CHANGE AGENDA: EROSION MANAGEMENT AND PREVENTION IN LOKOJA

Florence, F. Falana & Damilola, H. Falana
Department of Estate Management, The Federal Polytechnic, Idah, Kogi State.
Department of Zoology, University of Ibadan, Oyo State.
E-mail: florencefalana@yahoo.com, dammydayo@gmail.com

ABSTRACT

The only thing that is permanent in life is change. We need positive change in every sector of life. Change is a transformation from worse off to better off. For some years past the Nigeria infrastructure and environment have witnessed decadence, decay and degradation. On the New Year 2015 message president Buhari has promised Nigerian that change is imminent. He proposed a 5-point change agenda aim at improving Nigeria of which improved infrastructure is one of them. Erosion is the highest environmental problem threatening sustainability of both plant and animal (Okin, 2002). Erosion also affects structure and infrastructure. The study focuses on Lokoja one of erosion prevalence towns in Nigeria due to its topographical and geographical location. The aim and objective of this paper is to examine how the change agenda can ameliorate the menace of erosion in Lokoja. Data were collected from primary and secondary sources. Based on the findings, it was established that erosion has negatively effect on land, building and infrastructure in Lokoja. Also the ecological funds for environmental development are not use to prevent environmental degradation of which erosion is one. Furthermore, non-implementation of planning policies coupled with the physical nature of Lokoja characterized by slope contributed to the erosion menace. Recommendations were made in the direction of non diversion of fund, policy enforcement and public private participation to mitigate erosion in our urban environment.

Keyword: Change Agenda, Erosion, Urban Environment, Erosivity, Erodibility.

INTRODUCTION

Soil erosion is the world greatest environmental problem threatening sustainability of both plant and animal. Soil erosion menace affects rural and urban setting the world over. It is said that 65% of the soil on earth have displayed degradation phenomenon as a result of soil erosion (Okin, 2002). Erosion affects both natural and man-made resources, usually its effect are always negative (Abegunde, et al. 2003). Lokoja, a growing urban centre is witnessing serious land degradation due to water erosion attributed to location and topography. Landed properties in many areas affected by erosion are fast loosening its value especially in this economic melt-down period. The essence of sustainability is to maintain, protect, conserve and standardized the value of our natural and man-made environment. There is therefore the need to protect landed property, so as to maintain its physical, monetary and aesthetic values.

The Need for Change

Nigeria witnessed a drastic change from agro-based country to wealthy exporting country during the boom of 1970s. It was during this period that many

infrastructures such as roads, bridges, flyovers, water mains and electricity were brought into being. In fact, the oil revenue then was so surplus that the then president intoned that "the problem of Nigeria was not money but how to spend it". Over time population increased, more national needs emerged and oil revenue dwindled coupled with these leaders started travelling abroad and had a taste of good lives and felt the need to amass wealth for their personal use hence diversion of national wealth to personal use. In no time, corruption set in, most of existing infrastructures were abandoned without maintenance. Very few ones that were constructed were substandard due to diversion of funds. If this trend is allowed to continue, there may be a total collapse in every sector in Nigeria hence the need for change. Change is an evidence of life.

It is impossible to grow without change (Manson, 2004). Change according to Merriam-Webster Dictionary is "to become different" free dictionary defined change as "to cause to be different, to give a completely different form or appearance" while Dictionary .com opines that change is to: transform or convert". Hence change agenda implies a transformation of the past near collapse situation in every sector of Nigeria. For the transformation to start, Nigeria therefore needs a visionary, committed and exemplary leader, who will lead by example. According to Alake (2015), change can only occur where the leaders are disciplined and lead with vision and clarity and where there is hope, progress, safety, jobs, basic education, infrastructure, healthcare that are affordable and respect for environment and sustainable development. Hence change is a collective commitment of leaders that have the same purpose, vision and focus.

The Five-Point Change Agenda of President Buhari

General Buhari before his election as president told Nigerians not to lose hope because change is imminent in the country and that 2015 is a year of change for the nation which his election as president would bring (The nation, January 1, 2015). President Buhari listed a five-Point Agenda which he would implement. These include:

- Mass employment
- Adequate security
- Fight corruption
- Improve infrastructure
- Good health care

Every Nigerian is expecting change in all the above points. Also, the president further emphasized the three-way change which is to end insecurity, create employment and provide qualitative education and end problems which are caused by corruption which is responsible for much wastage of resources (Buhari, 2015). These changes are welcome developments to all Nigerians who are groaning under the problem of unemployment, poverty and obsolete infrastructure. Nwoko (2015) opined that, it is obvious that Americans are interested in regime change in Nigeria. To international world, change in means regime change. This implies that even the international world is fed up with the level of corruption and infrastructural decay in Nigeria.

