

**HUMAN-ENVIRONMENTAL RELATIONS: PRE & POST FLOOD CONDITIONS  
AND ITS HEALTH IMPLICATIONS IN AGADAMA COMMUNITY, DELTA  
STATE NIGERIA**

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**Abstract**

*The human-environmental relations is an intricate one as evident in the 2012 flood that lasted for three months in Nigeria and it was not without some indelible effects and changes in the life style and culture of communities inundated by the flood. Agadama is an agrarian coastal community in Uwheru clan, Ughelli North LGA, Delta state, in the oil rich Niger Delta region of Nigeria. The community had its own share of the devastating flood incidence and since then had not remained the same again. This is a qualitative study which employed ethnographic methods of data collection - Key Informant Interview (KII), Participant observation and In-depth Interview (IDI), adopting a purely descriptive method of analysis. The study reveals the interplay between human-environmental relations. There is also an alteration in their traditional way of life and the entire socio-cultural milieu. Uncontrollable environmental changes/hazards which the people were unprepared for, steered up drastic change in behavior, social structure and general cultural practices, no matter how autochthonous these practices may have been. Flexibility of the people's culture was an adaptive strategy against the rampaging flood. The marginal status of most flooded rural communities led to complete or partial collapse of their subsistence base, especially for those operating an agricultural local economy.*

**Key words:** *Flood, Environment, adaptation, cultural changes, health.*

## Introduction

Early works in human-environmental relations have deterministic roots that stretched into Classical history, linking it with the traditional thinking that the environment held fundamental sway on humanity (Glacken, 1967 cited by Judkins, Smith and Keys, 2008). The idea that a society's physical environment can control its cultural development is long established, though it could claim to have suffered more than most from shifts in intellectual fashion (Coombes and Barber, 2005).

However, to what extent the deterministic perspectives have been accepted among scholars is still contestable. Current environmental realities however, still lend credence to the relevance of the theory in the 21<sup>st</sup> century. Although, recognition of the combined influences of both culture and environment on populations has been advocated by scholars like Judkins, Smith and Keys (2008) in their criticism/review of the work of Jared Diamond's (2005) work on 'Guns, Gems and Steel'.

This paper aligns with this position for a holistic understanding of this discourse. Howbeit, some empirical and theoretical findings support this connection between culture and environment (Nunn, 2003). The year 2012 remains indelible in Nigeria as the year the heavens let loose the rains, which led to flood disaster beyond human control. Lives were lost, properties destroyed, farm lands were washed away, residential areas were inundated; houses and homes were filled with water to the roof thereby chasing its occupants out to relocate to friends and relatives living at higher planes. Others preferred the temporary refugee camps provided by the governments of various states, mostly in schools. Pupils and students could not go to schools while the devastating flood lasted, although temporary teachers were sent to some of these camps but most never showed up to their designated areas. Most of these flood victims in refugee camps complained of ill health/infections from contagious or communicable diseases like cholera, cough, as well as dangers of snake bites, and insect bites like mosquitoes with its attendant malaria infections. Victims of the flood also suffered food shortages (in spite of the throngs of food donated by well meaning Nigerians and charity organizations) in the camps and where they are available, the sharing formula and who shares the items was a problem. There were accusations and counter accusations of smuggling the items out to people who were not flood victims. This is because some community leaders who were in-charge of sharing relief items were accused of partiality and corruption.

Agadama is a coastal agrarian community in the oil rich Niger Delta region of Nigeria, which also had its share of the overwhelming flood disaster in 2012. The resultant effects are much especially with significant alterations in the traditional cultural practices of the people. The above losses/problems encountered by several communities in Nigeria during 2012 flood are replete with lots of puzzles such as the following: were Nigerians pre-informed by meteorologists? If they were pre-informed would these communities be capable of devising ways to checkmate the effects of this natural disaster? Put differently, to what extent can human influence control/limit the impact of the forces/changes from the environment? To what extent can climatic change alter/disrupt a people's culture/tradition? This paper is therefore set to attempt answering these questions.

