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Climate Change and Menace of Floods in Nigerian Cities: Socio-economic Implications

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ABSTRACT

Apart from traffic congestion, flood is the most common serious physical urban problem in most Nigerian cities resulted from high river levels, concentrations of overland flow following heavy rainfall, limited capacity of drainage systems and blockage of waterways and drainage channels. Though precise statistics are not available regarding the losses sustained by the urban dwellers, available records show that more than one million people have been rendered homeless across the country while properties worth billion of Naira have been destroyed. In spite of the step-up efforts at controlling flood hazards in Nigerian cities, the frequency and magnitude of the occurrence have been more than doubled in recent years. The severity and dimensions of the occurrence therefore, call for attention to ensure sustainable urban environment. This paper examines flood events in Nigeria and its associated hazards. It analyses the relief measures from both government and private individuals. Data for the study emanated from the administrative records of National Emergency Agency, Abuja and the records of flood events in Nigerian Newspapers. The study discovered that floods had forced thousands of people from their homes while more than a thousand people lost their lives to flooding at different time and locations of the federation. The study also provided synthesis of information on government relief to the victims through NEMA.

Key words: Floods; hazards; urban environment; socio-economic impacts, Nigeria

Introduction

Flood is an overflowing or irruption of a great body of water over land not usually submerged (Oxford English Dictionary). It is an extreme weather event naturally caused by rising global temperature which results in heavy downpour, thermal expansion of the ocean and glacier melt, which in turn result in rise in sea level, thereby causing salt water to inundate coastal lands. Flooding is the most common of all environmental hazards and it regularly claims over 20,000 lives per year and adversely affects around 75 million people world-wide (Smith, 1996).

Across the globe, floods have posed tremendous danger to people's lives and properties. Floods cause about one third of all deaths, one third of all injuries and one third of all damage from natural disasters (Askew, 1999). Since 1900, floods have claimed more than 10,000 lives in the United States alone. In China, some of the world's most disastrous floods have been caused by the unstable Huang He (Yellow River). In 1970, 1985 and 1991, hundreds of thousands of people in Bangladesh were killed when the combination of high tides and a tropical cyclone storm surge caused widespread flooding of the low-lying delta of the Ganges and Brahmaputra rivers (Pearce and Leib, 2006).

In Nigeria, the pattern is similar with the rest of world. Excluding droughts, almost 90% of damages relating to natural disasters are caused directly or indirectly by floods. Record shows that more than two hundred people have lost their lives to flooding while hundred of thousands have been rendered homeless and

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properties worth billions of Naira have been destroyed as a result of devastating floods across the country (Abugu, 1988; Oluduro, 1988; Sunday Times, 1988; Oyo Ministry of Information, 1989; Daily Sketch, 1997; Fabowale, 1997; Opalana, 2005). Flooding in various parts of Nigeria have forced thousands of people from their homes, destroyed businesses, polluted water resources and increased the risk of diseases (Baiye, 1988; Akinyemi, 1990; Nwaubani, 1991; Edward-Adebiyi, 1997).

Floods occur in Nigeria in three main forms, viz; coastal flooding, river flooding and urban flooding (Oriola, 1994; Okoduwa, 1999; Folorunsho and Awosika 2001; Ologunorisa, 2004). Coastal flooding occurs in the low-lying belt of mangrove and fresh water swamps along the coast. River flooding occurs in the flood plains of the larger rivers, while sudden, short-lived flash floods are associated with rivers in the inland areas where sudden heavy rains can change them into destructive torrents within a short period. Urban flooding on the other hand occurs in towns, on flat or low-lying terrain especially where little or no provision has been made for surface drainage, or where existing drainage has been blocked with municipal waste, refuse and eroded soil sediments.