His Manifesto

In his manifesto, Buhari posited that leaders in the past have squandered the opportunity to build functional infrastructure. On environment, he promised to adopt a holistic approach to erosion and shore line protection across the country. To restructure the ecological fund office to enable it meets today environmental challenges and to ensure fuel compliance with Town Planning and Environmental Laws and Edicts (Buhari 2014). Hence, there is serious expectation for better environment in general and erosion control in particular.

Change and Erosion

Many towns and villages have witnessed land degradation caused by erosion. Some towns have been cut off due to erosion menace. Most roads have become a dead trap and many farm crops washed away. According to Dlamini, soil erosion has been observed to degrade land resources base, infrastructure and buildings uses and effect flooding. Erosion has displaced people demolished houses and hampered accessibility. Urban areas are continually subjected to forces of change as social and economic factors exerts their influence, land uses with an urban areas will change with resultant effect on land value (Leen and Goodall, 1997). Therefore, there should be a change in the perspective the previous leaders have prioritized erosion management and prevention. On erosion issue, Buhari (2015) intoned "we will try and solve the problem that is disturbing you, especially erosion. The resources required to control erosion in Edo state alone are enormous not to talk of south eastern states. The All Progressive government will do that. This is an undertaking. We are going to make sure we rehabilitate infrastructure". The above statement underscores the fact that the present regime is aware of the danger erosion has posed in Nigeria. Therefore, a proactive measure aimed at managing and preventing erosion is very paramount in Nigeria and it shows their commitment to tackle erosion problem in Nigeria.

The Challenge

Change according to Cambell, (2015) Nigeria people wants change but Buhari election does not represent revolution. The cooperating and competing elites who have benefited from the current system and have run Nigeria since restoration of civilian government in 1999 are still there and largely in charge. They dominate Buhari's APC regime just as do Jonathan's PDP. The saving grace is that Buhari, a retired general and a former military chief of state though a member of the elites, unlike many others has never enriched himself at the public expense. Will he be able to effect this change in the midst of these other elites couple with the corrupt civil service and military weaklings? According to Cambell (2015), Buhari has been out of office for decades and his style is something of "a lone wolf". He had a very supportive and formidable second in command during his military era. Our hope is that is lieutenants will agree and support his vision for change. According to Aregbesola (2015), what played out in the 8th National Assemblies on June 9, 2015 elections shows that true change may not have come. Nigeria is truly evolving; Nigeria is anxiously waiting for the change not continuity. Although change is not automatic but gradual, it takes time but people that have suffered for long want immediate solution.

Concept of Erosion

Erosion is the removal of rock and soil material by natural process, principally, running water glacier, global waves and wind (Microsoft Encarta Premium, 2009). It has also been described as the gradual but progressive removal of soil or rock particles from the parent mass and subsequent transportation to other location by the action of water or wind (Okunade, 1995). Erosion as opined by Abegunde et al, (2006) is the wearing away and removal of soil and rock fragment on the earth surface, its transportation and eventual deposition of the sediments. Erosion causes pollution, land degradation, siltation of oceans, seas, reservoirs and rivers. Erosion, as it affects man and its environment is natural and as old as the earth itself (Omafra Staff, 2003). It is the gradual washing away of soil through the agent of denudation which include, wind, water and man (Abegunde et al, 2006). These denudation agents, loose, wear way, dislodge, transport and deposit wear off particles and nutrients in their location. The process of soil erosion could be slow and continues unnoticed or may occur at an alarming rate causing serious loss of top soil. Erosion can be classified into sheet, rill, channel and gully types. Gully erosion which creates a vertical bank deeper than three meters in most common in the study area. Soil is the most vital earth's resources. It hosts both animal and in-animate being (Okin, 2002), over three quarters of the world's man-made developments are on it. It existence is the bases for the performance of most disciplines in the world (Olori, 2006), most earth's natural resources are directly linked to or found in the soil. Threat to soil is therefore threat to life (Abegunde et al, 2006).

