



FLOODS, CLIMATE CHANGE & COVID-19

An HOMEF Report



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SUMMARY

Although the lockdown brought about by the Covid-19 pandemic restrained humans from carrying out polluting activities, the impacts of climate change remained and intensified in 2020. Flooding stood out as one of the major challenges that confronted Nigerians and citizens of many other African countries. There were serious impacts on food production as farmlands were inundated. The impacts of heavy rainfall attributable to climate change were compounded by poor flood handling infrastructure occasioned by feeble or absent drainage masterplans.

COVID-19 pandemic deepened the challenges brought by flooding. Protocols put in place for avoiding the coronavirus include physical distancing. Displacement and relocation of crowds to shelters such as schools and churches do not permit distancing. The floods also led to the submergence of farmlands and destruction of harvests. Pastoralists lost their herds and fishers who were already restricted from certain places also had their fish farms inundated. Oil sheens on coastlines, rivers and creeks indicated the presence of oil spills whose sources were more difficult to readily identify due to the floods. The floods also impeded distribution of palliatives to displaced or stranded populations.

This report looks at incidents of flooding in 2020. While the focus is Nigeria, the report particularly looks at communities in Bayelsa and the Orashi region in Rivers States all in the Niger Delta. It also includes a personal experience of the impact of the floods in Lagos, Nigeria. The report also takes a look at the impacts of floods in Africa.

The report is issued to contribute to the chronicles of flooding in these days of heightened climate change impacts. It is also hoped that this contribution will help impacted communities see a broader picture of the menace and help government see the need for urgent actions to climate proof our communities and nations.

1.0 INTRODUCTION

According to the Nigeria's National Emergency Management Agency (NEMA), flooding led to 68 deaths in the country in 2020 and "affected" 129,000 persons.¹ Elsewhere in Africa, the UN Office for the coordination of Humanitarian Affairs (OCHA) informed that more than 1,000,000 South Sudanese were affected by flooding between July and November 2020.² Entire communities were submerged, leading to displacement of people from their homes. The flooding was caused by heavy and persistent rainfalls that led to the overflowing of the banks of River Nile and other water bodies in the country.

The year 2019, was one of extreme weather events across the world. Sweltering heat hit much of the world. Raging wildfires were recorded in Brazil, Bolivia, Australia and the United States of America. Massive floods ravaged even cities like Venice, famed to be able to handle floods.

Climate change was implicated in exposing over 33 million Africans (spread across Madagascar, Malawi, Mozambique, Zambia, Zimbabwe, South Sudan, Sudan, Ethiopia, Somalia and Kenya) to food insecurity emergencies. The food situation has been compounded by the erosion of food sovereignty due to the loss of biodiversity. Violent conflicts and poverty add another dimension to the dire situation and raises the number of those vulnerable to over 52 million.³

Southern Africa warmed at two times the global rate and experienced two massive cyclones in March and April leading to a loss of over 1000 lives. Having two cyclones in one season was a record. The intensity and upward reach of the cyclones on the South Eastern coastline also broke the records. Cyclones Idai and Kenneth impacted close to 3 million persons. Some researchers tie the cyclones to the warming of the Indian Ocean. If this is true, we can expect more cyclones as well as the devastation of marine ecosystems in the region.

Floods have the potential to cause overflow of sewage systems in cities and thereby spread disease and reduce the capacity of citizens to withstand the COVID-19.⁴ Power cuts due to flooding can equally reduce the capacity for healthcare delivery – by impeding preservation of essential drugs and running of equipment. The quality of housing stock in poorer communities led to the collapse of such buildings by floods, thus compounding the problems of displaced persons who had no home to return to once the floods receded.

2.0 STORMY FLOOD WATERS IN NIGERIA⁵

By 2019 Nigerians had somehow looked at heavy rainfall as normal. However, when the first major rains began to fall that year, it appeared as though they were not expected. Lying mostly in the tropical belt, although the nation experiences distinct dry and wet seasons, the reality is that no month passes by without rainfall in some areas. Despite this reality, not expecting a measure of rainfall every month has become a normal situation for coastal cities such as Calabar, Lagos and Port Harcourt. This lack of expectation is not built on facts of history, but on the lack of attention to reality. In 2019, Port Harcourt experienced its second heavy rainfall by the 21st of January. When the first heavy rainfall occurred in Lagos on 20 January 2019, it was celebration time for some and a tale of woes for many. Some Lagos residents were happily drenched by the downpour while others got trapped in traffic gridlock of the type that floods precipitate in that city.

Flooding in Lagos says a lot about the climate readiness of Nigerian cities. As the economic capital of Nigeria and as an emerging “mega city,” it might be expected that more investments would be made in the direction of making the city climate change proof. Residents of Lagos keep suffering and smiling, and they literally take the storms as they come. When floods overran the city in 2017, some residents went kayaking and even fishing on the streets with even a crocodile being caught in the floodwater.

Flood disasters have become regular occurrences in Nigeria and floods along the River Benue and River Niger have become national nightmares. The floods of 2012 led to a reported damage worth up to 2.6 trillion Naira, killed 363 persons and displaced over 2 million others. That flood was caused by a combination of rainfall and release of water from the dams along the two river systems, especially from Lagdo Dam in Cameroon. A whopping 32 out of 36 States of the nation were affected, with 24 affected severely. That flood was followed by a flurry of activities to get relief to citizens whose homes and farmlands were submerged. Some analysts posit that disaster entrepreneurs made a killing from the relief efforts while some victims waited in vain for succour. That too, is increasingly taken as normal.

The floods experienced in 2018 killed over 100 persons and pushed many others into internally displaced persons (IDPs) camps. The National Emergency Management Agency (NEMA) declared a national disaster in four states – Kogi, Niger, Anambra and Delta. Before the floods came, the Nigeria Hydrological Agency (NHSA) in its flood outlook⁶ released in May 2018 projected that Sokoto, Niger, Benue, Anambra, Rivers, Bayelsa, Delta, Anambra, Ogun, Osun, Cross River, Kogi and Yobe states faced high risks of river flooding, while Lagos, Bayelsa, Rivers, Delta, and Ondo states could face coastal flooding.