Flood scenarios have been reported by many studies. Most of these researches examined extensively the causal factors among which are high river levels, concentrations of overland flow following heavy rainfall, limited capacity of drainage systems and blockage of waterways and drainage channels (Oriola, 1994; Folorunsho and Awosika 2001; Ologunorisa, 2004;). However, some problems can be isolated to a single cause but more often it is a combination of factors which causes the worst flooding (News release, 2007, www.defra.gov.uk). Studies also reported the associated hazards following the occurrence of flooding and have tried to proffer solutions to the problem of flooding (Abams, 1995; Bogdani, and Selenica, 1997; Hogue, *et al*., 1997; Durotoye, 1999; Awosika, *et al*., 2000; Folorunsho and Awosika 2001).

But in spite of the recommendations of the researchers and government efforts at mitigating the menace, urban flooding has become perenial event in most Nigeraian cities. This is because the frequency and magnitude of the occurrence have more than double in recent times. This is due to the fact that as urban population keeps on increasing, more and more people are living in flood-prone areas, such as areas along river beds and floodplains, which consequently increase the damage and death toll. Besides, experts have predicted that climate change will make the problem of urban flooding more serious because of the increased likelihood of more intense and frequent rain storms (ActionAid, 2006; News release, 2007, www.defra.gov.uk). According to the UK Climate Impacts Programme, rainfall intensity will increase in the future, perhaps by as much as 20% by the end of the century (www.ukcip.org.uk/scenarios).

Since climate change cannot be stopped, a lot can be done to adapt to it. In recent times the federal government of Nigeria established National Emergency Agency (NEMA) to respond to emergency cases in terms of response, relief and mitigation to victims of disaster such as, fire, flooding, storm, accident, among others. The activities of NEMA so far especially to flood victims and to the urban slum dwellers in terms of relief and mitigation worth assessment since literature are sparse on this issue. Though precise statistics are not available regarding the losses sustained by the urban dwellers, available records show that more than one million people have been rendered homeless across the country while properties worth billion of Naira have been destroyed. But knowledge is still sparse in the professional literature on the amount spent by government to disaster victims especially flood disasters victims, though editorial comment in the media regularly asserts that government expends billions of Naira to disaster victims. Besides, little is known about the number of flood victims in different states of the federation. This paper therefore, explores the activities of NEMA as regards distribution of emergency relief materials to victims of natural disaster especially flood in Nigeria. The paper also, analyses flood events and its associated hazards in the country.

2.0 National Emergency Management Agency

The National Emergency Management Agency (NEMA) was established through Decree 12 of 1999. By this decree, the Federal Government vested the authority for managing disasters in Nigeria in NEMA. According to this law, the Agency shall

- formulate policy on all activities relating to disaster management in Nigeria and coordinate the plans and programmes for efficient and effective response to disasters at national level.
- monitor the state of preparedness of all organizations or agencies which may contribute to disaster management in Nigeria.
- collate data from relevant agencies so as to enhance forecasting, planning and field operations of disaster management.
- educate and inform the public on disaster prevention and control measures.
- coordinate and facilitate the provision of necessary resources for Search and Rescue and other types of disaster curtailment activities in response to distress calls.

- coordinate the activities of all voluntary organizations engaged in emergency relief operations in any part of the Federation.
- receive financial and technical aid from international organizations and non-governmental agencies for the purpose of disaster management in the country.
- collect emergency relief supply from local and foreign sources and from international and non-governmental agencies
- distribute emergency relief materials to victims of natural or other disasters and assist in the rehabilitation of the victims, where necessary
- liaise with State Emergency management Committees to assess and monitor, where necessary, the distribution of relief materials to disaster victims.

It is obvious that the success of NEMA will be judged by the efforts it puts in place to reduce loss of life and property, minimize suffering and disruption caused by disasters; prepare the nation to address the consequences of disasters; serve as the Nation's portal for emergency management information and expertise. Nonetheless, since the promulgation of the decree, NEMA has been very active in its activities and has proposed a National Contingency Plan for Disaster Response in order to put national response to disasters on a sound footing. The range of activities of the Agency includes search and rescue; property protection; securing law and order; mass care response; restoring the disaster affected area (recovery); and reducing vulnerability to future disasters.