Factors Influencing Erosion

The factors controlling the working of the soil erosion, system are:

i. Erosivity of the eroding agent
ii. The erodibility of the nature of plant cover (Aruleba, 2007) and,
iii. Slope gradient and length.

Erosivity

The tendency to detach and transport soil particle is directly related to rainfall intensity and runoff (Aruleba, 2007). Both rainfall and runoff factors is considered in assessing erosion problems. The impacts of raindrops on the soil surface breakdown soil aggregates and disperse the aggregates materials. Lighter aggregates materials such as very fine sand, silt, clay and organic matter can be easily removed by raindrops splash and runoff water, greater rain drop energy or runoff amounts might be required to move the larger sand and gravel particles (Abegunde, 2003) soil loss is closely related to rainfall partly through the detaching power of raindrop striking the soil surface and partly through the contribution of rain to runoff (Aruleba, 2007). The effect of this is greatest and most noticeable during short duration, high intensity thunderstorms. The amount of soil loss can be significant when suspended over time. Runoff occurs when excess water on slope cannot be absorbed into the soil or trapped on the surface. Soil compaction, crusting or freezing can also increase runoff due to reduced infiltration. Lokoja, a sloppy terrain, there is no proper channelization of storm drains. Runoff water from counters building reduces infiltration and increases runoff volumes into storm drains and urban streams. This often inundate adjacent residences causing sheet erosion and street flood, which eventually lead to gully erosion, periodic lost of lives and properties.

Erodibility

Soil erodibility is an estimate of the ability of soil to resist erosion, based on the physical characteristics of each soil (Olatunji & Akintan, 2007). Generally, soil with faster infiltration rates, higher level of organic matter and improved soil structure have greater resistance to erosion, sand, sandy loam and loam texture soils tends to be less erodible than silts, very fine sand and certain clay textured soils (Olori, 2006). Erodibility defines the resistance of the soil to both detachment and transport. Although, soil resistance to erosion depends in part on topographic position, slope steepness and the amount of disturbance created by man-erodibility varies with soil texture, aggregate stability and shear strength, and infiltration capacity, organic and chemical contents (Aruleba, 2007).

Slope Gradient and Length

Naturally, the steeper the slopes of a parcel land the greater the amount of soil loss to erosion. Soil erosion by water also increases as the slope length increases due to greater accumulation of runoff, an increase velocity of water will permit a greater degree of scouring (carry capacity for sediment) (Abegunde et al, 2006). Erosion normally increases with increase in slope, steepness and slope length as a result of respective increase in velocity and volume of surface runoff. While on a flat surface, rain drop splash soil particles randomly in all directions, on sloping ground, more soil is splashed down slope than un-slope. The proportion increases the slope steepness.

Effect of Erosion on Urban Environment

The proliferations of cities caused by ever-increasing number of people to dwell in cities are putting stress on the rain-forest ecosystem. This is more prevalent in Lokoja a sloppy topography. Heavy rains in the clear hill slopes soon cause storm runoff water to erode and produce devastation erosion and flood which despoil infrastructure and properties. Olatunji and Akintan (2007) opines that the deliberate removal of vegetation has caused laterisation and increased rate of erosion. Soil erosion (by water) has been observed to degrade the global land resources base infrastructure and building uses, and effect of flooding (Dlamini:- http//www.sntc.org.sz/ee articles/soil eleg.HEM.) a study in Chin revealed that not less than 43% of the country's populations were confined to 13% of its land, this has resulted into pressure and over-utilization of the land, exposing it to soil erosion and causing poverty to the people (Beijins Time, 2002).

According to Aruleba (2007), excessive soil erosion tends to deplete the resources upon which the strength of any nation depends. Hence, erosion tends to weaken nation's strength (Field & Field, (2002). In the Lokoja, some area sub-soil and bedrock are exposed and the lands are entrenched by gullies. The area down valley is affected by silts, which clog ditches and River Niger causing choking of the river and reducing its capacity, creating flood hazard. The gullies has scarred the beauty of landscape and lowering water quality downstream. Erosion problem in Lokoja has caused bastardization of the landscape and destruction of lives and properties. For example in 1987, flood exhumed some bodies from tombs and deposited them along River Niger. Erosion leads to waste of resources in form of destruction or money to control the erosion (Owens, 2000). Hence, there is need for change towards erosion prevention.

