern Region Gazette No. 52 of October 18, 1995. Presently, the Stubbs Greek Forest Reserve (SGFR) is the largest gazetted forest reserve in Akwa Ibom State, covering an area of 310.80km², located within the Local Government Areas of Esit Eket, Ibeno and Mbo, and extends from Qua Iboe River to the Cross River Estuary (Ekpo, 2001; Aweto, 1995 and Udoh, 2011). Studies confirmed that although most of the forest and game reserves in Akwa Ibom State, such as the Ewet, Odot, Obot Ndom, and Ibiono Ewura have not been gazetted since inception, a few of the gazetted ones are in a state of extinction due to increasing human occupational activities and pressure on the natural resource base (Peters, 1994; Ita-Giwa, 2001). The early emphasis for creating Forest Reserve in Nigeria was laid on the protective function of forest. According to Okon (2001), the forest as an ecosystem was expected to protect the soil.

This was why soil conservation was regarded as an important cardinal principle in the enunciation of the early forestry policy statement for Nigeria. But Ekpo (2001) emphasized that; forest reserve is purely for the purpose of maintaining improved water supply, soil stability, and provision of grazing and sanctuaries use. Among the Akwa Ibom People, the forest is regarded as a priceless heritage, intimately bound with the welfare of the people, particularly as a reliable source of numerous products that sustain both rural and industrial economies.

The forest provides vast array of food, drugs, timber, building materials, fuel, fibers, ornaments, spices, and gum. The forest protects the soil, water resources, fauna and flora species that are endemic and in danger of extinction. Studies by Okon (2001), Udoh (2001, 2011), Udofia (2001) and Michael (2006) have indicated that, population pressure and wrong land use practice, have inflicted severe soil degradation and deterioration. Also, soil erosion, gully erosion, flooding and other forms of erosion factors, occur due to misuse of land. It is a known fact that the human survival and sustainable economic development depend fundamentally on proper maintenance of her natural resources particularly the vegetation and forage, water, marine and fishery resources,

***Corresponding author: Essien, Blessing Stephen**
Department of Sociology and Anthropology, University of Uyo,
Nigeria

wild animals and soil. It is however observed that uncontrolled population, pollution, waste disposal, flooding, landslide and deforestation assert great pressure on the survival of the forest (Ekpo, 2001 and FRS, 1999). Equally, uncontrollable human occupational activities within and around the SCFR pose serious threat to the sustainable development of the environment and contribute extensively to climate change.

In the light of the above, the present study therefore seeks to identify the human occupational activities that are carried out within and around the SCFR. The impacts of these activities have on the environment. Specifically, the study seeks to answer the following five questions:

- What type of human occupational activities goes on in the SCFR?
- Why do such activities take place in the SCFR?
- What effects do the occupational activities has on the SCFR?
- What strategies could be adopted to save the SCFR and its environment from these effects?

LITERATURE REVIEW

Akwa Ibom is cited among the severest of population pressure on natural resources in Nigeria (FRS, 1999). With a complete loss of her original vegetation cover, wildlife extinction, yawing ravines, pervasive gully erosion, rill and sheet-wash erosion with concomitant silting of streams, petroleum oil pollution, etc. There has been an increasing focus on the environment and the need to achieve sustainable development in the light of our dwindling natural resources and in line with the UN Conference on Environment and Climate Change of 1972. Generally speaking, the aim of establishing the SCFR was to:

- (a) Preserve and conserve the wildlife habitat, and the different species of animals and plants that are being threatened by extinction, as well as check erosion of the coastal shores due to human economic activities; and
- (b) Act as buffer zone against the ocean waves and storms and its negative effects on the hinterland.

Surveys show that human exploitation of the SCFR and its surrounding ecosystem occur more at flow stations, drilling sites and in road construction. For instance, at *Etebi* (Esit Eket), *Ekpan* (Ibeno) and *Okon* (Mbo) show that at least, three hectares of forest are pulled down at such sites. Given that some oil companies operate an extensive network of producing oil wells and flow stations in the area, the amount of forest lost cannot be imagined. For example, Fxxon/Mobil alone operates a network of 900 oil wells in the area (Udofia, 2001 and Michael, 2006). It has been observed that, vegetation removal assumes far-reaching consequences in the mangrove swamps of Oron, Mbo, Ikot Abasi and Onna. These ecosystems have high primary productivity which has made creeks and estuaries in mangrove swamps nursery grounds for some crustaceans and fin-fish. For instance, the post larva stage of the shrimp (*Penaeu duorab-um*) migrates from the sea into the creeks and remain there until they are about 22 mm before returning to the sea where spawning takes place (Jones,