It is pertinent to point out that the long debate on the relationship or influence humans and environments wield on each other still persists even in the 21<sup>st</sup> century with the increase in spate of reoccurring natural disasters all over the world. Earlier studies on environmental determinism opined that 'environmental factors were assigned the deterministic cause of racial differences, cultural practices, moral values, ingenuity and the ultimate capability of any given

population (Semple, 1911, Huntington, 1915, Fleure, 1919, Taylor, 1921 cited by Judkins et al. 2008: 20). Though this theory of environmental determinism has been criticized for its inability to account for the ways humans intentionally modified their environments. Literature still persist within academic discourses focusing on revitalizing the abandoned themes of environmental determinism, these re-visitations following current environmental realities have been branded 'neo-environmental determinism'. Criticisms led to the evolution of the theory of 'cultural possibilism' between 1920s-1960s (Judkins, 2008).

As an alternative to deterministic perspectives, environmental possibilism argued that humans can make things happen by their own intelligence over time in a given environment and that humans are active elements in the human environmental partnership. Then came the 'moment of system' (1960s- present), where culture was seen as the product of human interaction with the environment, here culture was viewed as functional and adaptive but held a minor sway in the interaction. Subsequently, the era of behaviouralism (1965- present) saw humans as active participants in the interaction, not passive agents. Similarly, the moment of structuralism also set in the 1980s- 1990s/present which stressed that actions on an environment are not socially neutral, they are influenced by structural forces that condition the choices available to humans. 'The moment of structuralism was characterized by the elevation of society to position of greatest determinacy as institutions, governments, class, race and economic structures are viewed as dominant influence mediating human relations with the environment' (Judkins, et al. 2008: 21). Finally the era of integrative human ecologies (1987- present) also set in; it rejected the tendency to understand the local environment in the context of political economy and other forces at higher levels. It rather integrated both perspectives of the influence of society/culture and environment, rather than emphasizing undue influence of one over the other.

However, according to Erickson (1999:641), "Humans are considered active and dynamic agents who not only respond to the challenges of fluctuation of climate in their environments, but also create, shape and transform those very environments". The quality of human response is dependent on the degree of environmental disturbances/hazards as well as on the elasticity of the people's culture, so that they can easily adjust to changing environmental conditions.

It is therefore pertinent to understand that 'natural hazards are integral components of life on Earth' (ICSU, 2005 cited by Suzanne, 2006: 4). But the suddenness of their occurrence and degree of damages meted on humans, animals and properties are major areas of grave concerns for scholars. Suzanne, (2006) further, observed that the number of natural hazards culminating into disasters also has tremendously increased. She differentiated hazards from disasters in this statement, "We could attempt to define an environmental catastrophe, such as a natural hazard combined with a large disaster, the latter including measurable human and economical costs (e.g. death, infrastructure destruction, cultural impact, financial loss).

In its definition of natural disaster, the International Human Dimension Programme (IHDP) stresses that it is more a function of vulnerable people than severity in the natural hazard (Lonergan et al., 1999). The above implies that more concerns should be focused on the impact of natural hazards on humans than on the degree of its occurrence; since, humans have minimal control over some environmental factors. An environmental catastrophe also could be defined as a rapid departure from normality where humans and/or ecosystems cannot adapt. However, catastrophic events do not always occur rapidly. It is worthy to note therefore, that the magnitude of such a nationwide flood disaster, has not been recorded in the last two or three decades in Nigeria and as such it attracted the attention of all and sundry- Federal, State, Local

governments, non-governmental organizations (NGOs), individuals, as well as a few international organizations and institutions.

**Study Population/Methods of the Study:** The study was based in Ughelli North Local Government Area (LGA) of Delta state, Nigeria. Ughelli North is one of the twenty-five (25) local government areas (LGAs) in Delta state. The state has about 2.93% (4,098,391) of Nigeria's over 140 million 2006 population census figures out of which Ughelli North boast of about 320,687 inhabitants (FRN Official Gazette 2009: B26). This qualitative ethnographic study employed participant observation, key informant interview (KII) and in-depth interview (IDI) as data collection methods with content analysis involving 'thick description' of all observed phenomenon. Agadama is one of the numerous coastal communities in Ughelli-North LGA of Delta state, Nigeria.

