
DEMOGRAPHIC FACTORS AS CAUSES OF SOIL EROSION IN ANAMBRA STATE

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ABSTRACT

The increase in population of the world especially in the developing countries put pressure on the use of land. These means more crop will be produced to feed the growing population. Apart from these, more economic activities will be taking place leading to soil degradation. The demographic factors that causes erosion are the population growth, population density and migration of people from and into an area. The survey shows that the effects of erosion like destruction of trees, displacement of population and loss of fertility are increasing while loss of human lives are decreasing.

INTRODUCTION

Soil erosion is one of the environmental problems that affect the whole world but generally, it is more prominent in the tropical countries. From the available statistics (see table 1), the land affected by accelerated soil erosion is estimated at about 1600.10^6 ha. In different continents, the relative affected areas are in order of Asia, > Europe, > North and Central America of Oceanic and pacific. Also it is to be noted in the table 1 that wind erosion affects about 550.10^6 ha and water erosion about 1088.10^6 ha. The term soil erosion generally means the destruction of soil by the action of water and wind (Zacher, 1982). Encyclopedia Britannica (1990) defined erosion as the removal of surface materials from the earths crust, primarily soil and rock debris, and the transportation of the eroded materials by natural agencies from the point of removal. Erosion rates are major factors of interest in order to combat the problems posed by gullies. Where the rates are fast or rapid the effects are obvious to the people and hence are given quicker attention.

Erosion rate are classified into three by Zacher (1982);

Serious - 40 – 180 years

to lose the top soil

Severe – 10 – 40 years

to lose the top soil

Catastrophic – lose of top

soil in one or few storms

OBJECTIVES OF THE STUDY

The broad objective of the study is to determine the demographic causes of soil erosion in Anambra State. The specific objectives are

- i) Socio-economic characteristics of the farmers in the state.
- ii) Determination of demographic causes of erosion on agricultural soil
- iii) Recommend policy measures.

LITERATURE REVIEW

Demographic Factors as Causes of Erosion

It is generally clear that the more the population of an area increases, the more the need and use of land in the area increases, especially if some of the food needs of the population are not imported. Generally, the population of the world is in constant increase. This means the steady increase in use of land. This means more pressure on the land through increase in productivity. If these increases in productivity does not go hand in hand with enough conservation measures, it will lead to increase in erosion problem.

Population Growth and Population Density

As a result of the improved living conditions and standards, better health facilities, more foods, etc, there have been large increases in human population in the last fifty years. Child mortality rate has been reduced. Age longevity of adults has increase. Table 2 shows the population of some developed countries and developing countries like Nigeria. Annual rate of increase is greater in developing countries and typified stress on land which reacts with erosion. There are more people living and indulging in varied activities (farming, industrial concerns, infrastructural developments etc) that put stresses on the environment. These may trigger off soil erosion. Forest (deforestation) and bushes (devegetation) are cleared for human habitation, agricultural practices, industrial establishments, road construction, rural development, etc. Intense farming activities sometimes using wrong methods, loosed the soil for mass wasting. These are in attempt to produce more food to feed more hungry mouths. Increased economical activities result in the building of more markets or trade centers, more roads to carry heavier traffic, more houses to accommodate the entire population. Demands impose by increased population and their attendant stresses must be considered as major factors of erosion causation in most parts of the world.

Migration

Human migration according to Britannica (2005) in the permanent change of resident by an individual or group; it excludes such movements as nomedism, migrant labour, community and tourism, all of which are transitory in nature. The movement of people within a country is immigration. Immigration has great influence on erosion. In developing countries, people tend to migrate to the urban centers because they cannot live in the rural areas where there is fewer jobs and difficult earning possibility. This had adverse effects on the rural areas and also on the urban areas. The congestion of people on small area causes the natural stuff to be scarce and also put tremendous pressure on land. This uncontrolled pressure increases pressure on vegetation and building of more social amenities to accommodate the new people. This direct effects on vegetation indirectly causes erosion. The rural areas are now left with old people who are not able to embark on conservation farming. This reduces interest in farming activities which in turn reduces the interest on soil, care for soil, and soil conservation measures generally.

RESEARCH METHODOLOGY

The Study Area

The study location is Anambra State, Nigeria. It is one of the 36 states of Federal Republic of Nigeria. The study location experiences rainy season and dry season from March to November and December to February respectively.

STUDY METHOD

Data for this study were obtained from both primary and secondary sources using simple statistical methods such as mean, frequency and percentage, distributions and tables.