et al., 1970). Also, the bonga (*Eethmalosa fimbriata*) spawns in the sea where the planktonic eggs hatch and move into the blackish water creeks where they grow from 11-17mm before migrating back to the sea (Moses, 1985). So, the removal of the mangrove therefore, destroys the natural habitat not only for these migratory fish but also the permanent members of the ecosystem such as crabs (*crustacean*), periwinkles (*Gastropod mollusk*), mudskippers (*Periophthalmus*) and Oysters (*Obivalve mollusues*). Without doubt, SCFR destruction affects oysters more than other permanent members because the prop roots of mangroves are their homes. Also, evidence shows that before mounting the drilling rig at the prospective well heads, the ground is made well firm irrespective of the nature of the terrain. At Enwang, Ebugu, Efiat, Ibeno, Ete, for example, the drilling sites were bull dozed, filled with sharp sand and tightly laid with powerful slaps. This was to ensure that the support base was prepared with the utmost care to avoid the rig collapsing, (Imevhore and Odu, 1995). It is observed therefore that the total area of the SCFR is rapidly reducing, while wildlife and plant species are gradually disappearing. This is attributed the human occupational activities going on within the SCFR zone.

Human occupational activities within the SCFR zone

The 318.6km² SCFR in Akwa Ibom State provides tangible and intangible benefits to the Akwa Ibom people (FORMECU, 1999). These tangible products include wood (for fuel, furniture, plywood, paper, housing, bridges, etc), leaves, barks, fruits and seeds (most of which are used as food, dyes and medicines). Others include laterite, water, and wildlife resources. The intangible benefits include soil protection against the impact of the raindrops, the maintenance of a habitat conducive for wildlife, and the protection of water catchments (Ukpong and Ojo-Ede 1999 and Anubode, 1992). Studies confirm that man has the technology and the potentials to tap and use all available natural resources around him, and the forest natural resources is one of such resources. Unfortunately, man's exploration and exploitation of the forest resources for food, shelter, energy, roads, industrial and general infrastructural development over the years has resulted in the gradual and persistent degradation of the forest environment leading ultimately to climate change with its attendant negative consequences. In Akwa Ibom State as in other States of the Federation, land availability is a handicap to forest reservation due to high population pressure and land scarcity hence land owners are unwilling to lose possession of their land.

In other words, it is not easy to stop man from exploring and exploiting the land (forest) and therefore difficult to bring more land under reserves (Isong and Udo, 2000). Man as agents of exploitation and exploration are noticeable in areas or occupations such as wine tapping, wildlife hunting, timber/lumbering (for building of houses, making of furniture) and farming. While the women folk engaged primarily in farming, collecting of wood and other materials used for domestic fuel. They are particularly affected by the degradation of the environment and diminishing resources. Particularly in the rural areas, women are the major users of forest resources both as a source of income and as a means for sustaining the family through provision of fuel, medicine and

food for family and livestock. Widows also sell forest products to earn a living. They concentrate in the collection of snails, mats, and basket making, to keep the family going. Specifically, the following human occupational activities are carried out in the SCFR:

Wine Tapping: People especially men within the SCFR area involve in palm wine tapping. They really exploit the SCFR for the production of palm wine and consequent fermentation and distillation of the fermented wine into local gin. This is a real source of income for the men living within this area. The quantities of wine exported from the SCFR are clear indication of the extent of exploitation that has been going on for years in the reserve. Most of the palm wine and local gin sold in Oron, Eket, Ikot Abasi, Uyo, and the neighbouring states like Cross River, Bayelsa, Imo, Abia, etc, come from the SCFR of Akwa Ibom State. Other important products exploited from the SCFR include raffia palm, roofing mats, tie-tie, raffia (for raffia bags, shoes, beads. etc). These products are highly demanded both at the local and international markets.

Timber (Lumbering): Lumbering is another occupational activity carried out in the SCFR. Most of the timber products found in Eket, Ikot Abasi, Onna, Uyo, Etinan, and the adjoining local markets are exploited from the SCFR area. This business has greatly endangered some plant species that are in great demand. The processes of cutting down these trees with powered chain-saw equally endanger most wildlife species. While some are forced to change their habitat, others are driven away, even to other countries by the noise of powered chain-saw. The high demand for building materials makes these timber products a big business hence, the continuous exploitation of the SCFR ecosystem (Aweto, 1995; Myers, 1985; and Ukpong and Ojo-Ede, 1999).