S/N	Year	Impacts of the floods	Details of the impacts
1	2010	<p>About 2 million people and over 5,000 communities in 11 out of 27 LGAs affected; farms and houses washed away; 90,000 hectares, that is, approximately 222,400 acres of farmlands destroyed; 4.5 Billion Naira, (that is, 30 Million USD) worth of food and livestock destroyed in Jigawa State</p> <p>1000 residents displaced in Lagos and Ogun States</p>	<p>Almost half the residents of Jigawa State were displaced by flood resulting from the opening of floodgates of Challawa and Tiga dams in Kano for fear of overflowing due to heavy rains⁷.</p> <p>The flood was caused by heavy rains and worsened by release of water from the Oyan Dam into the Ogun River resulting in the river overflowing its banks⁸.</p>
2	2011	140 people killed and thousands displaced.	140 people killed by floods in Nigeria this year. Over 100 killed in Ibadan in August. 25 killed by floods in Lagos State in July. Heavy flooding in August in Kano, Katsina, Sokoto and Jigawa states displaced tens of thousands ⁹ .
3	2012	37 million people affected, 2.1 million displaced, 363 killed, 18,200 injured and more than 618,000 houses destroyed; transportation routes were severed; and crops destroyed.	<p>The 2012 flood was described as the most devastating in 40 years with Rivers Niger and Benue bursting their banks¹⁰ It affected about 32 states¹¹ out of the 36 in Nigeria.</p> <p>Out of the 32 affected states, about 24 were considered severely affected, among which are: Benue, Kogi, Niger, Anambra, Delta, Edo, Bayelsa, Rivers, Adamawa, Taraba and Plateau¹².</p> <p>The flood last for about four months (July to October). A total of 37 million people were impacted and the disaster displaced 2.3 million¹³, killed 363, left over 18,200 injured and destroyed more than 618,000 houses¹⁴. Economic loss amounted to 16.9 billion USD¹⁵ approximately 2.5 trillion Naira¹⁶</p>
4	2013	Affected more than 81,500 people across Nigeria; Displaced about 8,000 people; damaged more than 6,500 homes and destroyed about 2,217 farmlands.	In 2013 there were series of heavy rains and floods which started in mid-July and affected more than 81,500 people across Nigeria with Zamfara, Kogi, and Bauchi being the most affected. The floods had about 8,000 people displaced and more than 6,500 homes damaged. By 11 September, 19 deaths had been recorded. Nothing less than 2,217 farmlands were destroyed ¹⁷ .

5	2014	10000 persons affected, 15 fatalities, 60 homes (including public facilities) collapsed	Heavy rains that lasted for two days in Ibadan and its environs caused flood that drowned at least 10 persons following the collapse of an improvised bridge in Apete. Five persons including children also died in a submerged church building close to Olodo River. In Calabar, the flood caused the collapse of 60 buildings in Calabar South, Ikot Ansa, Big Qua Town, Ikot Eneo-bong and Ikot Nkebre ¹⁸ .
6	2015	11 states affected, over 100,000 people displaced, 53 deaths	Heavy rains, compounded by the breakdown of dams, have caused floods in 11 states across Nigeria between August and September, 2015. According to the National Orientation Agency (NOA), a total of 53 people died, and 100,420 have been displaced. However, according to the latest round of Displacement Tracking Matrix, the flood displaced over 2.2 million people. The 11 States affected are: Adamawa, Anambra, Benue, Delta, Kaduna, Kebbi, Niger, Ondo, Sokoto, Taraba and Zamfara ¹⁹ .
7	2016	38 fatalities, 92,000 persons displaced	2016 flood was reported to be better managed than previous flooding, thus resulting to less loss ²⁰ . Floodlist reports that the floods resulting from heavy rains caused the death of 18 people in Kano State and destruction of about 5,300 houses in Bebeji, Dawakin Kudu, Kuru Shanono, Bagwai and Garun Mallam districts. About 3 persons died in Bebeji (Kano State). In Abakaliki, Ebonyi State, the flood caused by overflowing of the Iyi-Udele River triggered by heavy rains forced 5000 people out of their homes as hundreds of houses were destroyed ²¹ .
8	2017	250,000 people affected	The flood mostly affected the eastern-central region ²² . In Benue State, flash floods worsened by overflowing river resulting from heavy rains affected 250,000 people in 21 LGAs, destroying crop fields and hundreds of houses ²³ .
9	2018	12 states affected, 2,321,592 people affected, 100,190 houses destroyed, 722,741 people displaced, 199 persons dead, 4,107 injured, 122,653 hectares of agricultural land destroyed. Increase in cases of cholera in some states.	<p>The devastating flood²⁴ in 50 LGAs in 12 States- Adamawa, Anambra, Bayelsa, Benue, Delta, Edo, Kebbi, Kogi, Kwara, Niger, Rivers, and Taraba. After the floods community people did not have a home or businesses to go back to. They continued to seek refuge in schools and other public buildings where conditions are extremely poor.</p> <p>Fear of health outbreaks including malaria, cholera, and typhoid remained high as sanitary conditions have deteriorated especially in the temporary shelters²⁵. Several of the flooded states experienced power cut²⁶</p>

10	2019	130,934 people affected, 126 fatalities (including 17 females and 31 children), 45 people injured 48,114 people displaced ²⁷ and 351,236 in need of humanitarian assistance.	According to WANEP NEWS, between April 10 and September 7 2019, fatalities and injured persons were reported in 20 States- Akwalbom, Adama-wa, Abuja, Bauchi, Bayelsa, Benue, Borno, Nassarawa, Sokoto, Delta, Edo, Gombe, Katsina, Kano, Plateau, Niger, Jigawa, Taraba, Kwara and Yobe. More so, several community residents were rendered homeless. Buildings and farmlands were submerged in Kogi, Kaduna, Rivers, Imo, Ondo, Ogun, Oyo, Ekiti, Lagos and Osun States as recorded in WANEP NEWS ²⁸ .
11	2020	320 LGAs in all 36 States affected, 192,594 people affected, over 155 fatalities, 826 people injured, 25,000 people displaced	Heavy rains leading to overflowing of Rivers Benue and Niger caused devastating floods in Kebbi, Kwara, Jigawa, Sokoto and Zamfara States that killed 57 persons, 473 injured and displaced 22,357. Adamawa, Bayelsa, Anambra, Delta, Edo, Rivers, Niger, Kano, Kogi, Jigawa and Delta States were also severely affected by floods. In Bayelsa, 3 deaths were reported ²⁹ . Food security is threatened as farmlands were washed away ³⁰ .