Historically, Agadama is associated to a hunter known as Idama, who migrated from Uwheru clan ('main town' as it is often called by the Agadama natives) through a bush path/track. Oral tradition (prehistory) has it that, the main town Uwheru gave birth to five children, with the last being a female known as Ohoro, namely:

- (i) Erovie:- Uhwovioro, Uruvwrigbo, Odja
- (ii) Ehere:- main town, Agadama, Okugbe-Owarovwo, Ogoke, Uvwriche, Ophororo
- (iii) Urede:-main town, Oreba, Avwon
- (iv) Egbo:-Oro-ohoror
- (v) Ohoro

Kingship formerly resides with the first child 'Erovie' but with enlightenment and civilization, other sub-clans began to agitate and as a result, leadership of Uwheru clan is now rotated among five sub-clans that makes up the main town/clan.

The Agadama community is divided into two quarters (a) Uruvworo and (b) Ururhere. Each of the quarters is subdivided into three (3) streets (as they are locally called among the natives, but may not be same in English meaning of streets). The first quarter (Uruvworo) is made up of Oteka, Ogbijo and Ogbewwe, and the second quarter includes Enyerukoni, Etovie and Ogbese. The two quarters in the community often competed during festivals and ceremonies through wrestling matches, etc. The indigenes of Agadama majorly engage in farming, complimented with fishing and hunting. Agadama community numbers about 5000 persons, 70 percent of which are farmers, 20 percent are learned graduates from Nigerian universities, mostly civil servants, who combine their jobs with farming activities, while 10 percent are trained artisans, shop owners, cyclist/bike riders, among others (Pers. com. 30/12/2012).