Wildlife Hunting: Forests provide a home or habitat for many kinds of wildlife, game, animals, birds, and many forms of Deer, Elk, Moose, Squirrel, lurikey, Grouse, Wood duck, Wood cock, and Raccoon. There are also many songbirds and other small mammals, which are essential to a well-balanced forest ecosystem (Okoji, 2000 and Kaladamo, 1996). Many threatened and endangered species of wildlife (Bald eagle, Osprey, Red Cockaded, Woodpecker, etc), as well as others that are rare and uncommon (Moose, Pine Marten, Fisher, Lynx, Wild Turkey, Pleated Wood Pecker, and many more), require large acreage of forest land with big trees to survive. Eagles and Ospreys for instance, need tall trees near water, free from disturbance. Woodpeckers require decadent trees for food and nesting cavities. Many others simply must have one or more special kind of ecological "niches" found mainly in natural as opposed to managed or reclaimed forests. The hunting activities carried out in the area have greatly depleted the SCFR and has highly endangered most wildlife species within the ecosystem.

Farming: Farming take its toll as the SCFR is completely destroyed through farming activities. It has been observed that, residents of the SCFR areas are predominantly rural people who depend on land for agriculture. Also, studies confirm that the bulk of food and fibre consumed in the country (more than 80 percent), come from the rural small-scale farmers, who depend wholly on land for cultivation (Udoh, 2001 and Anab,

2001). In the course of cultivation, the residents cut and destroy the forest with all its important products (plants and animal species) under "slash and burn". They also practiced "shifting cultivation" where they have to leave a particular plot of land after cultivation to another piece of land during another planting season. By so doing, the rural cultivators continue to destroy what was left over during the previous years, and therefore endangered plant and animal species through cutting down and burning of trees and other forest products by fire. In the process, food trees and vital condiments such as those derived from African Star Apple (*Chrysophyllum albidum*), Bush Mango (*living gaboneis*), African pear (*Dacryodes edulis*) and Aidan tree (*Tetra plura etcetera*) have gradually disappeared. Others are seeds such as bitter kola (*aidnt Kola*), African Oil Bean (*Pentaclethra inacrophylla*), African nutmeg (*Mondora mysristica*), and Edible leaves such as African Salad (*Gnetum Africana*), Atama "Ibibio" (*Heinsia crinata*), Utasi "Ibibio" (*Gong roneina latifolia*). Affected in the process also are edible mushrooms, which constitute a very good source of cheap protein, minerals, and vitamins (Quino and Chang, 1987 and Allan and Padem, 1990).

Human Settlement, Industrial and Road Construction: A large percentage of the SCFR area has come under serious threat as a result of increasing human settlement, industrial occupation and road construction. For instance, between 1970 and 1997, Exxon/Mobil Oil Company took up a total of over 400 hectares of the SCFR for Qua Iboe Terminal (Q.I.T) Expansion Project. Recently also, the Akwa Ibom State Government has acquired a large portion of the SCFR at Ibaka, Mbo Local Government Area for her Seaport Project. The International Airport at Okobo also consumes a greater portion of the SCFR in the area. Also, road construction across SCFR areas has given serious challenge to the SCFR because the natural habitat, plants and animal have been destroyed due to activities of road construction companies. For instance, the proposed federal Railway from Lagos to Calabar is going to consume a greater percentage of the SCFR of the region (Ekong, 2003; World Bank, 2005).

Oil Exploration/Exploitation: In fact, the greatest threat to Akwa Ibom SCFR and its environment is the presence of petroleum oil in the SCFR. Exxon/ Mobil and its subsidiaries have been carrying out oil drilling activities in the area for about three decades now. The ecological impact of continuous demarcation and de-reservation of the Reserve for petroleum exploration, drilling and refining, as well as other activities on the sustainability of the fauna- flora of the Reserve better be imagined. Findings from the present study show that during crude oil exploitation and exploration, the followings take place:

- (i) The oil water surface limits oxygen exchange, kills surface organisms, contaminates water, and contributes to the water-soluble material which may be toxic to aquatic organisms, plants and animals;
- (ii) Petroleum products rank high among the materials, which taint the flesh of aquatic organisms. Tainting of fish renders the fish inedible;
- (iii) Oil depresses the normal functions of fish oysters and retards their growth and multiplication;

- (iv) Oil is found to be toxic to a variety of phytoplankton and zooplanktons. Where oil spillage affects our surface water, it renders the water useless and servile, and aquatic animals are destroyed for lack of oxygen. The predominant Occupation of the riverine SCFR is fishing and with marine life destroyed, so is their means of livelihood resulting in economic hardship.