2.0 The Study Area (Nigeria)

Nigeria is located between latitude 4ºN to 14ºN; and longitude 3ºE to 15ºE. It has a land extent of about 923,769 km2; a north-south length of about 1,450-km and a west-east breadth of about 800 km. It is a country with diverse biophysical characteristics ethnic nationalities, agro-ecological zones and socio-economy. Abuja is the capital and Lagos is the largest city and main commercial centre. The country has 36 states with 774 LGAs.

Nigeria's climate is characterized by strong latitudinal zones which become progressively drier as one moves northwards from the coast. Rainfall is the key climatic variable and there is a marked difference between wet and dry seasons in most areas. The annual rainfall total decreases from over 3,800 mm at Forcados on the coast to under 650 mm at Maiduguri in the extreme north-east of the country. The length of the rainy season also shows decrease from nearly 12 months in the south to less than 5 months in the north.Nigeria has a climate, which is characterized, by relatively high temperatures throughout the year. The average annual maximum varies from 35ºC in the north to 31ºC in the south, the average annual minimum from 23ºC in the south to 18ºC in the north. On the Jos plateau and the eastern highlands, altitude makes for relatively lower temperatures, with the maximum no more than 28ºC and the minimum sometimes as low as 14ºC. The effect of these high temperatures is high evapo-transpiration and this eventually brings about water shortage for arable cropping.

Nigeria is the most populous country in Africa. At the census of November 1991, Nigeria had 88,514,501 inhabitants and a population density of 95.8 inhabitants per sq. km. The average annual growth rate between 1963 and 1991 is 1.7%. According to 2006 census figure, Nigeria has the population of 140 million people. The major hazards being experienced in Nigeria includes land degradation, flooding, erosion, deforestation, desertification and climatic drought. Flooding in Nigeria has been due to natural and artificial factors. Flooding has been experienced in the Niger through Benue basin and Sokoto-basin in the flooding years of 1987, 1991 and 1994 and this affected agricultural landuse to a great extent. On the other hand the ocean inflow in Victoria island and that of Ibadan urban areas by Ogunpa stream have affected urban areas. Flooding has been controlled by the construction of dams to store the excess water. The demolition of structures along the stream/river banks has also been used and these have been highly effective.

3.0 Data used for the study

Data for this study emanated from the administrative records of National Emergency Agency, Abuja (NEMA) and flood events recorded in Nigerian Newspaper such as, Sunday Times, Daily Times, Daily Sketch, and Nigerian Tribune. The data collected from NEMA include the date of flood events in Nigeria, affected communities, number of people affected, associated hazards, relief materials distributed to victims, cost of relief materials, among others. The information is meant to establish the occurrence of flooding in Nigeria over time and evaluate government efforts at mitigating the menace and save the urban slum dwellers especially.

The data collected from the Newspapers were to complement the record of NEMA. Information such as, date of occurrence of flooding, name of communities affected, number of life lost, items damaged by flooding, among others.

Results and Discussion

4.1 Flood Events and Associated Hazards in Nigeria

In the last three decades, the impacts of flooding have increasingly assumed from significant to threatening proportions, resulting in loss of lives and properties. Though detailed statistics are not available regarding the losses sustained by the urban dwellers and flood victims, it is obvious from the available records that irreparable havocs have been sustained by the citizen of Nigeria due to what has become perennial natural disaster in our cities. Apart from houses (such ones that are built with mud brick, traditional building materials of the area and those not built with modern flood resistant structure) that collapse by flooding, schools buildings and bridges sometimes collapse as well. Markets places and farmlands are submerged for weeks and sometimes are washed away.

Table 1 vividly reveals that flood has become a major problem in Nigerian cities when the first flood hit Ibadan, the headquarters of old western region, Nigeria (now the capital of Oyo State) in 1948. Subsequently, serious flood disasters have occurred in Ibadan in 1963, 1978, April 30, 1980, 1985, 1987 and 1990. Lagos recorded the first flood in early 1970s and till date, floods have become perennial event in the state. Table 1 also traced the inception of momentous floods in Bauchi, Borno, Kano, and Jigawa to 1988 while Niger, Bayelsa and Delta first experienced hazardous floods in 1999. Since the first flood had been recorded in these states, the problem of flood has continued to pose serious threat to human existence not only in those states but other states in the country.