## **Findings**

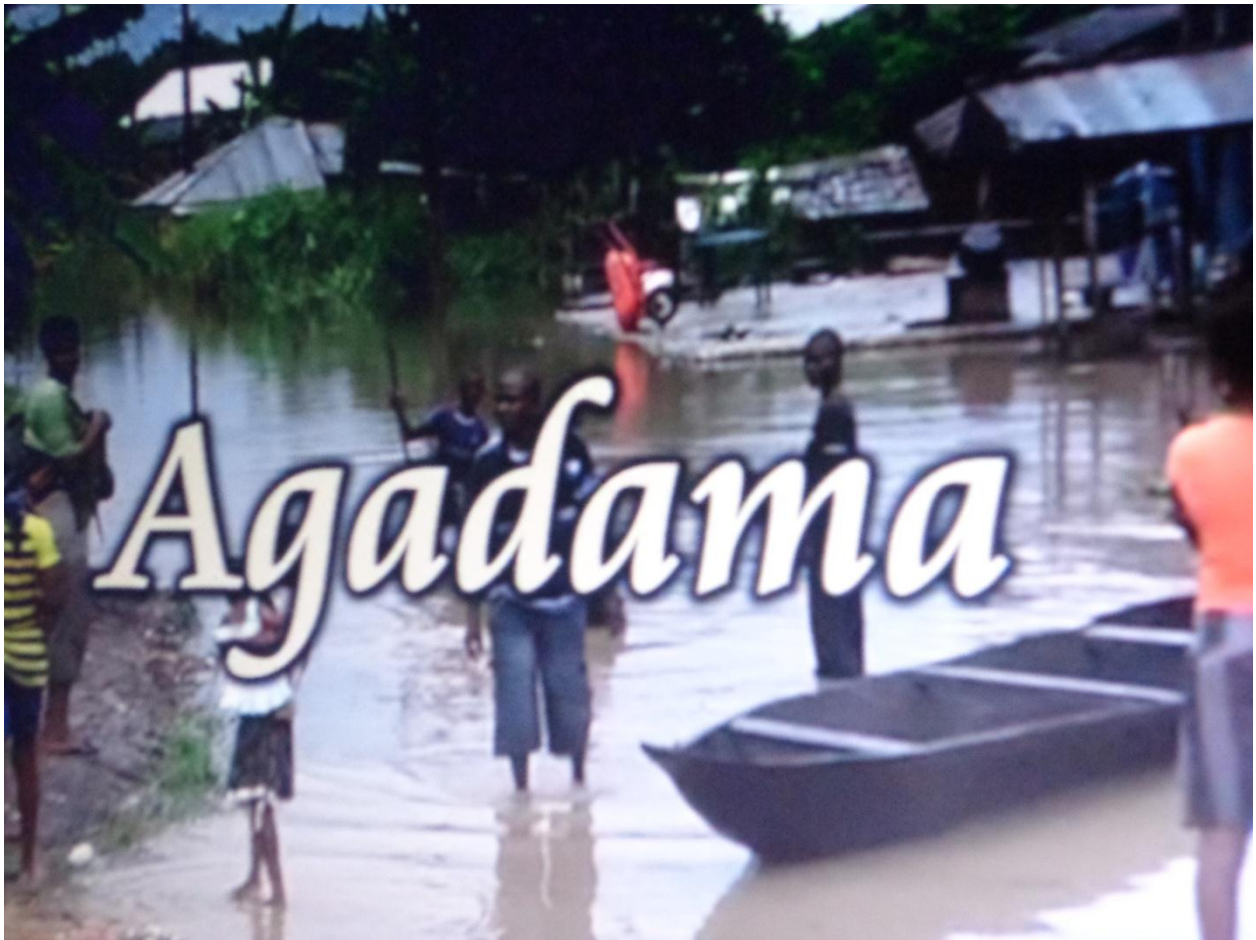
### **Pre-flood conditions in Agadama**

Prior to this flood incidence in 2012, the Agadama community according to most respondents (90%) interviewed was 'normal'. Since, Agadama is commonly known to be constantly water logged and swampy being a coastal environment. As an agrarian community which specialized in the production of sweet potatoes, yam (formerly), plantain, groundnuts, okra, pepper, cassava and rubber (latex) in commercial quantities. They also engage in fishing and hunting. Buyers from various parts of the country come to buy these crops after they have been harvested. People daily went to their farms early and returned in the evenings. The entire milieu is always filled with activities in the evenings when these farmers return from farms, people sit in groups discussing the intensity of the sun, nature of soil, grasses and their encounters with the pastoral Fulani herdsmen whom they are often in bloody conflicts with. There is also the

culture of increased marriage, burial ceremonies during harvest season when they must have sold their crops but not during the planting season.

### **The 2012 Flood Experience in Agadama Community**

Being a coastal community located in the Niger-Delta region of Nigeria, flood is not a strange phenomenon in this environment as they have evolved culturally acceptable/adaptive strategies to cope with this reoccurring climatic condition especially during the rainy seasons. But the flood which started September and ended in November 2012 was an unusual one which threw the entire community into a state of chaos. Inhabitants were chased out of their houses as it defiled all efforts to keep the encroaching waters out of their homes. Everyone moved the wealthy and poor, young and old were evacuated to a higher portion of the community, specifically along the major road that divided the community into two; the young helped ferry the old.



**Fig 1:** The flooded entrance to Agadama community- a once dry place now requires canoes.

People constructed make-shift shelters along the road with palm-fronts and bamboo sticks, while those who could not bear living in the open moved to the refugee camp at Oharisi Primary School in Ughelli-North LGA provided by the Delta state government for all flood victims in the area. News about the congested and the clumsy nature of the refugee camp/centre made majority to remain in Agadama. Most mud houses collapsed, inhabitants moved or relocated

several times as the flood encroached to places where it didn't get to initially.



**Fig. 2:** One of the damaged mud houses during the flood in Agadama community, Delta State. Health wise, respondents observed that most people were affected with sores on their feet due to constant movement in the contaminated water, absence of drinkable water led to cholera, diarrhea, cough, people died of snake bites; while some others were carried/drowned by the heavy currents of the flood to unknown destinations. In terms of accessing basic health-care, the community has little or no health facility and no evidence of government presence as there are no Primary Health Centers (PHC)/hospitals as stipulated by WHO (1978) Alma-Ata declaration. Agadama has about seven (7) patent medicine/chemist stores owned by private individuals, who are either retired health personnel, graduates from state school of health, persons who acquired drug dispensing skills through apprenticeship among others. Although, 60% of the respondents opined that government presence was only felt during National Immunization exercises (Pers. Com. December, 2012). The closest health/maternity centers are located at neighbouring communities like Owarovwo, Uwheru, Unenurhe, and Evwreni. The people only makes use of Ughelli General Hospital which is about 45 minutes to one hour drive, when a health condition is critical, and in most cases victims often die before getting to the health facility. The researcher witnessed at least two of such deaths while employing participant observation at Agadama between August 2008 and September, 2009. A pathetic case witnessed by this researcher while interviewing the owner of one of the drug-dispensing shops in the community, was where a child of about 7 years old had a cut on her leg, her parents resorted to traditional concoctions and dabbing the wound with hot water daily, the child contracted tetanus which led to constant jerking. She was rushed to this chemist shop (since, there are no hospitals) where she was injected with tetanus oxide; but she died days later. It marveled this researcher that even at this critical level, this child's parents could not afford to take their child to the General Hospital located at Ughelli-North Local Government