Generally, water contaminated with oil is toxic to human and livestock and particularly fishes which are tainted with oil, rendering them unfit for human consumption (Charles and Dayo; 2008 and Nwankwo and Dozie, 1981).

Effects of Human Occupational Activities within the SCFR on the Environment

Loss of genetic base: The term “genetic resources” is often used to denote those inheritable characteristics of plants and animals that are of actual or potential use to people. The characteristics may be disease resistance, a pharmacological activity of an organism to adaptation, or the capacity of an organism to grow tall and have cultural and economic values which can transmit genetically, its qualities as a genetic resource. Often the wild relatives of domesticated plants and animals are valuable for the improvement of crops and livestock. Also, thousands of wild species are rich store of genetic diversity, which in turn provides the raw material for the selection of new crops or domesticated animals and are better forms of those that exist already. The exploitation of the SCFR has greatly depleted the genetic base of wildlife. It is widely known that, wildlife makes an important contribution by providing genetic resources and ecological support to the ecosystem. Crops have been improved with genes from wild plants, and the prospects are, the plants breeders will continue to rely increasingly on the wild genetic resources for disease resistance and valuable qualities. Also, the development of new domesticated animals and plants and the improvement in the existing methods of domestication through the transfer of desirable qualities from their wild relatives are among those uses of wildlife that have suffered due to excessive exploitation of the SCFR.

Biodiversity loss: Closely related to the problem of loss of genetic base is the problem of biodiversity loss. The exploitation of this ecosystem is a threat to bio-diversity and its sustainability. For instance, oil exploration by Exxon/Mobil Oil Company and its off shores drilling terminals scattering all over the SCFR areas has seriously affected the bio-diversity of the wildlife in the area. It is on record that, Exxon Mobil has been carrying out oil drilling business in the area for decades now. According to findings, 0.10sq.km was allocated to the company’s Qua Iboe Terminal (Q.I.C) project in 1970 and 0.20sq.km in 1997. The area so allocated included a large proportion of the SCFR (Moses, 1985 and Anab, 1997). The ecological impact of further demarcation and de-reservation of the forest reserve for petroleum exploration, drilling, refining, road construction, and other activities on the sustainability of the reserve soil, fauna and flora can no longer be guaranteed. For instance, sand tilling of the swamps and creeks for construction of roads and residential quarters lead to loss of aquatic lives through the disappearance of their spawning grounds.

Deforestation: Deforestation is the removal of forest from a piece of land without replacement. It also implies degeneration of the environment (King and Udoh., 1985 and Anab, 2001). It is a well known fact that trees play an essential role in human life, specifically for the provision of food, shade, shelter, fuel, medicine, income and protection of people. This means that millions of people depend on forest products for survival. Scientific studies show that vegetation is a good source of soil’s organic matter (Okoji, 2000: and Udoh, 2011). It enriches the soil and regulates the amount of soil’s moisture content. However, whenever vegetation is removed, there is likely to be some adverse environmental consequences. The danger from the above however, lies in an uncontrolled deforestation, which involves the destruction of the natural ecosystem through cutting down of trees for industrial and economic purposes as well as burning off the forest for agricultural activities. Deforestation therefore alters the stability of the natural ecosystem with its attendant effects on the microclimate, soil-atmosphere interaction, as well as alteration in soil environment dynamics (Ukpong and Ojo-Ede, 1999, Anab, 2000).

Studies also confirmed that, forest help to control the climate by influencing the wind, temperature, humidity and rainfall (Peters, 1994; Okon, 2001 and Michael, 2006). It assists in the global recycling of water, oxygen, carbon and nitrogen. Forest absorbs and gradually releases water and thereby reduces the rate of erosion and flooding and allows more water to seep into underground pools and springs. Also, forest provides wildlife habitat and ranch lands for livestock. It helps to absorb polluted air and some pollutants, it also acts as noise break, providing solitude and beauty to human habitats, so cutting down of trees for timber or any purpose for that matter, has contributed to deforestation. However, according to Peters, (1994); Okon, (2001) and Michael, (2006), the two most important factors for deforestation have been land clearing for agriculture and wood gathering for domestic and commercial fuels.

Siltation of Streams: This is the process whereby the sediments deposited by rainwater or human beings fill up streams and creeks within the SCFR area. Human activities of agriculture, lumbering, industrial location and occupation, expose lands that were reserved to wind and erosion, resulting in silts from the farmlands or bare to fill up the stream creek channels. After a while, the entire farmlands with all its debris will be dumped into the streambeds, closing and blocking all channels, and waterways and therefore impede the flow of water. These often lead to contamination of the source of drinking water resulting in the outbreak of water-borne diseases (Charles and Dayo, 2008).