From the Table, devastating floods had hit more than twenty one states of the federation with Borno, Jigawa, Kano, Lagos, Niger, Oyo, Taraba and Yobe States recorded the highest tolls of casualties. It is obvious that more than four thousand houses in over ninety four (94) communities were washed away by floods and rainstorms when more than one million (1 million) people were rendered homeless. The Table also shows an estimate of over one thousand five hundred and forty nine (1,549) people loosing their lives to flooding. The report of Sunday Times, August 21, 1988 however, revealed that among those that were mostly affected or killed by floods were children and women.

The devastating effect of floods was not limited to houses and people. Many farmlands both arable and agro-forestry were swept away when schools and market places were submerged for weeks. The record in Table 1 shows that some animals lost their lives to flooding when many bridges collapsed and electric poles destroyed.

The report of Nigerian Red Cross Society recorded in Table 1 reveals that as a result of eight hours of heavy rains that occurred on 7 August, 2005, the heaviest and worst floods in 40 years occurred in Jalingo, the state capital of Taraba (north-east of Nigeria, bordering Cameroon), killing over 100 people and displacing more than 50,000 others. During the incidence, hundreds of people on the River Jalingo Bridge linking the state of Taraba with other parts of the country were seriously affected when the bridge caved in, and 80 of them were swept away by the powerful currents. Among those feared dead was an assistant commissioner of police who had gone to disperse the crowds from the bridge. The policeman hung on the bridge's rails for over three hours waiting for assistance, later dropped inside the volume and speeds of the raging waters and was swept away. Other victims were passengers who were being conveyed across the bridge. The most affected areas are Mafindi, Nunkai, Magami, Lamurde, Mallam Gabdo and Sabon-gari.

Previous studies also reported that communications and traffic are interrupted while many land areas are inundated, and industrial plants and commercial establishment are paralysed during floods. Besides, untold hardship is experienced, especially by the most vulnerable groups (women and school children) whenever there is flood disaster (Oluduro, 1988; Durotoye, 1999; Folorunsho and Awosika, 2001). The recent study of flooding in Lagos reported by ActionAid, (2006) and Durotoye, (1999) reveal that more than 4,000 people were rendered homeless; while more than 200 buildings were flooded and destroyed in Kosofe and Ikorodu districts alone. This revelation suggests to mind that if the data of flood disasters in Nigeria were to be available, human mind would not be able to conceive the devastated effect of flooding on man.

4.2 Relief Material for the Victims

Table 2 shows that in twenty states of the federation, relief materials were distributed. These material ranges from roofing sheet, which are to be used to replace the removed roof by the rainstorms. In one fiscal

year, the country through National Emergency Agency (NEMA) supplied sixteen thousand one hundred (16,100) roofing sheets to the victims of floods, which cost the country the sum of one hundred and fifty five million seven hundred and seventy thousand Naira (155,770,000.00) (Table 3).

Plate 1: People struggle to cross a flooded section of towm
Source: Nigerian Red Cross Society- 2005 http://www.ifrc.org/where/country/check.asp?countryid=128

Plate 2: Vehicles submerged in flood
Source: Katy Pearce and Deborah Leib http://208.134.241.150/breaking_weather/encyclopedia/flood/miss 93. html

During the floods occurrence, many houses were submerged for several weeks while some were destroyed (Table 1). Part of the relief the government provided to the victims includes bags of cement, which amounted to nineteen thousand one hundred (19,100) in the same fiscal year (Table 2). Other information provided in Table 3 shows that twenty six thousand three hundred (26,300) bags of cement were given to flood victims, which cost twenty eight million, nine hundred and thirty thousand Naira (28,930,000.00).

As part of government efforts to bringing comfort to its citizenry, woods of different sizes and nails for the roofing of houses blown away by rainstorms were supplied. As revealed in Table 3, sixty nine thousand pieces of woods of different sizes, which amounted to twenty six million, six hundred and twelve thousand and five hundred (26,612,500:00) Naira were provided to flood victims by the government of Nigeria.