Headquarters which is at a distance 45minutes to an hour drive. This may either be a reflection of ignorance on the part of the parents of this child and/or a failure on the part of the Nigerian government to fulfill its basic obligation of providing Primary Health Care Centers in rural areas, within trek able distance, equipped with qualified health professionals and facilities. It is of interest to state that severe and critical cases like surgery, maternity issues for pregnant women (though most times pregnant women are taken care of by traditional birth attendants-TBAs) are often taken to chemists. One case was an accident, where the victim's skull split into two, this was beyond what the chemist can handle and they were referred to the General hospital at Ughelli-north LGA; but the victim died on the way to the health facility.

Consequently, Poor health conditions worsened during the flood as the existing chemists shops were also inundated with the flood. People in Agadama community had various views of the cause of the abnormal flood and where it came from. Some said the flood was caused by excessive rains due to climatic changes, some others insisted that it came from the poorly managed Cameroon and Nigerian dams, as they observed that sometimes, there were no rains yet the flood kept increasing. The flood was at its peak in October flowing with great currents and carrying trips of sands to residential areas of the community.

The flood was not totally negative as it immediately created employment opportunity for the enterprising youths of the community as they brought back their canoes (canoes are mostly kept in the farms used in transporting farm produce from distant lands in the water logged environments) with which they ferried people and luggage to safer areas. Each canoe paddler made up to five to eight (₦5,000- ₦8,000) thousand naira daily, although there are cases were canoes capsized and passengers got drowned.

Others who benefited from the flood incidence were the cyclists/bikes; some boys carried passengers on their backs and got paid. One respondent observed that one benefit of the flood in Agadama was that 'piles of domestic wastes in the nooks and crannies of the community were washed away by the flood'. Young boys constructed what is locally known as 'monkey bridges' on places where roads were cut into two and collected tolls from those making use of the temporary bridges. People also raised higher platforms in their houses and rooms where properties like foams, televisions, chairs etc were placed, while some others broke ceilings of roofs and kept important documents, seedlings and food items. Although when the flood became high and critical in October, it got to roof tops and none of these items were spared

from the rampaging flood in Agadama community.



**Fig. 3:** One of the many houses and cars ravaged by the uncontrollable flood in Agadama community.

From the above, it is clear that the environment regulated what people did at this particular time. All burial, marriages ceremonies and other annual cultural practices which are often celebrated in top gear during harvest season were all postponed due to the flood incidence. This speaks volume on the deterministic nature of the environment in human societies, implying that there is a limit to the extent human cultures can control the forces of the environment. The best an individual or a community could do is to move out of the way of the forces of the environment to have its way after which they can return to have a share of their post-flood experience. Nunn, (2003) has observed that drawing the above connection has created considerable unease in some quarters, such a connection between environmental change and cultural transformation smacks of environmental determinism, which many modern geographers and others were trained to suppose was languishing in the dustbin of discredited theories.

However, historical records and ethnography provide rich information on actual human response to climatic fluctuation (Erickson 1999: 641). Reactionary activities of non-flood victims who lived in higher planes in Nigeria were to send donations of food, money, clothing, beddings, drugs etc. to victims. Voluntary organizations, institutions like churches, schools and individuals sent in their alms. Federal and state governments made responsive and responsible efforts to ameliorate the plight of the flood victims while the rains lasted. Olalekan, (2012), reported that the magnitude of the flood attracted the Federal government, where President Jonathan observed that '25% of Nigerians were displaced and made immediate provision of a



total of N17.6 billion in direct financial assistance to the affected States' categorized into four based on degree of severity as follows:

**Category A:** Oyo, Kogi, Benue, Plateau, Adamawa, Delta, Bayelsa and Anambra.

**Category B:** Jigawa, Kano, Bauchi, Kaduna, Niger, Nasarawa, Taraba, Cross-River, Edo, Lagos and Imo.

**Category C:** Kwara, Katsina, Gombe, Ogun, Ondo, Ebonyi, Abia and Rivers.

**Category D:** Sokoto, Kebbi, Zamfara, Yobe, Enugu, Ekiti, Osun, Akwa-Ibom, Borno and FCT and some federal government agencies responsible for disaster management (Nigeria-Rising, 2012).