Loss of wildlife species: The SCFR often serves as a natural ecosystem for many wildlife species. For instance, animal species such as the Sclater’s guenon (*cercopithecus sclateri*), which is endemic to Nigeria, the Red cup mangabey (*Crcocehus torquatus*), the spotty nosed monkey (*Cercopithcus mictatan*), mona monkey (*Lercopithecus mona*), Bush pigs (*Potamochoercus porcus*) and Elephants (*Loxodanta Africana*), have almost disappeared from the area. Also, it has been observed that, the reserve which was once rich in plant species and trees that provided watersheds to the

coast, and buffer against harmful environmental perturbations such as flood and drought is now under the threat of extinction. The recycling, decreasing availability of nutrients with valuable ecological and genetically importance to man has systematically been destroyed.

MATERIALS AND METHODS

Research Design

The study adopted descriptive survey research design. Descriptive survey research design affords the researchers the opportunity to collect facts on human occupational activities that have occurred in the SCFR and analyze them without manipulating either the independent or the dependent variables. This study therefore adopts a purely qualitative approach in its data gathering and analyses.

Population/ Sample and Sampling Technique

The population consisted of 685 inhabitants of the SCFR areas of Esit Eket, Mbo and Ibeno who engaged in various occupational activities identified during the Pilot Assessment Surveys (PAS). Purposive sampling technique was used in selecting 20 respondents each from the 12 surveyed settlements. Two hundred and forty (240) respondents therefore formed the study's sample size.

Method of Data Collection/ Analysis

The methods of data collection for this study were by direct personal observation of human activities in the SCFR area through Pilot Assessment Survey (PAS) and structured interview schedule. First-hand information was obtained through observation of the physical and geographical features of the SCFR. While those who do farming, fishing, lumbering, logging, construction and industrial work at the SCFR areas were interviewed. Questions asked captured information on the type of occupational activities around the SCFR, Why such activities take place in the area? What are the effects of their activities on the SCFR? And what measures could be used to reduce future exploitation of the SCFR? Data were analyzed using simple percentages and frequency counts.

Table 1: Population and sample design

SCFR Areas	Settlements/villages	Pop. Surveyed	Sample
1. Esit eket	1. Ntak Inyang	84	20
	2. Edo	20	20
	3. Odoro Ntok	60	20
2. Mbo	4. Ibaka	30	20
	5. Unyenge	41	20
	6. Enwang	76	20
	7. Abutong	18	20
	8. Ntete	24	20
	9. James town	62	20
3. Ibeno	10. Uquo	90	20
	11. Ibeno	98	20
	12. Mkpanak	82	20
4.	Total	685	240

Source: Field survey, 2015.

Data in Table 2 shows the demographic characteristics of the respondents. According to the Table, more than half of the respondents (153) 63.8 percent were males while female

constituted (87) 36.2 percent. Majority (23.3%) of the respondents were those of 41-45 age cohorts. The least age brackets among the respondents were those of 21-25 years old. The greatest number of the respondents (25.8%) was those who engaged in farming. While 32 (13%), 56 (23.3%), 54 (22.5%) and 36 (15%) of the respondents engaged in lumbering, fishing, logging and construction work respectively. Among the respondents 92 (38.3%) of them have worked in the SCFR for about 1-5 years, 71 of them (29.6%) have worked for up to 6-10 years and 54 (22.5%) respondents have worked up to 11-15 years while 23 of them (9.6%) have worked for about 20 years in the SCFR Area.

Table 2: Demographic Characteristics of the respondents

Demographic variables	No. of Respondents	Percentage (%)
Sex:		
Male	153	63.8
Female	87	36.2
Total	240	100
Age:		
21-25	10	4.2
26-30	22	9.2
31-35	51	21.3
36-40	50	20.8
41-45	56	23.3
46-50	32	13.3
Above 50	19	7.9
Total	240	100
Occupation:		
Farming	62	25.8
Lumbering	32	13.3
Fishing	56	23.3
Logging	54	22.5
Construction work	36	15.1
Total	240	100
Years worked in the SCRF:		
1-5yrs	92	38.3
6-10yrs	71	29.6
11-15yrs	54	22.5
16-20yrs	23	9.6
Total	240	100

Analysis of responses from structured interview schedule:

Research question I: Why do you carry out your occupational activities in the SCFR area?

Some of the responses range from:

My dear, the only occupation of our people is farming. This forest is the only means of our livelihood. Our forest is fertile for food crop production and the only source of our income (farmers).