Table: Some significant flooding incidents with reported impacts in Nigeria between 2010 and 2020

According to the Nigerian Hydrological Services Agency flood outlook 2019/2020 report, the 2019/2020 Hydrological Year began in June 2019 with resultant increase in water level and discharge across the river channels in the country. Water Level (WL) downstream the confluence of Rivers Niger and Benue at Lokoja (Kogi State), steadily rose from a minimum of 4.89m corresponding to a discharge of 6,638m³/s on 1st July 2019 to a maximum of 10.99m corresponding to a discharge of 24,800m³/s on 5th November 2019³¹.

Currently, it has gradually risen above the stated figures although the current level of the river cannot be ascertained as the rains are yet to stop.

In June 2020, NiMet predicted that 21 states in Nigeria will be affected by flooding occasioned by heavy rains causing the increase in water level reported by the Nigerian Hydrological Services Agency 2019/2020 flood outlook.

NiMet predicted that the most affected would be states that are on the coastal regions of Nigeria and some others in the Northern parts of the nation. The states mentioned were Lagos, Kogi, Benue, Anambra, Edo, Delta, Bayelsa, Rivers, Ondo, Jigawa, Kano, Kebbi, Sokoto, etc.

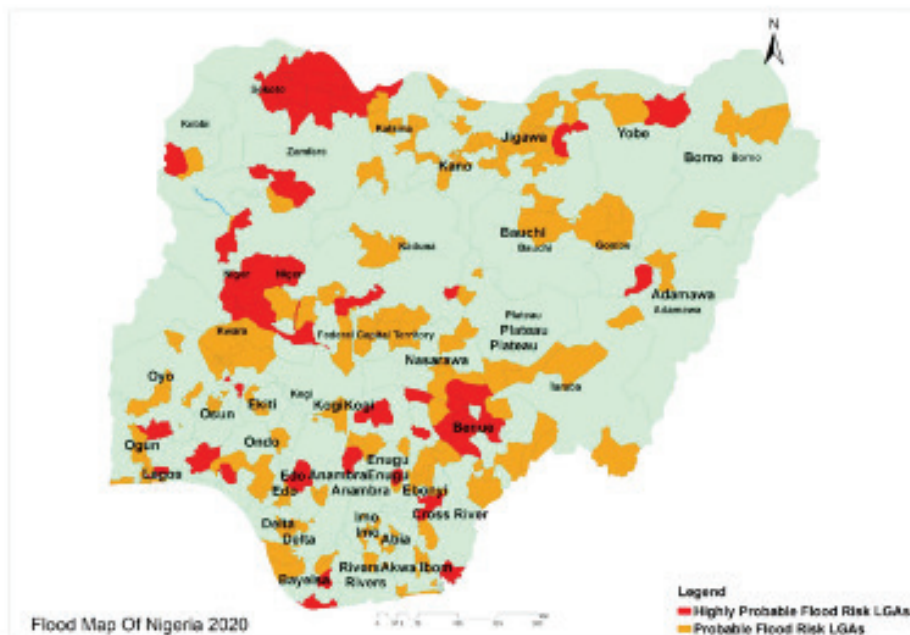


Figure 1: Flood Map of Nigeria 2020³²

Barely few weeks after the predictions, Lagos State experienced severe flooding which occurred in late June 2020. Recent figures (as can be seen in table 1) show that all the States in Nigeria including the FCT experienced floods this year (2020). Devastating floods also occurred in many States in previous years causing damages that affected millions of people.

The 2012 flooding affected about 37million Nigerians, displaced about 2.1 million and caused over 300 deaths. During the flooding that occurred in 2013, about 8000 people were displaced while that of 2015 displaced 100,000. The number of persons affected in 2016 was 92,000 while 722,741 were sacked in 2018. In 2017, the National Emergency Management Agency (NEMA) reported that 250,000 people were affected by flooding. Warnings were routinely issued concerning the floods by the Nigerian Metrological Agency (NiMet) but adequate steps were not taken to contain the harms.

The recent, 2020, flooding in Lagos rendered people homeless with their properties destroyed. Similarly, in Jigawa State, north western Nigeria, 19 people were confirmed dead and over 50,000 houses were destroyed during severe flooding caused by about two weeks of heavy rainfall. The floods in Jigawa affected 15 out of the 27 Local Government Areas in the state. The situation was reportedly worse in Shingurin, a community in Birnin Kudu Local Government Area which was almost totally submerged. Inhabitants of the community were forced to relocate to nearby schools and mosques, while many others became refugees in their own communities. Although Jigawa State has been witnessing such disasters over the years, the 2020 flood was more severe than those experienced in the past.

In Kano State the story was not different. It was reported by News Agency of Nigeria (NAN) that four persons lost their lives after heavy rainfall and flooding in Kano State in northern Nigeria. This was confirmed by the Kano State Emergency Management Agency (SEMA). The worst affected area in Kano was Danbatta where around 5,000 houses were destroyed and two people died. In Rogo, also situated in Danbatta, about 200 houses were destroyed and two other fatalities reported.



Figure 2: Kano State map showing flood affected communities³³

In central Nigeria, the confluence State, Kogi had a similar story. Between August and September, 2020 the state experienced heavy rainfalls resulting in the overflowing of the Niger River and subsequent flooding. Over 50,000 people were displaced and 66 communities in and outside Lokoja, the Kogi State capital, situated at the confluence of the Niger and Benue Rivers were impacted by the flood. Some of the community members found temporary accommodation in school buildings and other public places of worship while others slept on roads and in other open spaces. Many of the victims lost their sources of livelihoods after their crops and livestock were destroyed by the flood.

Meanwhile in Kebbi State, in north western Nigeria, the flooding also took its toll on the people with six people losing their lives. The flood affected 11 LGAs- Argungu, Birnin Kebbi, Bunza, Suru, Koko-Besse, Yauri, Shanga, Bagudo, Maiyama, Jega and Dandi- destroying five bridges and 500,000 hectares of rice, millet, sorghum, maize and sugarcane farms. In Argungu, the flood was reported to have come close to harvest time for rice. This led to very poor rice harvest. The flooding in Kebbi made most of the communities and health centres difficult to access. The few available health centres were submerged. The flood came to some of the communities at about 2am when people were still asleep, covering houses up to roof level. Some community members devised survival strategies such as using the calabash for movement on the waters from one direction to another³⁴.



Figure 3: Community women in Kebbi State moving across flood water through the aid of the calabash

Photo Credit: NTA International

In Sokoto State, about 30 persons were reported to have also died as a result of flooding. This includes three children who were washed away by the flood³⁵. The Sokoto River located in Kende, the boundary community between Kebbi and Sokoto States, increased by 5.03 metres as of 30 August 2020. The part of the Niger River close to the Jidere Bode River (water) level measuring station in Kebbi jumped from 1.4 metres in mid July, 2020 to 5.74 metres by late August, 2020.



