
SOCIO-ECONOMIC EFFECTS OF EROSION IN ANAMBRA STATE (A CASE STUDY OF ORUMBA NORTH LOCAL GOVERNMENT AREA)

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ABSTRACT

Soil erosion in Anambra State had many causes. They are high rainfall, lack of good drainage system, deforestation, topography, types of soils, road building, continuous cropping, bush burning and excavation. Questionnaires were used to elicit information from 50 randomly selected respondents from two communities under study. 30% of the respondents identified high rainfall as the major causes of erosion by lack of good drainage system with 25% of the respondents. The study recommended good drainage systems for constructed roads, massive enlightenment and educational measures for the farmers.

INTRODUCTION

Soil erosion is about the most severe land degradation problem experienced in the southeastern Nigeria. The Anambra State is blessed with bountiful natural resources especially soil, but unfortunately it is bedeviled with an ecological hazard in form of gully erosion. These gully erosion is fast ravaging most of the Local Government areas in the state. In the study location which is Orumba North Local Government Area, soil erosion is one of multifaceted natural hazard, which lead to erosion environmental problem. Ofomata (1985), Lal (1990) and Ubozurike (1983) defined soil erosion as the wearing away of the land by rainfall, wind, ice or other agents including such processes as gravitational creep. From all the state in the southeastern region in zone, Anambra State has been identified to be worst hit, having about one thousand active erosion sites in its domain (Onwuka, 2005). The effects of soil erosion can be seen both on-site and off-site. On-site effects are the loss of soil, the breakdown of the soil structure, decline in organic matter and reduction in available soil moisture. Off-site effect includes sedimentation of down stream, drainage ditches, blocks irrigation canals and shortened lifespan of reservoirs.

OBJECTIVES OF THE STUDY

The aim of this study is to show the socio-economic effects of erosion in the study area. In order to meet the aim, the following objectives were considered

- i. Identify the socio-economic characteristics of the farmers in the area
- ii. Determine the possible causes of erosion
- iii. Discover the impact of erosion on the populace

SIGNIFICANCE OF THE STUDY

There is need to have the environment close to its natural state and the importance of making greater percentage of the land mass erosion free. The need for this study will not be overemphasized.

The results of these studies will find application in the following ways;

- a) The research would add to the already existing knowledge about erosion and its allies
- b) This research would identify the land use practice in the area that is capable to aid erosions.
- c) The research will help to discover the impact of erosion on the affected populace.

LITERATURE REVIEW

Meaning of Erosion

Erosion can be defined as the loosening and consequent removal of particulate soil materials from one location to another by wind, water and man (Onwuka, 2005). Erosion is a gravity driven process that moves solid (sediment, soil, rock and other particles) in the natural environment or their source and deposits them elsewhere. It usually occurs due to transport by wind, water or ice, by down slope creep of soil and other material under the force of gravity, or by living organisms such as burrowing animal in the case of bio-erosion.

Factors Governing Erosion Intensity

Many factors are governing the intensity of the erosion. They are climate factor, soil feature factor, geological factor, biological factor, anthropogenic factors like road construction, urbanization and industrialization, over-grazing and agricultural activities and bush burning.

RESEARCH METHODOLOGY

The Study Area

The study location is part of Orumba North Local Government Area (Oko and Nanka, of Anambra State, Nigeria). The study location experiences rainy seasoned from March to November and dry season for the rest of the year with August break coming sometime in the middle of August. The temperature is always high with a mean maximum of 32⁰⁺C in February and mean minimum of 25⁰C in August. The soil type of the location is clay loam, while the soil types of upland northern parts of the local government where erosion is severe have loose sandy soil derived from false bedded sandstone.

STUDY METHOD

Questionnaires were used to elicit information from 50 randomly selected respondents from two communities under study. The questions bothered on the different aspects of the gully erosion menace in the study area such as the trend, regularity, causes, impact and management strategies utilised by the populace. Published work from relevant sources was used. The analysis of the data collected was with simple statistics to estimate the impact of erosion on the study area.

Data Analysis and Discussion

The results of analysis of data collected will be presented and discussed under socio-economic characteristics of the respondents, causes of erosion and socio-economic impact of erosion in the study area.

Socio-Economic Characteristics

Table 1 shows the gender of the respondents with 60% being male while 40% being female. The profession of the respondents are farmers 40%, teachers 20%, students 44%, retirees 10% and market women 20%. Their age are as follows, 30 – 40 years make up 20%, 41 – 50 make up 26%, 51 – 60 make up 44% while 61 – 70 make up 10%.

Causes of Erosion in the Study Area

Table 2 shows the causes of erosion in the study area according to the respondents. The respondents identified high rainfall and lack of good drainage as major causes of erosion with 30% and 20% respectively. There is a loss of productivity of the affected area. Table 3 indicated the expected money which got lost by erosion and flooding. The amount for Oko community ₦52 847 per location when multiply by 130 hectares farm plots of the study hectare it will give a colossal amount of ₦6,870, 110. Other impacts of erosion in the study location according to respondents are shown in table 4 in the increasing, decreasing and unchange situation. Loss of farm, loss of houses, loss of forest, displacement of population, establishment of bad land and loss of fertility are in the increasing proportion for the last ten years. Loss of human lives is in decreasing range since last ten years

CONCLUSIONS AND RECOMMENDATIONS

Anambra State is experiencing severe sheet and gully erosion. This is partly from large volume of rainfall generated by the high intensity storms. Construction of road is also a factor that constitute to the erosion threats in the state. Others are lack of good drainage system, deforestation, topography, types of soil, continuous cropping, bush burning and excavation.

RECOMMENDATIONS

1. The construction of road in the states must be accompanied with adequate drainage system. This will prevent direction of water in agricultural land.
2. Engineering/construction works to arrest gully and rechannel flood water into a system of artificial lakes that would serve the water needs of the area.
3. Sociological/public enlightenment measures: massive public enlightenment and educational programmes on anti-erosion measures shall be mounted. This shall eliminate the anthropogenic human impacts that generate erosion.

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Table 1: Distribution of social characteristics of the respondents

Parameter	Frequency	Percentage
Gender:		
Male	30	60
Female	20	40
Age:		
30 – 40	10	20
41 – 50	13	26
51 – 60	22	44
Professions:		
Farmers	20	40
Teachers	10	20
Students	10	44
Retirees	5	10
Market women	10	20

Source: Field survey, 2011.

Causes of gully erosion	Percentage
High rainfall	30
Lack of good drainage system	25
Deforestation	10
Topography	9
Types of soil	9
Road building	7
Bush burning	3
Excavation	2

Socio-Economic Impact of Erosion in the Study Location

Table 3: Total expenses/ha of a sample of yam farmers in study location.

Activities	location / amount in Naira	
	yam 1998	
Location	Oko	Amoka, Nanka
Land clearing	4,634	5282
Ploughing	16,300	15,879
Weeding	6,521	5,013
Seedlings	12,958	11,268
Intercrops	3,112	3,023
Staking	2,718	2,662
Contingencies	1800	1600
Expected profit 10%	4804	4,422
Total	52847	48,649

Table 4: Respondents to the trend of occurrence of impacts of erosion in the last ten years by the respondents in the study area (%)

Impact of erosion	Increasing	Decreasing	The same
Loss of human live	20	60	20
Loss of Form	70	25	5
Loss of Houses	50	25	25
Loss of Livestock	35	45	20
Loss of Forests	55	35	10
Loss of Pasture	45	40	15
Displacement of population	56	27	17
Establishment of Bad Lands	59	30	11
Loss of Fertility	65	18	17