Table 1: Flood Disasters and Associated Hazards in Nigerian cities

S/ no	State	LGA/Community	No. of community	Disaster	Date/Year	Associated Hazards	No. of people affected	Lives lost
1	Abia	Arochukwu		Rainstorm	Jul-01	Houses	500	Nil
2.	Adamawa	Toungo	1	Flood	April 2001	Houses & Farmlands destroyed	500	Nil
3.	Akwa-Ibom	Uyo, Ikot, Okorotte	3	Flood & Rainstorm	March 2001	367 houses washed away	4,000	Nil
4.	Bauchi	*** Misau	1	Flood	Aug. 1988	750 houses washed away, farmlands destroyed	Not Available	4
5.	Bayelsa	Tombia, Ekpetem, Kauna, Igbedi, Ogu, Irofami	6	Flood	1999 & March 2001	Houses, Schools, Markets & Farmlands submerged	In 1999 2/3 of the population, 300	Nil
6.	Borno	***Fika, Potiskum & Ngadda village	3	Flood	Aug. 1988; June/July 2001	167 Houses washed away, Farmlands destroyed	Not Available	26
7.	Delta	Ndokwa west, Isoko south, Isoko north, Asaba	4	Flood & Rainstorm	1999, March /April 2001	Houses, Schools, Markets & Farmlands submerged for weeks	In 1999, half of the population, 554	Nil
8.	Edo	Owan east, Owan west, Estsako west	3	Flood & Rainstorm	March 2001	560 houses destroyed	820	Nil
9.	Ekiti	Ekiti west, Ido-Osi, Ise, Ikere, Ilemeje, Ikole, Moba, Oye		Flood & Rainstorm	April 2001	Public Schools & 890 houses destroyed	2100	Nil
10.	Imo	Orsu	7	Rain& Windstorm	17/4/2001	1000 houses, 150 electric poles & 40,000 oil palm destroyed	Over 1000 displaced	Nil
11.	Jigawa	Jahun, Kiyawa, Auyo, Miga, Taura, Birni	6	Flood & Windstorm	*** 1988; March, April & August 2001	Houses, Farmlands & Animals destroyed	35,500 displaced in 1988; 450,150 displaced in 2001	*** 1180 died in 1988; 6 in 2001
12.	Kano	Bebeji, Kura, Kano, Bichi west, Wudil, Garko, Takai, Gaya, Albasu	9	Flood & Windstorm	***1988; 2001	Schools, Houses, Farmlands & Animals destroyed	300,000 displaced in 1988, 20,445 in 2001	43 died in 1988; 27 in 2001
13.	Kogi	Zango, Katsina ala, Baure, Funtua	4	Flood & Rainstorm	March, May 2001	Houses, Schools &Farmlands destroyed	1500 displaced	1
14.	*Lagos	Ikeja, Oshodi, Mushin, Yaba, Agege, Lagos Island, Festac	7	Flood	Early 1970s till Date	Buildings collapsed, Markets submerged, Properties destroyed	Over 300,000 affected	2
15.	Niger			Flood & Rainstorm	1999 & 2000	Houses, Schools, Animals & Farmlands destroyed	200,000 displaced	Nil
16.	Ondo	Owo	1	Rainstorm	April 2001	Houses & Schools destroyed	800 affected	Nil
17.	Osun	Ifelodun, Ilesa west, Ilesa east, Boripe, Ife north, Ife central, Obokun	7	Rainstorm	April 2001	Houses & Schools destroyed	1700 affected	Nil
18.	**Oyo	Ibadan	1	Ogunpa flood	1948, 1963, 1978, April 30, 1980, 1985, 1987. & 1990	500 Houses demolished, Properties destroyed & Bridges collapsed	50,000 affected	200 died in 1980
19	**** Taraba	Jalingo (Mafindi, Nunkai, Magami, Lamurde, Mallam Gabdo and Sabon-gari).	7	Flood	7 August, 2005	80 houses totally swept off. 410 houses extensively destroyed.	more than 50,000 displaced	over 100 people killed
20.	Sokoto	Rabah, Wamakko, Isa, Wumo, Ture, Silame, Gada, Yabo, Gwadabawa, Sokoto, Goronyo north, S/Bimi, Gambuwal, Sagari	14	Flood, Quela Birds, Fire & Windstorm	July 2001	Houses and Farmlands destroyed	16,000 affected	Nil