Figure 4: A Flooded Area in Kano State:

<https://media.ifrc.org/ifrc/2018/09/25/80-nigeria-affected-floods-disaster/>

Similarly, in Anambra State, eastern Nigeria, no fewer than 20,000 people have been sacked from their homes by flood in three communities of Otuocha, in Anambra East LGA; Umu-eze Anam and Mmiata Anam in Anambra West LGA. Markets, homes, farmlands and properties have not been spared³⁶.

In Bayelsa State the scenario is not different as many communities were submerged. Schools in the State were shut down and commercial activities stalled as floods ravaged Adagbabiri community in Sagbama LGA and Kaiama Community in Kolokuma-Opokuma area. The flooding led to the death of a Catholic priest and two pupils returning from school.

According to sources from the communities, the rising water level exceeded that witnessed in 2018 and may reach that of 2012. Most houses in the communities including school buildings, town halls, health and worship centres were all flooded.

Properties and food items worth several millions of Naira were destroyed in the flood as well. Some community people had to pack their valuables on elevated platforms to prevent them from being destroyed while others took refuge in uncompleted structures on higher grounds³⁷.



Figure 5: Schools Shutdown in Bayelsa over flooding <https://wapyum.com/m/uploadurl/uploads1/bayelsa-shuts-primary-secondary-schools-over-flooding-wapbaze-com-October-Sunday-18-10-2020.jpeg>

In September 2020, over 25% of Nigeria's expected 8 million tons of rice harvests was destroyed by floods in the rice producing Kebbi state, according to the Kebbi State Chairman of the Rice Farmers Association of Nigeria, Mohammed Sahabi, "This bad news couldn't have come at a worse time for our farmers and other Nigerians who looked forward to a bumper harvest this year in order to reduce the current astronomical rise in the costs of food items in the markets" the Chairman lamented.

Mohammed Sahabi narrated that 450,000 hectares of rice were flooded and written off, and other rice farmers in Kano, Enugu, Jigawa and Nasarawa States also recorded losses. He added that heavy rainfall was predicted for the year, however, "we didn't expect that the damage will be of this magnitude."³⁸ There is, therefore, need for the Ministry of Agriculture and agricultural extension workers to always carry out trainings on how best farmers can prevent their crops and goods from being spoilt by flood.

In a recent report, released on 19 October 2020 by the International Federation of the Red Cross and Red Crescent Societies (IFRC), it was stated that torrential rainfall, river floods and flash floods occurring since September 2020 across Nigeria have cumulatively impacted 192,594 people across 22 states in Nigeria. In addition to that, about 826 injuries and 155 fatalities were recorded and 24,134 people were reported to be displaced.³⁹

3.0 SPECIAL FOCUS 1: FLOODED BAYELSA STATE⁴⁰

Annual flooding has been part of the environmental features of Bayelsa State which is renowned for its low topography. Observers have opined that apart from the great floods of 1969 and 2012 the current flood situation in Bayelsa is more devastating than those of 2018 and 2019. As the years go by, flooding incidents in Bayelsa have become more frequent and more devastating than expected.

Despite regular weather predictions (since the 2012 flood) by the Nigerian Meteorological Agency (NiMet) and Nigerian Hydrological Services Agency (NIHSA), preparedness and action by the authorities have declined instead of improving. In Bayelsa State especially, responses from government authorities, Civil Society Organisations (CSOs) and other corporate bodies have been very poor.

Bayelsa State has eight Local Government Areas out of which seven experienced serious flooding. Ekeremor, Ogbia, Sagbama, Southern Ijaw, Kolokuma/Opokuma and Yenagoa LGAs were mostly affected by the recent flooding. During the annual flood seasons, whole communities and streets are usually submerged, families become displaced, crops are hurriedly harvested and some destroyed and even deaths often occur. The 2020 flood experience was no exception, in terms of negative impacts on the people and communities.

Most parts of Yenagoa, the state capital, were seriously affected- from Igbogene to Yenagoa and nearby communities like Swali, Obogoro, Azikoro, etc. The University community of Amassoma

was one of the worst affected communities in Southern Ijaw LGA, just like Odi, Kaiama and Sampou in Kolokuma/Opokuma LGA and; Anibeze and Adagbabiri communities in Sagbama LGA. In Yenagoa LGA, communities along the Taylor Creek and Nun River of Ekpetiema, Gbarain, Okordia and Biseni clans are all affected, including Zarama. Biseni has always been badly hit with houses, streets and main access road submerged.

At Oruma (Yima-ama) in Ogbia LGA, a former Deputy Paramount Ruler of the community, Chief Fidelis Ayoro Oguru narrated his ordeal, experience and fears:

I returned from the Netherlands and met the 2012 flood and saw my flooded room up to the bed level. We only managed swimming to the bed and coming out. But unfortunately, we are experiencing exactly the same thing this year, like 2012. Farms are all flooded. Community folks are struggling to harvest whatever they can from their cassava farms to ferment and process into garri or what is locally referred to as loiloi. Movement in the community is restricted too by the flood; even from one house to another. There is a creek behind the community called Ogba. When that creek overflows its banks, it covers the road leading to Odual in Rivers State. Apart from some residential houses being affected, other places in the community that are flooded include our church and school premises. And due to the fear of children getting drowned, families are taking extra care for safety. Elderly folks are also not safe, moving in flooded environments all the time. They may

fall into the gutter and sustain injuries. As it is, in my present condition, if I fall into any such places death might not be far. I heard a Reverend Father died in similar circumstances at Kaiama while walking on a monkey bridge (improvised raised wooden structure).

Concerning the impact of the flood on crops and sustenance, Chief Oguru stated that: “The flood is really affecting the community, mostly food crops. And everybody is hungry. Right now there is nowhere we can go and get food to come and eat. We are just waiting for the flood to recede to enable us to prepare new farms and get food for ourselves.” According to the chief, all that the farmers do now is “to rush to the flooded farms and bring whatever is available as food from what was planted previously.”

Commenting on the way forward, the Chief appealed to the government to come to their aid even as he hinted on the threat posed by the Ogba Creek. In his words,

[The] government should also come and assist us in addressing the overflowing of the Ogba creek which is the main source of water affecting the community. Dredging it and opening it up to link up with other communities might help. The water is really punishing us.