RESULTS AND DISCUSSION

The results of analysis of data collected will be presented and discussed under socio-economic characteristics of the respondents. Distribution according to gender shows that 64% of the respondents are female while 36% are male which mean that females are in majority when it comes to agricultural production. This can be attributed to the young men engaging to business right from younger age in form of apprenticeship. Distribution according to age shows in table 3 that greater percentage i.e. 42% of respondents are within 30 – 39 years while only 4% are within 60 years and above, 18% are between 20 – 29 years, 24% are between 40 – 49, years and 12% fall between 50 – 59 years. It shows that majority of the farmers are within the age range of 30 – 39 years. Distribution according to marital status shows that 56% of the farmers interviewed are married, 28% are single while 16% are widowed. According to farming experience in table 3 most of the farmers have between 6 – 10 years of experience. On educational level, it shows that 56% of the respondents had secondary education, 24% primary education while 20% had tertiary education.

Causes of Erosion in Anambra State

The respondents are asked to indicate the demographic causes of erosion in state. Table 4 below shows that population growth, density and migration are the major demographic causes of erosion in the state, with 60%, 30% and 10% of the respondent respectively. Table 5 shows that majority of the respondents pointed out high rainfall as the major causes of the erosion whereas excavation or quaering of sand had 2% of the respondents. Apart from these, lack of good drainage system had 25% of the respondents as the major causes of soil erosion in the state

Effects of Erosion on Agriculture

The respondents identified different effects of erosion on agriculture as shown on table 6. Destruction. Farmland, destruction of trees, low of fertility, siltation of planted seeds and displacement of farmers are on the increase.

CONCLUSIONS AND RECOMMENDATION

Demographic causes of soil erosion in Anambra State are the population growth, population density and migration of the people to the urban centers. Field survey showed that population growth in the last decades contributed to the tune of 60%, population density 30%, and migration 10% to the causes of erosion in the state. Effects of soil erosion on

agriculture are destruction of trees, siltation of planted seeds, washing away of germinated seed any destruction of farm land.

RECOMMENDATION

It is recommended that the government:

- (i) Improve the finance of erosion control units of the state.
- (ii) Improve on environmental education.
- (iii) Formulate sound policies and increase legislative measures.

Table 1: Global area Affected by Accelerate Soil Erosion

Region	Area affected (water erosion)	(10 ⁶ ha) (wind erosion)
Africa	227.4	187.8
Asia	433.7	224.1
Europe	113.9	41.6
North & central America	106.6	38.8
Oceanic Pacific Island	83.4	16.4
South America	124.1	41.4
World	1088.5	550.1

Source: UNO Statistical yearbook, 39 Education

Table 2: Population of Some Countries in 1993

Land	Population	Annual rate of increase %	Surface area Km ²	Density
U.S.A	248.709.873	1.1	9.363.520	28
Austria	7.555.338	1.1	83.853	95
Britain	5.352.200	0.4	224.110	238
India	844.324.222	2.1	3.287.590	258
Nigeria	88.514.501	3.0	923.768	114
World	540M	1.7	136.255T	114

Source: UNO statistical yearbook, 39 Edition

Educational Attainment

Primary education	12	24
Secondary education	28	56
Tertiary education	10	20
Total	50	100

Table 3: Socio-Economic Characteristics of the Framer

Parameter	Frequency	Percentage
Gender:		
Male	18	36
Female	32	64
Total	50	100
Age:		
20 – 29	9	18
30 – 39	21	42
40 – 49	21	24
50 – 59	6	12
60 and above	2	4
Total	50	100
Marital Status:		
Married	28	56
Single	14	28
Widowed	8	16
Total	50	100
Farming Experience		
1 – 5	20	40
6 – 10	22	44
11 – 16	4	8
17 and above	4	8
Total	50	100

Sources: Fieldwork, 2011

Table 4: Demographic causes of Erosion in the state by the Respondents

Responses	Frequency	Percentage
Population growth	30	60
Population density	15	30
Migration	5	10
Total	50	100

Source: Fieldwork, 2011.

Table 5: Causes of Gully Erosion in the State

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
Continuous cropping	5
Bush burning	3
Excavation	2

Source: Field survey, 2011.

Table 5: Effects of Erosion on Agriculture

Effects	Increasing	Decreasing	Percentage
Destruction of trees	55	35	10
Loss of human lives	20	60	20
Washing away of germinated seeds	40	20	20
Loss of livestock	35	45	20
Siltation of planted seeds	55	45	20
Destruction of farm land	70	25	5
Displacement of farmers	56	27	17
Loss of houses	50	25	25
Loss of fertility	65	18	17
Loss of farmer’s house	50	25	25
Loss of pasture land	45	40	15

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