

Gully and Flooding in Anambra State: the Way Forward

Nwabinehi, Emmanuel Onochie

Department of Ceramic and Glass Technology, AkaniIbiam Federal Polytechnic, Unwana, Ebonyi State.

Chukwudi C. Ezeh

Department of Geology and Mining, Enugu State University of Science and Technology, Enugu, Nigeria

Email ; pacificgeologicals@yahoo.com

Abstract

In Anambra state, there are more than 1,000 gully erosion sites out of which 600 are active. The state is inundated with flooding and blockage of major and minor drainages flood channels as a result of improper planning and design over the years. These have been identified as the major causes of the environmental woes of the study area. Flooding and gully erosion menace has reached crisis level in the state. From the perspective of domestic, social and economic life, the state accommodates over 6 million people daily as it houses one of the largest conglomerations of markets in Africa with intense commercial activities in every nooks and crannies. These activities contribute to drainage channels being blocked with solid wastes which lead to the flooding of street and highways during the rains. This result is uncontrolled flood water movement which has often resulted to gully erosions. This paper assesses the causative factors and proffers mitigation/abatement solution to the flooding and gully erosion menace in the state.

Keywords: Flooding, Gully erosion, Drainage system, Anthropogenic factors

INTRODUCTION

Anambra state was created on 27th August 1991 from the old Anambra and is located in south eastern Nigeria. Its boundaries are formed by Delta state to the west, Imo state to the south, Enugu state to the east and Kogi state to the North. The state occupies a landmass of 4,416 square kilometer and is located on the eastern plains of River Niger. The state is experiencing rapid urbanization and because of its relatively small land mass, the whole place is virtually becoming over populated.



Figure 1 ; MAP showing Anambra State .

STATEMENT OF THE PROBLEM

Flooding and gully erosion has become one of the greatest environmental disaster facing many Towns and villages in Anambra state. Hundreds of people are directly affected by flood and gully erosion every year within the communities, towns and villages and yet the rate of increase in this environmental woes has continued unabated with no suitable solution.

ASSESSING THE REMOTE CAUSE OF FLOODING AND GULLY IN ANAMBRA STATE

A variety of factors such as relief of the states, slope instability, geomorphology of the state, soil types, rainfall patterns, type of vegetations and anthropogenic activities like rapid urbanizations, rural urban migration drift, over population, indiscriminate dumping of household waste in drains, emission of ozone layer depleting gases/ burning of fossil fuels, hazardous industrial waste products, heavy rains of the tropic that eventually leads to the forming and growth of gullies due to the transformation and redistribution processes of natural soil/rock elements has been identify as the remote causes of gully erosion and flooding in the study area.

In Anambra state runoff tends to be high due to heavy down pour of the tropics, poor agricultural practices, and other land use practices together with unplanned engineering works, laterite excavations. These practices deprive the soil surface of its

Vegetative cover hence surface run off abounds which exposes the soil to flooding and erosions activities. Also due to heavy commercial activities going on in these towns, it has lead to generation of tons of liquid and gaseous waste which find their way into the poorly constructed drainage system/flood channels.

In Anambra state, lands and resources are utilized without approvals or conducting of environment impact assessment. The towns and villages in Anambra state are also characterized by the proliferation of illegal structure and shanties including indiscriminate dumping of metal scraps on major drainage system, building of houses and markets stores on drainage and sewage lines have been also identified as parts of the causative problems. Road construction companies and unscrupulous sand/laterite excavators are also part of the problem that leaves the fragile environment vulnerable to erosion and flooding.

MITIGATION OF FLOODING AND GULLY IN ANAMBRA STATE.

Many flooding and erosion abatement measures have been put in place both by individuals, affected communities and state government.

The following may be considered for effective combating of flooding and gully erosion in Anambra state.

1. Organizing workshops, seminar, symposium, educating the 177 communities in Anambra state. This should involve environmental experts in various fields of environmental science which includes geology, geophysics, geomorphology, hydrogeology, soil scientist. These professional will deliver lectures in local languages and prescribe easy to follow flood model and gully erosion control principles for the affected communities.
2. Planting of vegetation in bare land, such trees as cashew (*Anacardium clientele*) female Bamboos, Melina (*amelinearborie*) Neem or dogonayaro (*Ajadrachia indica*) have proved to be a good antidote for combating gully erosion.
3. Excessive bush burning, deforestation and overgrazing especially during dry season, should be avoided completely.
4. The indigenes should be taught on how to formulate some slogans, catch phrases to stimulate the interest of members of the various communities toward fighting the hydra headed menace.
5. Anambrians are advice to dig catchment pits, tunnels and waste water reservoirs by the sides of road, deep enough to contain volumes of angry ranging flood water.
6. Let the entire drains system/gutter and catchments pit be directed toward the nearest surface water bodies such as lakes streams, rivers ponds etc.
7. The channels must be constructed in such a way to reduce the speed of flood thereby reducing eroding ability of the moving water, the size must be adequate in capacity to cope with the volume of run off
 - 10 Need for development control; this should emphasis the following planning principles boundary line, density control land use, zoning building orientation, availability of amenities, and drainage maintenance.
 - 11 Construction of storm water sock away, this can be varied depending on the nature of runoff volume, amount of precipitation, the sock ways should be fitted with pipes which drain the water to river courses.
 - 12 Good farming practices such as crop rotation of system which does not strip the soil of vegetation cover thereby exposing them to heavy rains of the tropic.
 - 13 Construction of control Dams, ditches up valley, earth dams of adequate capacity should be constructed across natural and earth drainage along which the storm water flows.
 - 14 Building house with high foundation; people who are living in flood prone areas in the state should constructed house with high foundation well above the normal height of seasons flooding
 - 15 Appropriate landscaping method, the practices of using concrete slabs, interlocks to cover compounds should be discouraged since it helps to reduce spaces for infiltration thereby encourages run-off.
 - 16 Environmental campaign awareness should be created, greenbelt adaptation should be encourage instead of leaving the soil bare for leaching and runoff.

CONCLUSION AND RECOMMENDATIONS

Flooding is the common and most costly natural disaster in Anambra state, though its Impacts are also exacerbated by anthropogenic factors. Quality assessment of the risk impacts of flood will facilitate the state to plan adaptation measures more effectively. The study shows that adoption of town planning instrument such as master plans, rural plans layout sub division, and development control as tools for controlling the use and enjoyment of land will also go a long way to stemming the tide of such environmental problems.

The citizenry should be sensitize through environmental education awareness to realize the roles they played in

creating conditions for such problems and the roles they should play to effectively control the problems.

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