At Ikarama in Yenagoa LGA, Chief (Mrs.) Ayibakoru Warder made remarks on the flood and the adaptive measures taken by the affected community members/residents. According to her:

The big flood is here again, and it has affected us badly. It is bigger than those of the past two years. Most people have relocated from their houses to other parts of the community to share with relations, get available spaces to occupy in vacant buildings until the flood recedes. Some have chosen to adjust within the same building and keep life going. As you can see inside our house and the surrounding environment is flooded. If not for this elevated terrace, it would have been difficult to even find a place to cook. We have hurriedly harvested what we could from our farms. One of my farms I never expected the flood to get to is also affected now. We have lost so much harvesting crops when we were not prepared for such. That is why you can see so many families carrying cassava about, peeling cassava or frying garri. Is it Climate Change? It was never like this, this frequent high flood. Luckily it appears it has started to recede gradually. We are observing the signs for three days now [23 October 2020 being the date of the interview marked the third day of observation]. We have not heard anything about relief materials from anywhere - not even from the government.

The Youth President of Ikarama, Benjamin Warder, had this to say:

“The flood sacked me and my family over a week ago and I am managing at the Health Centre for now.”

At Igbogene community still in Yenagoa LGA, Emmanuel Ezue explained how the flood has affected him:

I live in Igbogene and own two buildings very close to the JTF - having a common boundary with them. I feel that we are the most affected by the flood. I packed out of my house with my family over ten days ago due to the flood (19th October 2020 being date of the interview was the 10th day). By now, I don't think someone who doesn't know how to swim can go to my house.

The youth president also shared his thoughts on the possible causes of the flood in his area:

Some of us are of the view that the flooding of this environment was caused, majorly by the Ecumenical Centre built by the Bayelsa State Government at the Igbogene/Glory Drive Roundabout. There was a very big canal passing through that area but they blocked it without making any provision for the culvert to allow the free flow of water. Also, there was a bridge crossing the Igbogene Road before the junction - they converted it to culvert instead of leaving it as the former bridge it used to be. These are two main things that have caused our environment to be so affected by flood.

On the issue of government response to the flooding and the plight of affected persons, Emmanuel Ezue had this to say:

Unfortunately we are not getting anything from the government. Even when palliatives were given in the past, we see people who don't own any submerged house coming to take everything. For instance, last year we heard the State Emergency Management Agency (SEMA) was bringing food aid, some persons from other places bearing government tags positioned themselves at the Roundabout and took everything and left

At Obogoro Community also in Yenagoa LGA, David Igwele, former Youth President of the community and representative of Atissa Clan in Ijaw Youth Council (IYC) described the flood situation as sympathetic. He reported that:

Where the 2019 Governorship election took place has been washed away. There were two standard fields there. Field meant for the St. John's Primary school. Polling units 3 and 4 were there. But right now you cannot see any sign of a building, a school premises or even a Corpers' Lodge. The field has eroded away, the Corpers' lodge has eroded away, including the primary school has gone into the water. Private houses and community roads have also been washed into the river - not to talk about farmlands. Sometime in April 2020, we lost a 21-year-old boy to this coastal erosion. The boy fell into the water and that was the end of the boy.

David Igwele explained his misgivings about an awaited receding of the flood. According to him,

When it is receding, that is when you will experience the challenge of the erosion. Now the water level and the land level are equal, so you won't observe any sliding. But when the flood is going, the areas that got in contact with the flood at the bank of the river (Ekole River, a tributary of River Nun) will be cutting off into the river. We are expecting that more houses and other property would go along with the receding flood.

Talking about the response of the government, the IYC representative mentioned that:

We have called on the Federal and State governments to come to our aid several times. Up till now, we are still calling on them to intervene and arrest this flood and erosion threat the community is facing. As a peaceful community, we don't want to take certain actions. But if we are pushed to the wall, we have to do the needful.

Through the interview medium, he once again called on the State and Federal governments to “do the needful by reclaiming this land for us and follow up with shoreline protection.”

The testimonies obtained directly from primary sources in the field were not different from what made headlines on radio stations in Bayelsa State. Besides guests in the studios, voices captured around the state confirmed the challenges posed by the raging flood. Sources revealed how two schoolchildren died at Azikoro community, in Yenagoa LGA. Also, another 23-year-old male was reported to have drowned in the flood in the same Azikoro community. Another 13-year-old JSS3 (Junior Secondary School Class 3) student was reported missing in the flood at Elebele community, Ogbia LGA. A Reverend Father was reported to have drowned as he fell into the water from the wooden platform that he was walking on at Kaiama, in Kolokuma/Opokuma LGA.

Up until the time of this report, the only reaction of the Bayelsa State Government has been to close primary and secondary schools in the state after much outcry by concerned indigenes in addition to his going round to appraise the situation by himself.

Although the state government made pronouncements that victims of the flood would be assisted, no action has been seen in that direction.

In terms of government's response, this year can be considered the worse, as there are no relief camps and nothing like relief materials from the State Emergency Management Agency (SEMA) and National Emergency Management Agency (NEMA). This is irrespective of the early warnings by NiMet and NIHSA about the impending flood.

Response from Civil Society/NGOs and corporate bodies has not been different from the government agencies this year. There has been no information, unlike in previous years, about victims/communities receiving relief materials. However, on 23 October 2020, the Ijaw Women of America were seen taking some relief items, especially foodstuff to the people of Biseni, in Yenagoa LGA.

Although it is yet to show significantly, there are observable indications that the flood has started receding. As at the date of concluding this report, on 26 October 2020, signs of the receding flood were obvious on roads leading to Okordia/Zarama and some other communities as well as inside the communities. This was attested to by indigenes too. Nevertheless, in the flooded home of the former women leader of Ikarama as of 26th October 2020 some fishes were seen coming to the doorstep of the house.

4.0 SPECIAL FOCUS 2: FLOODING IN ORASHI, RIVERS STATE, NIGERIA⁴¹



Figure 6: from left Dr. Oye, community person and Dr. Tammy during field trip to a flooded area in Orashi region

A growing number of coastal and inland communities including the Orashi Region which is made up of Four Local Government Areas namely- Ahoada West, Ahoada East, Abua Odual and Ogba Egbe- ma Ndoni all in Rivers State, Nigeria are being submerged due to 2020 heavy rain falls. Orashi Region, often referred to as the 'Oil Palm Bush', holds about 35% of the oil wells in the Niger Delta. The region is criss- crossed by several rivers which makes it susceptible to flood hazards. It is equally located in the rainforest zone

of the Niger Delta and is always the first to be inundated with sea level rise in Rivers State.