THE STUDY AREA

Lokoja, the state capital of Kogi State Nigeria was founded in 1860 by Williams Baikie. Lokoja is confluence town, the very point where to Nigeria largest rivers (Niger & Benue) met. Kogi State lies approximately between latitude 6°66′n and 8 ° 48′N of equator and bounded on both sides by longitude 5 ° 30′ and 7 ° 30′. The climate is tropical with alternative dry and raining season from December to April and May to October respectively. The annual precipitation ranges from 950mm to 1,500mm of rainfall with July the rainiest month. Humidity is relatively high between 65-75% throughout the year. Daily temperance is between 22.8 ° C and 33.7 ° C. The hottest months are January to April. Daily pressure varies between 100mb and 1013mb all through the year. A remarkable feature in Lokoja is that it is surrounded by mountain Patti ridge which is over 200m above sea level and in the north by River Niger. These two features serves as catalyst for cloud formation, the sloppy nature of the town initiated the prevalent ecological problems of water erosion and flooding. The erosion has been attributed to lack of drainage facility, haphazard building projects, population pressure which commenced after the creation of Kogi State and insufficient fund due to economic melt-down.

METHODOLOGY

The effect of erosion on property value was carried out by the researcher between June 2009 and December 2009. Both primary and secondary sources of data were employed in the study. Existing literature on the topic globally and in relation to the study area were sought in the library, relevant websites and government offices. Since data on exact number of properties in Lokoja was not readily available, the researcher purposely administered one-hundred and twenty copies of questionnaire randomly to both landlord and tenant in area prone to erosion and areas free from erosion. Hundred copies of questionnaire were retrieved. A descriptive data analysis technique was adopted for in-depth practical insight into effect of erosion on property and infrastructure. This research work is exploratory as it synthesized the data collected to infer the result of erosion menace in the case study area.

Table 1: According to Causes of Erosion

Causes of Erosion		Frequency	Percents	Valid Percents	Cumulative Percentage
	Topography	44	44	44	44
	Poor Drainage	24	24	24	68
	Blocked Drainage	12	12	12	80
	Unplanned Building	20	20	20	100
	Total	100	100	100	

Source: Field Survey, 2009

SUMMARY OF FINDINGS

Areas mostly affected by erosion menace are the core area where a large percentage of low income earners reside. Inadequate planning policy coupled with indiscriminate property development has led to blockage of natural river channel causing flooding and erosion. Property value in erosion prone area is generally lower than areas with no erosion problem. There is high level of obsolescence and non-response to repairs obligation due to low income in prone area properties.

Physical nature of Lokoja characterized by slope and valley contribute to erosion, inaccessibility and flooding. Landscape disruption, infrastructure destruction, flooding and siltation of River Niger are major features of erosion effect in Lokoja.

RECOMMENDATIONS

Based on the above findings, the following are hereby recommended:

- Indiscriminate construction of residential houses, shop and kiosk should be discouraged by adequate monitoring of development by Town Planning Authority.
- Adequate provision for infrastructure right of ways for drainages, water, and electricity should be ensured by planning authority in developing areas before building plan is approved in order to prevent spread of erosion problem.
- For every layout, pedologist and fluvial geomorphologist need to assess soil characteristic before large construction commences.
- Functional and enforceable legislation, land management refuse disposal and drainage system should be introduced and punitive measures meted on offenders.
- Diversion of storm water and drains especially stepped drains in sloppy area should be introduced in Lokoja.
- Orchard terrace should commence on mount Patti slopes by planting food trees, ornamental and economic plants. The resident down slope should also plant cover crop along erosion path to reduce run off velocity.
- Low income housing provision should be intensified by government and private individual/agency at affordable rent to decongest urban core to make urban upgrading feasible.
- Community participation (seeing the environment as own rather than government) will go a long way to provide adequate drainage system.
- Poverty which is the major cause of slum formation should be reduced by provision of adequate work, entrepreneurship and financial empowerment for urban poor.
- Erosion problem should be attended to at formative stage before becoming an unmanageable gully that will gulp millions of Naira in future.
- Ecological fund should be use for channelization and other erosion prevention strategies.

CONCLUSION

Erosion problem has been identified as having a negative influence on property and environment. The wealth of a nation can be measure in term of landed property. For the change Agenda of the present regime to be achieved, the issue of environmental degradation, especially, erosion should be addressed by all stake holders in order to improve our environment.

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