All Category A States received N500m each, Category B States N400m each, Category C States N300m each, and Category D States N250m each'. For the first time in the history of the nation some major roads (Lokoja-Abuja highway) and bridges used by travelers to crisscross the country from the south to the northern parts of Nigeria was blocked by the Federal Roads Safety Commission (FRSC). This reflects that during the flood, environmental factors seem to have detected the pace for human culture and it also shaped and reshaped human behavior

#### **Post-flood conditions in Agadama community:**

After the flood, members of the community returned to their houses, while those whose houses were built with mud could not return immediately because most mud houses collapsed. This class of people squatted with friends and relatives, while they embarked on quick repairs of their collapsed mud houses. On the other hand, Agadama local economy revolves round agriculture but the flood distorted most farm activities. For instance, before the flood the people had the culture of preserving cassava stems and seedlings on raised platforms constructed with forked sticks, but all these reserves were lost during the flood as they were all washed away. Coombes and Barber, (2005: 306) citing Boserup (1965 1981; cf. Morrison 1996) "advanced the idea that environmental stress could act as a trigger for socio-cultural developments". The flood incidence in Nigeria indeed triggered new developments in most of the flooded communities. For instance, after the flood, women from Agadama community travelled to distant lands searching for cassava stems and seeds to buy. A respondent observed that "it is not all cassava stems they buy, the women are cautious not to buy cassava stems from uplands, they ensured they bought stems that are similar/adaptable to water logged terrains/environments" (Personal interview 30/12/2012). This researcher witnessed the return of one of the trucks filled with cassava stems with women sitting on top, people rushed out of their homes to celebrate the purchase of cassava into the community. Another respondent also noted that "hardship is now the bane of the society, the money used in buying stems and seedlings would have been used for other things" (Pers. Interview 28/12/2012). One begins to wonder why a slight change in the environment could lead to almost a complete collapse of a community's mode of subsistence. Coombes and Berber, (2005) argued that 'effects of these changes should be more apparent in marginal communities, where slight environmental changes would have a major impact on a population's subsistence base'. This argument also raises the question of surplus production; Agadama community is known for its surplus horticulture and as such should have reserves to fall back to after situations of a widespread disaster. What then happened to those surpluses? They were actually washed away by the flood and this also brings to fore, the need for governments to construct silos in rural areas and marginal communities, for the conservation/preservation of surplus farm produce in anticipation for the next planting seasons or as a reserve for unforeseen natural disasters like floods.

Socio-economically, respondents report of severe economic crunch as there are no cash in circulation. This has steered residents into adopting the culture of poverty like borrowing, begging, squatting in congested houses, among others. For instance, little girls of about 10-12 years old now keep male friends since their parents cannot provide basic necessities of life for them. Post flood conditions has also increased crimes like stealing, killing, fighting, and struggles over scarce resources in the community. This researcher observed that the socio-cultural activities like marriage, burial ceremonies and annual cultural festivals that were postponed due to the flood were now celebrated in top gear though in low key, and very late in December 2012. This reflects that nature can go long way to alter a people's culture especially where these natural forces are beyond human control. This study agrees with Coombes and Barber (2005: 308) that, "one may expect to see four distinct types of social response as a result of environmental changes:

1. Total collapse of habitation in marginal regions, due to deterioration in the subsistence base leaving local population below minimum sustainable levels.
2. Partial decline of habitation in marginal regions, due to deterioration in the subsistence base leaving local population above maximum sustainable levels.
3. Sudden changes in modes of agricultural production, reflecting Boserupian advances in technological and socioeconomic complexity.
4. Widespread collapse of social organization, in both core and peripheral regions, reflecting complexity cascading within a self-organizing system"

A respondent observed that the flood caused social, psychological and environmental damages in the community. Thus, social responses in Agadama community were not just sudden in changing the modes of agricultural activities; it also led to a widespread collapse of socio-cultural practices in the community. Particularly evident was the partial collapse of the complex horticulture existing in Agadama community. From the above ethnographic accounts of the flood incidence in Agadama, the study reveals that human-environment relationship is an intricate and complex one, as the control of human culture over the environment seems to have assumed a passive posture during the flood

## **Discussion**

From the above, some anthropological extrapolations could be made, the study brings to fore the fact that flexibility of a community's culture could be an advantage for easy readjustment/adaptation during sudden or impromptu climatic and environmental changes. Suzanne, (2006:5 citing Torrence and Grattan, 2002) observed that "In terms of anthropological studies, some pronounced cultural changes have been connected to disasters encompassing large areas.