Extreme weather, sea level rise, and other climate change impacts are increasingly to be blamed as the major driver of flooding that has ravaged parts of Nigeria in recent months.

However, the 2020 Seasonal Rainfall Prediction (SRP), released earlier in the year by the Nigerian Hydrological Service Agency (NIHSA) and its counterpart, NiMET, predicted that this year's rainy season was likely to commence earlier than expected and it would come with thunderstorms and very heavy downpour that would lead to tremendous rise in the water levels of rivers and streams as well as creeks in coastal and riverine areas of the country. This prediction by NIHSA and NiMET belong to the class of unpreventable natural disasters. However, despite the recent and past warnings, proactive efforts and measures to curb incessant floods are yet to be designed by stakeholders (government, organisations and general public).

Presently, Orashi region is submerged due to extreme rainfalls which have destroyed homes, properties and led to economic loss among other negative occurrences. . While it is true that floods do not discriminate as they affect anyone on their path regardless of wealth or ethnicity, it is most often lower-income people, the elderly and minority communities who suffer the

greatest impacts. These populations are least likely to have flood insurance, access to transportation to expediate evacuation, cash on hand or the ability to relocate easily.

The field report is the outcome of a two-day (28 - 29 October 2020) on the spot assessment of the impact of the flood situation in Orashi region in Rivers State. The activities carried out involved Participatory rural appraisal (PRA) and focus group discussion (FGD) with key stakeholders of the communities.



Figure 7: Map showing the sampled communities in the Orashi region

Source: Volunteers' field work, 2020

Residents of Orashi Region explained that flooding in the area has been a recurring phenomenon. They further mention other factors that attribute to flooding in the region. These factors include- rise in sea levels, opening of dams leading to release of excess water by the Nigerian authorities, silting of the channels and heavy rainfall. Furthermore, critical observation reveals that the communities in the region are low lying towns and villages which make them susceptible to storm surge.

Community stakeholders, youth groups who were participants in the focus group discussion coordinated in Ahoada West LGA acknowledged that one person has been injured and 67 buildings destroyed in Abua Odual LGA due to flooding in their communities. Forty-three persons were reported to have been injured with six lives lost and sixty buildings destroyed in Ahoada West LGA; while twenty-one persons have been injured and seventy-six buildings destroyed in Ahoada East LGA due to flooding in their communities. They also said that the use of hand pulling boats was the only way to cross the flood water and access service areas such as hospital and marketplaces.

Table 2: Data of flood impact in understudied communities in Orashi region

S/N	Communities	Injured	Lives lost	Building destroyed
1	Emelogu in Abua Odual Local government area	1	-	67
2	Eugenni in Ahoada West LGA	43	6	60
3	Ikata in Ahoada East LGA	21	-	76
4	Omoku in Ogba Egbema Ndoni LGA	-	-	45

Source: Volunteers' Field work, 2020

The frequent occurrence of these extreme hydrologic events over the last couple of decades has clearly shown the variability of the climate. Information gathered from residents in the understudied communities showed that flood has been affecting the people on annual basis than any other form of disaster. The 2020 flood disaster happens to be the second most devastating after the 2012 floods.

Before the recent yearly flooding incidence, the understudied community members informed that in the past, flooding used to occur every 6-10years- thus, giving the people ample time to rebuild

their means of livelihood and totally settle in again. The case is totally different now.

Stakeholders' efforts towards tackling the hazard appear to have not yielded satisfactory results as they have been criticised and labeled ad-hoc, poorly coordinated, non-generalisable and not well established. However, in the light of 'best practices' in flood risk reduction and 'lessons learned' from other countries' experiences of flooding, it can be argued that such stakeholders' efforts are limited due to lack of quality data which are needed to systematically tackle flooding.

Testimonies from Impacted Residents in Orashi region

Residents of the understudied communities lamented that the 2020 flood has disrupted daily activities by hindering income generation activities, agriculture, food trading, shelter/housing, businesses and the educational activities. They also said that the flood has destroyed farmlands, led to loss of lives and infrastructural damages worth billions of naira. Below are their testimonies:

Chief Alali Marcus, of Okolomade community in Odual Kingdom in Abua/Odual LGA of the Orashi region, narrated how the 2020 flood has disrupted his source of livelihood. According to him, "This year's flood don destroy many things for this community, we no fit go farm again, the flood don destroy my properties for my house and where I dey now na my father house. Wetin I loose na over 1 million naira, abeg make una con help us oooo even my garri business don stop because of water. I no no wetin to do again oooooo"

Comrade Reginald Opoli, a youth leader in Odual community narrated the health impact of the flood on the residents. He stressed that the increased depth and duration of the flood in Odual community has led to deterioration of human health and diseases like diarrhea and skin rashes. In his words, "The Flood has caused a lot of health problems which has led to economic crisis as there has been decrease in the amount of effective work force in our household and families and right now we have been forced to use our limited income for covering health expenses. Currently, two of my children are suffering from unknown sickness. It is like rashes but we are yet to ascertain the name.



Figure 8: A child with rashes resulting from flooding in Odual
Photo Credit: T. Cookey and Oye, 2020

It was observed that majority of the farmers in the communities have experienced a severe negative effect on crop production as a result of changed characteristics of floods. Such severe effect was manifest by the flood-induced damage or destruction to standing crops and damage to stored grains.

The people of the Orashi region are predominantly farmers and fishers, their agricultural produce mainly include cassava and plantain which are transported to various markets in Bayelsa and other parts of River State for consumption. People who reside in the

region are now living in hunger as the flood has destroyed farmlands, fishing ponds and made people struggle to feed. Most of the people interviewed, disclosed that the flood has made it difficult for them to access their farmlands and harvest some crops. Their focus is to save their children from being drowned in the ravaging flood.

The increased depth and duration of the flood in the communities has also led to deterioration of the human health due to flood related diseases with high prevalence of diarrhoea and skin rashes as noticed in Odual communities in Abua odual LGA. The on-the-spot assessment further revealed that health care facilities which have been in a sorry and dilapidated state over the years, have been worsened by the ravaging flood.

Cottage hospitals built by Oil companies and other public health centers have been taken over by flood. Medical staff members in the facilities have all relocated to other parts of Rivers and Bayelsa States as the health centres are now inaccessible to people since access roads have been submerged. This critical situation is worsened by closure of pharmaceutical shops and lack of medical supplies leading to spread of infectious and communicable diseases. Children and other vulnerable groups in the communities and LGAs are currently battling with various unexplainable diseases.