Table 1: Continue

21.	Yobe	Potiskum, Damaturu, Jakusko, Gedam, Turmawa, Busari, Nguru	7	Flood, Fire & Drought	April & Sept. 2001	Houses & Farmlands submerged, Houses Razed, Animals killed	100,000 affected	29
22.	Zamfara	Talata, Mafara, Gusau	3	Flood	July 2001	Building submerged, Farmlands destroyed, Properties damaged	12,398 affected	1
	Summary		More than 94 commun-ities affected	-Flood -Rainstorm -Windstorm	-Recorded flood from 1948-date	-Over 4,724 houses destroyed -School buildings collapsed -Many farmlands swept away -Electric poles destroyed -Bridges collapsed -Market places submerged for weeks	Over 1,547, 767 people displaced	Over 1,549 died

Author's Field Survey, 2007
Source: National Emergency Agency (NEMA), Abuja
* Nigerian Tribune, Tuesday, June 21, 2005, p. 24
** Daily Sketch, Friday, April 28, 1989, p. 7
*** Sunday Times, August 21, 1988 p. 9
**** Nigerian Red Cross Society, 2005

Table 2: Relief Material for the Victims

S/no	State	Roofing Sheet	Cement	Planks 2*2*12	Planks 2*4*12	Mattress	Nails	Roofing nails	Rice	Paddy rice	Beans	Millet	Maize
1.	Adamawa	800	1200	-----	4000	200	100	200	200	----	----	300	200
2.	Akwa-Ibom	1000	1200	2000	2000	200	100	100	---	---	---	---	---
3.	Bayelsa	600	600	1000	2000	1000	---	50	150	---	100	---	---
4.	Borno					NO RECORD							
5.	Delta	1000	600	---	2000	200	100	100	400	---	200	---	---
6.	Edo	500	600	---	2000	---	100	100	100	---	100	---	---
7.	Ekiti	1500	1800	---	4000	---	150	150	500	---	300	---	---
8.	Imo	1000	1200	2000	2000	200	---	100	400	---	200	---	---
9.	Jigawa	1500	1800	1000	2000	200	500	400	600	600	300	600	600
10.	Kano	1500	1800	1000	2000	200	500	400	1050	1050	300	1050	1050
11.	Kogi	500	500	---	2000	200	50	---	400	---	150	300	300
12.	Ondo	2100	2400	2000	4000	200	230	250	---	---	---	---	---
13.	Osun	1600	1800	---	4000	200	100	100	600	---	450	---	450
14.	Oyo					NO RECORD							
15.	Niger					NO RECORD							
16.	Lagos					NO RECORD							
17.	Sokoto	500	600	2000	2000	200	200	50	50	---	300	150	300
18.	Yobe	500	1200	4000	---	200	100	100	300	---	---	300	300
19.	Zamfara	1500	1800	1000	2000	200	500	500	600	---	---	600	600
	Total	16,100	19,100	16,000	36,000	3,400	2,730	2,600	5,350	1,650	2,400	3,300	4,100