This forest provides materials for house building, boat building and domestic fuel. Our existence is tied to it (lumbers).

We are traditional medicine men and we tap a lot of my herbal materials from here. This forest area is rich in medicinal plants, shrubs, barks and roots (traditional medicine practitioners).

We hunt for animals like rabbit, antelope, porcupine and other wild animals in this forest. We are professional hunters and the forest is our industry (hunters).

Why we explore the forest is because of our occupation. As craftsmen, raw materials such as raffia and tie -tie are found here in abundance and so the forest is our source of raw materials for our work (local craftsmen).

We are oil drilling workers; the forest area is rich with enormous oil resources due to its vegetation. We search for onshore oil through exploration and other seismographic activities (oil company workers).

Research question II: What effects do think your job has on the SCFR area?

Many of the responses range from:

Well, we noticed that setting the forest on fire during crop cultivation burns the necessary ingredients for plant growth; and decreases our crop yields (farmers).

Oh, cutting down so many trees exposes the forest to excessive sunlight, and drives away wild animals (lumbers).

Yes, excessive cutting of plants roots and barks do lead to the death of such plants (traditional medicine practitioners).

The effect of too much game in the forest has resulted in the extinction of so many wild animals (hunters).

One most noticeable impact of our activities as oil companies as always has been soil degradation and pollution of drinking water (oil company Workers).

Research question III: What measures do you think could be adopted to reduce the exploitation of the SCFR?

Rotational agriculture should be practiced where some parts of the forest area are not cultivated, kept fallow for certain period say 5-10 years (farmers).

Indiscriminate felling of trees by unauthorized persons should be regulated. Forest Guards should be reintroduced. Sawyers and loggers should be licenced before they are allowed to operate. To plant more trees is important (Lumbers).

To safeguard wild animals, as hunters we believe that hunters should be given licence before we operate because ordinary people who are not hunters have also infiltrated the forest as well and have killed wild animals (hunters).

As oil drilling company workers, carrying out environmental impact assessment of seismographic activities within the SCFR area is needful to mitigate the remote consequences of the oil exploration on the environment (oil company workers).

RESULTS AND DISCUSSION

Findings of this study reveal that farming, lumbering, logging, fishing, construction work and oil exploration are the major human occupational activities that has taken in the SCFR area of Mbo, Esit Eket, and Ibenu . These is so, because of the rich and fertile land for agriculture, the availability of raw materials for building and domestic fuel, medicinal plants,

game for meat and enormous oil deposit. This finding confirm earlier study (Udoh, 2001) that the bulk of food and fibre consumed in the country (more than 80 percent), come from the rural small-scale farmers, who depend wholly on land for cultivation. Also, findings by Aweto, (1995); Mayers, (1990); Ukpong, (1999); and Udoh, (2011) that the high demand for building materials makes timber products a big business hence, the continuous exploitation of the SCFR ecosystem. Findings from this study show that, about 13.6 percent of the occupational activities going on within the SCFR lead to deforestation, particularly farming, logging and lumbering.

This finding support previous study Peter, (1994); Okon, (2001) and Michael, (2006), who found that the two most important factors for deforestation in the SCFR have been land clearing for agriculture and wood gathering for domestic and commercial fuels. Moreover hunting of wild life has also been found to lead to the extinction of some wild species of animals. Finding of this study also shows that, reptiles such as Monitor lizards, Alligators, Crocodiles, Tortoises and Turtles, are almost at risk of extinction due to intensive poaching, hunting and destruction of their habitat. Findings from other studies particularly Anab (1997), King (1997);King and Udo (1997) and Michael (2006), have shown that the loss of biodiversity in the SCFR area has contributed to the disappearance of economically viable plant and animal species as Iroko (Tripochiton Scieroxion), Colobus Monkeys, Chimpanzees, Gorillas and Elephants, while the Cheetah and Pigmy Hippopotamus has extinct as a result of undue disturbances of their habitats through human activities.

Conclusion

Although socio-economic reasons account for human occupational activities in the SCFR of Akwa Ibom, this study discovers that, the long run effect of such activities outweighs whatever benefits the people may have claimed to achieve. There has been a noticeable destruction of the natural ecosystem leading to biodiversity loss, loss of genetic base in plants and animals, siltation and loss of wildlife. Others include reduction of surface/ground water quality, reduction in the life-span of aquatic organisms as well as increased toxicity of fish and other aquatic organisms. Moreover, air pollution, eco-system destabilization, and migration of birds and animals become rampant. Inhalation of polluted air and acid rain has caused respiratory and health problem such as cancer, while dilapidated shelter and soil degradation are now very common. Socio- economically, it has been observed that, despite inhabitants' occupation of the SCFR area, poverty, hunger, and malnutrition is very common among them.