The degree of rigidity and flexibility of the cultures of various Nigerian communities goes a long way in determining how fast or slow their responses could be, in terms of adaptability and coping strategies to uncontrollable natural/environmental hazards. (ibid: 5) further stressed that "A flexible society and/or ecosystem will be able to adapt faster to environmental changes and thus suffer less". There is also a tendency for a future collapse of the existing Agadama complex horticulture either due to the incessant pastoral-agrarian conflicts or due to environmental/climatic fluctuations especially where Agadama is considered a marginal community.

However, Coombes and Barber, (2005) have argued that “if causality is to be demonstrated, one must show that environmental change was the critical factor in the culture's collapse”. “Such effects should be most apparent in marginal communities, where slight environmental changes would have a major impact on a population's subsistence base” (ibid: 305) as well as on their health. We therefore agree with Judkins, et al. (2008: 27) that ‘decades of research have demonstrated that human- environment relations are a complex of intertwining influences and limitations that resists single factor causal correlations. Theoretical approaches that recognize the influence of each of these axes on human-environment relation promises to be more acceptable as an explanatory framework’.

### **Conclusion**

We have been able to x-ray the pre-flood, flood and post-flood conditions and experiences in one of the many flooded communities in the 2012 Nigerian flood incidence. It revealed the changes in social, economic and cultural activities of the Agadama community. The study also brought to fore the health implication of the flood to a community that lacked basic primary health care (PHC) facilities, personnel and services. It highlighted the fact that, the flexibility of the cultures of the Agadama community was an added advantage that enabled the people to cope during the flood. We have also stressed that current environmental realities still lend credence to the tenability of the theory of environmental determinism, but this study has advocated for the adoption of the idea that both culture and environment wield some level of influence on each other, rather than clinging to a single factor perspective in the relationship between humans and environments.

### **Recommendations**

It is clear that the people were taken unawares by the flood; the study suggest that the meteorologists ensure that their professional advise are translated to local languages like Uhrobo so that rural residents in Nigeria can be pre-informed on the degree of impact of any natural disaster. Rural residents should try and transform their houses from mud houses to concrete/block houses, since the study revealed that people living in mud houses suffered most during the flood. Though, the effective adherence to this recommendation is to a large extent dependent on the general standard of living of the rural populace and the economy of Nigeria.

Similarly, since the Agadama community understands that their environment is a coastal one and often water logged, it is recommended that before a building is constructed, the land should be properly surveyed and appropriate or higher DPC (Down Proof Course) should be erected at the foundation to keep flood from easily entering their houses. Individuals should make use of the professional expertise given by architects, must not build on water ways/drainages and they should make sure water channels are cleared off debris/wastes. People in coastal areas with culture of preserving cassava stems and seedlings in their farms should no longer do so but bring them home for proper preservation under their watch.

On the part of government, they should provide refugee camps close to the people as the Agadama residents complained the one at Oharisi primary school at Ughelli north LGA was too far from the community as there was no way to convey the aged, weak and sick ones to the camp. Also a local government area as large as Ughelli north needed more than just one refugee camp. The government should also embark on environmental impact assessment (EIA) after a major natural disaster like the flood in 2012. In fact, it is worthy to note that up to the time of writing this report, no government intervention has reached the Agadama community.

One common activity in coastal states in Nigeria is the practice of land reclamation and sand-filling of swampy areas for the construction of buildings, as the people attributed the flood to this practice. Thus, land reclamation and sand-filling must be avoided by governments and individuals. Government should ensure that dams are properly managed to avoid over-flowing their bounds. Government should also embark on tree-planting where necessary to check flood in coastal environments. Government should dredge the river Niger and Benue and other prominent rivers in Nigeria in order to reduce the impact flooding in the country.

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