Author's Field Survey, 2007
Source: National Emergency Agency (NEMA), Abuja

Table 3: Amount Spent on Relief Materials

S/no	Description of items	Total no.	Unit price (N)	Cost of items in Naira
1	Roofing sheets	21,050	7,400	155,770,000.00
2	Cement	26,300	1,100	28,930,000.00
3	2 x 2 x 12 planks	20,500	340	6,970,000.00
4	2 x 4 x 12 planks	48,500	405	19,642,500.00
5	Mattresses	4,500	5,500	24,750,000.00
6	Packets of zinc nails	12,180	900	11,862,000.00
7	Bags of 3" nails	2,950	3,200	9,440,000.00
8	Parboiled rice	11,250	4,600	51,750,000.00
9	Paddy rice	5300	6,500	34,450,000.00
10	Beans	3950	9,000	35,550,000.00
11	Millet	4480	6,100	27,328,000.00
12	Maize	7550	6,100	46,055,000.00
13	Guinea corn	7400	6,100	45,140,000.00
14	Insecticides	200	3,240	648,000.00
15	Wax prints	15900	1,500	23,850,000.00
16	Detergents	200 cartons	3,600	720,000.00
17	Blanket	35500	950	33,725,000.00
18	Nylon mats	31000	500	15,500,000.00
19	Plastic buckets	15500	480	7,440,000.00
20	Plastic plates	32000	50	1,600,000.00
21	Plastic cups	39000	50	1,950,000.00
22	Plastic spoons	36000	25	900,000.00
23	Beverages	9600	2,500	24,000,000.00
24	Lanterns	200	1,000	200,000.00

Table 3: Continue

25	Garri	4450	4,800	21,360,000.00
26	Vegetable oil	200	2,800	560,000.00
27	Fishing nets	800	6,000	4,800,000.00
28	Kerosene	10 drums	15,000	150,000.00
29	Loaves of bread	10,000		2,000,000.00
30	Bath towels	9600	500	4,800,000.00
31	Pillows	100	450	45,000.00
32	Assorted drugs	111 cartons		100,000,000.00
	Total	416,281		741,885,500:00

Author's Field Survey, 2007
Source: National Emergency Agency (NEMA), Abuja

Apart from relief to rehabilitate the affected houses, government still provided materials to the individuals affected by flood disaster to replace the damaged properties and losses. The materials range from sleeping materials such as, mattresses, Nylon mats, blankets, pillows, bath towels among others to the household equipments in form of insecticides, plastic buckets, plastic plates, plastic cups, spoons and detergents, with cost implications amounted to eighteen million, two hundred and fifty three thousand (18,253,000:00) Naira (Table 3).

The relief is not only limited to household materials, food was also provided to the victims. The available records in Tables 2 and 3 below show that more than sixty four thousand (64,180) bags of foodstuff of various types like Parboiled rice, Paddy rice, Beans, Millet, Maize, Guinea corn, Beverages, Garri, Vegetable oil and even Loaves of bread were distributed to the victims of flood disasters in nineteen states of the federation in a single fiscal year. This cost government two hundred and eighty eight million, one hundred and nine three thousand (288,193,000) Naira to the victims.

Nigeria experience is not different from the rest of the world. As reported by News release, (2007), flooding from surface water and urban drainage in towns and cities currently costs the national economy of UK £270 million on average each year, according to the Government's own research. But this could increase by up to £15 billion by the 2080s, if action is not taken.

6.0 Conclusion and recommendation

It is evident in the study that floods had forced thousands of people from their homes while more than a thousand people lost their lives to flooding at different time and locations of the federation. The study also provided synthesis of information on government relief to the victims through NEMA. This relief ranges from household materials to food stuff and assorted drugs, which worth millions of Naira. Even though flood has become a perennial occurrence in most communities in Nigeria, Folorunsho and Awosika (2000) in their study provided various controlling measures, which include land use control, demolition and evacuation of illegal structures, enforcement of law against indiscriminate dumping of refuse in the drainage system, mapping of the flood prone area, among others. But scholars opined that these controlling measures can only solve the problems of flooding which are man-induced, and mostly at the hinterlands. But since some parts of Nigeria are situated in low-lying areas, which can be submerged during heavy rains, such areas can adequately be coped with rather than being controlled or mitigated. However, studies could be geared toward flood control measures in low-lying areas.

Flooding is a manifestation of climate change, reducing greenhouse gas emissions is essential to avoiding the worst impacts of climate change, because mitigation alone is not enough. It is instructive to note that adaptation planning can limit the damage caused by climate change, as well as the long-term costs of responding to climate-induced flooding that are expected to increase rapidly in level in the decades to come. Adapting to the impacts of climate change is vital if we are to manage the risks of flooding and coastal erosion. We can't ignore the consequences which is why we need to start adapting now.

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