Recommendations

Consequent upon the startling discoveries from this study, the following policy measures are recommended as remedy towards the exploitation of the SCFR.

1. A concrete and comprehensive SCFR management policy and strategy be evolved and implemented. Findings show that, the SCFR in Akwa Ibom State, like other forest reserves in the country suffers from mismanagement. This means that fundamentally, something is wrong with the policies that have been put in place to preserve and protect

the Reserve. To reduce the incidence of mismanagement, there should be a clearly spelt out goals. Scope, as well as anticipated challenges that the SCFR is likely to face. The issue of conservation should be taken very seriously in which case, animals and plants will be preserved. Conservation should involve creation of a permanent forest estate where no farming or economic activity be allowed with collaboration management between government, non-governmental organizations and the local people. There should also be constant appraisals and evaluation of the activities that go on within the SCFR. There should be a mechanism to facilitate effective feedback. This will help determine the level of success or otherwise of the SCFR management objectives. A responsive programme of action, channels of delivery and mechanisms of identifying actual and potential constraints that will guide in the monitoring and protection of the SCFR should be evolved.

2. As a matter of policy, carrying out any form of business at the SCFR area, either by government, private agencies, companies or indigenes of the area should be stopped. Legislation should be re-enacted to prohibit offenders and those who violate the order should be prosecuted and appropriate punishment meted.
3. Proper sensitization, orientation, and education of the people on the needs to preserve the lives of animals and plants in the SCFR should be intensified. Such orientation will expose these exploiters to the dangers of deforestation on the lives of the people.
4. Since, oil companies are the major source of hydrocarbon pollution in the area, these industries, particularly Exxon/Mobil should be encouraged to adhere strictly to internationally acceptable standard oil field practices, so as to minimize spillages and flaring and their adverse effects. The relevant legislation should be enforced, with attendant penalties on defaulting operators. Their contingency plans should be regularly monitored. Service companies should also be encouraged to do same. The petroleum inspectorate department in the Ministry of Environment should enforce the implementation of effluent limitation guidelines.