Sources of drinking water in the affected communities visited have been polluted by the ravaging flood. Boreholes, hand dug wells and the river which people rely on for drinking water, have been contaminated by the flood. People now drink from polluted water sources thus attracting severe health risks. Businesspersons reported severe decline in income as the flooding affected people's

mobility and rendered some business centres inaccessible. It was also noticed that the flood water in Ahaoda West LGA had Oil sheen on it. Rural dwellers acknowledged that oil bunkering activities by community youths was the cause of the oil sheen.

The findings have revealed that communities in the Orashi region need to adopt strategic measures that will enable them cope with flooding. It is, therefore, necessary to carryout massive environmental advocacy in the region.

5.0 FLOODED LAGOS EXPERIENCE

Flooded Lagos Experience¹

In the past I have often read about flooding in newspapers or followed the coverage on television. I realised how “fictional” those flooding were for me when on the 22nd of June 2020 the flood waters descended on Lagos and swept away half of my properties. The experience was jarring, mind-numbing, and made me wonder why there was no flood preparedness in place in a mega city like Lagos.

I was fortuitously saved from the full impact of the flood because I was away from home, attending a meeting that morning. During my meeting, I noticed that the rain was heavier than usual but I could not imagine that my apartment was already flooded, with my valuables literally gone into the drain. Coming back home from my meeting, I met a pool of water in my ground floor apartment. And the flooding had not ended! Soon everywhere was flooded. The entire compound was under water and the street looked more like a canal. Some cars were almost completely submerged.

With nowhere to go, I devised a way to lay my head down and went to sleep. As I fell asleep that night, I had no idea how bad this flooding had hit me. It was a night in which I snatched sleep in bits. I woke up to see that the water level was rising rapidly behind the house. I quickly grabbed whatever was close to my

hands and began an evacuation of what remained of my properties. I lost some of my vital possessions including my international passport, laptop and clothes but good people came to my aid and supported me to come back to life gradually.

Blocked Drains

I begin to ask questions about how the drainage in my area got blocked and why people do not care about their environment. Accusing fingers were pointed at government, by most persons I spoke to, for allowing “developers” to build on waterways and wetlands without adhering to planning codes and principles.

The basic problem of Lagos State and others alike in Nigeria in terms of flooding has more to do with land use planning and adherence to planning regulations. Rapid population growth is also a problem as citizens leave the rural communities to seek better economic opportunities in the city. In combination with climate change effects, the problem is bound to increase. The alternative ecological resilience approach seems to be an uphill task to achieve in Nigeria considering the increasing demand for land and water resources by the teeming population in cities and towns, especially in coastal cities where land is scarce.

Lagos has perennial flooding challenges and enough is not being done to tackle the menace. Solutions should include- developing and utilizing dynamic flood prediction and management platforms for residents. There is also the need to educate the people on potential flood risks exposure and impacts of their activities on the environment. Human activities in flood risk zones should be restricted and land-use laws must be enforced.

The route to a safer environment is to adopt ecological resilience strategies. This includes growing renewable energy resources to meet our energy deficit, electrify most forms of transportation, and kick fossil fuels out of our system. For government to achieve this, they will require sustained, coordinated policy efforts from all levels of government, the private sector and local communities.



Figure 9: Shoreline erosion at Uta Ewa, Ikot Abasi LGA, Nigeria
Photo Credit: Emmanuel Afia

6.0 FLOODING ACROSS OTHER AFRICAN NATIONS

In Tunisia, at least 6 people have died in floods after days of heavy rainfall in 2020. The heavy rainfall began around 5 September when Kairouan, capital of the Kairouan Governorate in the northern part of the country, recorded 89mm of rain in 24 hours. Monastir recorded 47.8mm of rain, Mahdia 44.4mm and Sidi Bouzid 58mm during the same period. Mahdia recorded more than 40mm of rain in 24 hours in 4 separate days between 5 and 11 September. Institut national de la météorologie-Tunisie issued warnings for further heavy rainfall on 13 September.

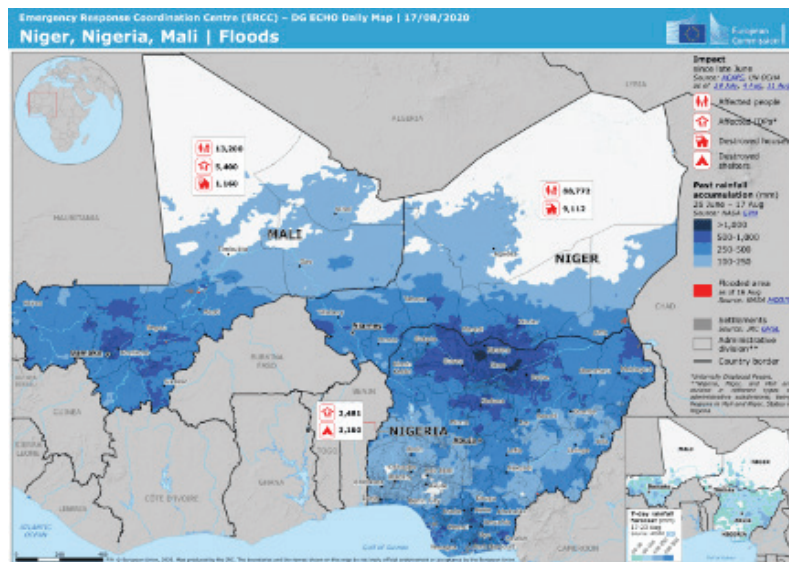


Figure 10: Niger, Nigeria, Mali | Floods - DG ECHO Daily Map | 17/08/2020⁴²

The Niger River overflowed its banks and caused severe flooding in Niger Republic, including the capital Niamey. According to Niger's Ministry of Humanitarian Affairs, as at 24 August 2020, over 40 persons had died, 226,563 people from 24,259 households were affected and 19,234 houses destroyed.

In South Sudan, there have been reports of over 600,000 people being displaced as a result of flooding. The heavy rains have caused rivers to overflow their banks, flooding vast areas and settlements along the White Nile in the centre of the country with the states of Jonglei and Lakes being the worst hit.

The widespread flooding has also affected the neighbouring country of Sudan where the Blue Nile has reached record levels in the capital, Khartoum. About 380,000 people have been affected and over 80 people have lost their lives in the flooding which began in July 2020 in Sudan.

According to a report by UN Office for the Coordination of Humanitarian Affairs (OCHA), on 3 September 2020, flooding in areas along the White Nile has affected 24 states in 6 countries since July 2020.