REFERENCES

- Aweto, A. O. 1995. Organic Carbon diminution and estimates of carbon dioxide release from plantation soil. *Environmentalist*. 15 (4) 23-25.
- Allen, R. and H. Padem, 1990. A study of nutritional value of field mushroom (*Agricus compestrus*). *Nutritional Abstract and Reviews* 06005512.
- Anubode. I. O. 1992. The Stubbs Greek Forest Reserve, Akwa Ibom State. *Final Report on Biological and Socio-Economic Survey, Nigerian Conservation Foundation*.
- Anab. V. I. 1997. Problems of Sustainability of Primary Forests in Akwa Ibom State. *A Ph.D Seminar Paper (Unpublished)* Faculty of Environmental Sciences, Enugu State University of Science and Technology - Enugu.
- Anab, V. I. 2000. Management Strategy for the sustainability of the Stubbs Greek Forest Reserve in Akwa Ibom State. *A Ph.D Thesis (unpublished)*, submitted to the Faculty of Environmental Sciences, Enugu State University of Science and Technology, Enugu.
- Anab, V. I. 2001. Forestry, Forest Development and Environment in Forestry and Sustainable Environment. *Proceedings of the 1st Workshop of the Forestry Association of Nigeria, Akwa Ibom State Branch*.
- Charles, O. and A. Dayo, 2008. Oil has been a blessing and a curse. *Tell magazine*, February 18.
- Ekong. E. E. 2003. An Introduction to rural sociology. Uyo: Dove Educational Publishers.
- Ekpo. J. I. 2001. Forest Policy Direction in Akwa Ibom State, In Forestry and Sustainable Environment, *Proceedings of the 1st Workshop of the Forestry Association of Nigeria, Akwa Ibom State*.
- FORMECU, 1999. Forest resources study in Nigeria, Akwa Ibom State. *Revised Management Plan*. Fed. Dept. of Forestry, Geomatics International and Geomatics, Nigeria.
- Forest Resources Study (FRS), 1999. Report Vol.1, 1999 *FORMECU*.
- Imevhore, A. M. A. and F. A. Odu, 1985. Environmental pollution in the Niger Delta in B.H.R. Wilcox and C. B. Powells (eds). The mangrove ecosystem of the Niger-Delta. Port Harcourt: Port Harcourt University Press.
- Isong, B. and F. S. Udo, 2000. Forestry and development in Inyang, I. B. (ed.) South-Eastern Nigeria: It's environment. Kaduna: Abam Publishing Co.
- Ita-Giwa, F. 2001. Oil industry environmental pollution: managing women, children and environmental issues. *A paper presented at the World Conference of Majors Eket, Akwa Ibom State*. pp 132-156.
- Jones, A. C., D. P. Dimitrion, J. J. Ewald and J. H. Tweedy, 1970. Distribution of early development stages of pink shrimp, *Penaeus duorarum*, in Florida water. *Marine Science* 20(3) 634 661.
- Kaladomo, C. O. K. 1996. The implications of gas flaring in the Niger Delta Environment. *A paper presented at the 8th Biennial International Seminar on the Petroleum Industry and the Nigerian Environment*.
- King, E. J. 1997. Beneficial forest resources in Akwa Ibom State and Proposals for sustaining them through private forestry. In Fabiyi. Y. L and M. G. Nyienakuna (eds) *Issues In Sustainable Agricultural Development*. Vol. 1, Department of Agric. Econ and Ext. University of Uyo. Nigeria.
- Michael, U. O. 2006. The socio-economic impact of exploitation of the Stubbs Creek Forest Reserve in Akwa Ibom State. *An unpublished M.Sc.Thesis, Dept. oceanography and Regional Planning, University of Uyo, Nigeria*.
- Myers, N. 1990. Tropical Forests. In J. Leggett (ed) *Global warming*, pp 372-99. Oxford: Oxford University Press.
- Moses, B. S. 1985. Mangrove swamp as potential food source, In: (B.H.R. Wilcox and C. B. Powell, (eds) The mangrove ecosystem of the Niger Delta. Port Harcourt: 170-184.
- King, E. J. and E. S. Udo, 1997. Beneficial forest resources in Akwa Ibom State and Proposals for sustaining them through Private Forestry". In: Fabiyi, Y. L. and M. C. Nyienakuna (eds). *Issues In Sustainable Agricultural Development*, vol. 1, August. Department of Agric. Econ and Ext. University of Uyo. Nigeria.
- Nigerian Conservative Foundation (NCF), 1991. "Why we need conservation in Nigeria's threatened environment: A National Profile — *NEST*.

- Nwankwo, 1998. Problem of environmental pollution and control in the Nigerian petroleum industry. NNPC/PTI, Efurun, Warri, Delta State.
- Okoji, N. A. 2000. Petroleum Oil and the Niger Delta Environment. *International Journal of Environmental Studies*, 57 (4) 713 - 723.
- Okon, U. U. 2001. Keynote address. *Proceedings of the 1st workshop on the Forestry Association*. Nigeria: Akwa Ibom State.
- Peters, S. W. 1994. Environmental Problems in Akwa Ibom State: Land of Promise. Lagos: Gahumo Publishing Co.
- Nwankwo, O. and T. Dozie, 1981. Problem of Environmental Pollution and Control in the Nigerian Petroleum Industry. NNPC/PTI, Efurun, Warri, Delta State.
- Quino, T. H. and S. T. Chang, 1987. Technical guides to mushroom growing in the Tropics. *FAQ Plant Production and Protection Paper* No. 106.
- Udoh, I. S. 2001. The position of forestry in Akwa Ibom State. *Forestry and Sustainable Environment*.3 (4) 26.
- Udofia, S I. 2001. Importance of local knowledge. *Forestry Resources Conservation in Forestry and Sustainable Development in Akwa Ibom State*.3(5)12.
- Udoh, O. S. 2001. "Determinants of Productivity in Rural Nigeria: A Case Study of Three Farming Settlements in Ikpe Community, In *Ibom Journal of Social Issues*, vol. 6. No. 1.
- Udoh, O. S. 2008. Attitude of Ikpe farmers towards agricultural development in Akwa Ibom State. *International Journal of African Culture, Politics and Development*. 3. (1).
- Udoh, O. S. 2011(a). Inter-tribal communication and trade and adoption of rice crop in Ikpe community of Akwa Ibom State: Agenda for sustainable food production in Nigeria. *Journal of Agricultural Research and Policies*, 6,(2).
- Ukpong, I. and H. Ojo-Ede, 1999. Hydrocarbon pollution of soils and water in Niger-Delta States: A synopsis. *Journal of Nigerian Society for Biological Conservation*. 4 (2) 37-40.
- World Bank, 2005. Agricultural Growth for the Poor. An Agenda for Development. Washington D. C. *The World Bank*.