Similarly, Senegal, Tunisia, and other African countries have experienced series of heavy rains and sea level rise that has led to loss of lives, properties and livelihood. In Senegal, the National Agency for Civil Aviation and Meteorology (Anacim) explained that the areas of Joal, Khombole, Sokone, Passy, Thiare and Toubacouta all recorded more than 200mm of rain fall in 24 hours on 5 September 2020 while other parts of the capital recorded more than 100mm of rain on same day. Local media reported that at least 6 persons died as result of flooding in several parts of the country on 5th and 6th September. It was a terrible experience for Senegalese.

7.0 IMPACTS OF FLOODING

Flooding has a range of impacts on humans including:

- Infliction of bodily injuries or death of people.
- Contaminated with sewage leading to illnesses and possibly affecting clean drinking water sources, contaminating rivers and marine habitats.
- Crippling of social and economic activities, as well as disrupting power supplies
- Leads to the shutting down of essential services such as medical facilities, schools, markets and transport networks.
- Washing away or damaging of buildings and properties, Destruction and displacement of people and wildlife habitats
- Destruction of crops and farmlands thereby leading to food insecurity and shortages.
- Destruction of riverbanks and natural levées when rivers banks are extremely full above its carrying capacity
- Increase in water borne diseases and pathogens
- Soil Erosion and expansion of riverbanks leading to land sliding
- Destruction of forest lands due to trees been uprooted by high-velocity water flow.

8.0 BENEFITS OF FLOODING

Amidst the negativities that come with the incidence of flooding, there are still some benefits which certain levels of flooding hold for the environment. Some of these benefits are:

- Flooding helps in recharging ground water, enhancing soil fertility and providing nutrients where it is deficient.
- Flood waters provide much needed water resources in particular arid and semi-arid regions where precipitation events can be very unevenly distributed throughout the year.
- Fresh water floods play an important role in maintaining the ecosystems in river corridors and are a key factor in maintaining floodplain biodiversity.
- Flooding can also add a lot of nutrients to lakes and rivers which lead to improved fisheries and flood enables fishes to reach new habitats⁴³.

9.0 PREPARING FOR FLOODING

When preparing for flood, it is important to note that some areas are known to be naturally prone to flooding and these are areas along coast lines and lowlands, or areas built on natural water routes. There are various measures that should be put in place to ensure that flooding incidences and their attendant impacts are controlled or stopped.

It is a known fact that the oceans can flood its shores, a river can overflow its banks, a lake can rise beyond its normal boundaries or the man-made barriers. Holding back any of these bodies of water can collapse and allow flooding to occur. Also, abnormal amounts of rains will add to the volume of water in downstream lakes, rivers and ponds and the effects on those who live and work in these areas will depend greatly on the preventive or control measures taken before any flooding incident occur.

Some permanent preparations for flooding in areas known to be susceptible can be adopted. These permanent preparations range from the construction of levees (a natural embankment alongside a river, formed by sediment during times of flooding) and overflow reservoirs to stockpiling of materials for sandbag barriers. Mangroves planting along coastal shores and flood prone environments or lowlands will also help in controlling the volume of water that flows into an environment.

Also, drainages should be constructed, and all drains cleared of silt and debris to allow easy flow of water during rainfall. Also, whenever there is a flood incident it is always advisable for victims to look out for higher or elevated grounds to safeguard themselves from being drowned.

10.0 RECOMMENDATIONS

1. There is need to bring the twin environmental issue of increasing flooding and coastal erosion to the front burner to find practical solutions, or at least, to minimize impacts.
2. The need for effective flood and erosion commission has become most obvious. Part of the 13% derivation allocation and entire ecological funds meant for affected states should be directed at such commissions when established. Besides working independently, state commissions of flood and erosion can collaborate with Federal Government interventionist agencies and other national and international development partners to pursue their mandates.
3. Since the flood is causing hurried harvesting of crops as well as the destruction of crops, the related issue of food security threat should be tackled.
4. The school calendar should also be reviewed instead of closing schools because of yearly flooding in affected states.
5. SEMA and NEMA should send relief materials to affected communities and individuals to ameliorate their plight. The pains of Covid-19 lockdown and its attendant devastating flood crisis cannot be overemphasized. As such, these government agencies should do the needful in line with the purpose of their establishment.
6. All forms of extractive activities should be halted to prevent rising emissions that leads to Climate change.
7. Government should recognise climate change as an urgent justice and security issue in the country.
8. There should be provision of relief materials to those whose sources of livelihood have been destroyed.
9. Ministry of Works should ensure the building of resilient shoreline infrastructure in Orashi Region
10. Ministry of Environment should urgently facilitate the setting up of the climate crisis committees in coastal communities.
11. Dredging of the Orashi river, River Niger, shore protection and opening of canals to ensure free flow of water.
12. Improvement of medical facilities and infrastructure should be prioritised.
13. Support should be provided for farmers and fishers who have been impacted negatively by flood.
14. Further studies are needed to understand how food crops can be properly preserved and stored without them been affected by floods.

11.0 CONCLUSION

Flooding incidents are among the most visible impacts of climate change which is not just felt in Africa but globally. With the statistics and magnitude of destructions occasioned by flooding and sea level rise, we should start looking critically at measures to mitigate the impacts of climate change or better still we should be thinking of more effective adaptive means to save the lives of vulnerable people prone to flooding across the world. The poor were disproportionately affected as their homes readily got washed away due to the less durable materials used to build the houses.

With the combined possibility of increased flooding in the years to come and the emergence of variants of the novel coronavirus, there is urgent need for government to build structural resilience in our communities and nations. There should be comprehensive predictive systems and building of emergency shelters in vulnerable communities. There is also the need to empower communities to adapt by planning for livelihood programmes that take into account flooding possibilities and climate change resilience. Plans must be in place to ensure that displaced children have access to education, healthcare and receive other social supports. Thousands of children were forced out of school by both the incidents of flooding and the COVID-19 pandemic⁴⁴.

Drainage master plans are essential for all communities and cities as they would help better handle flood waters and protect communities. Coastal communities are exposed to loss of territory due to erosion from sea level rise and from floods. These territories require special attention and investment of resources⁴⁵.

END NOTES

- ¹ EnvironNews (December 2020) Flooding affects 129,000, kills 68 – NEMA, <https://www.environnewsnigeria.com/flooding-affects-129000-kills-68-nema/>
- ² Deutsche Welle (November 2020). South Sudan floods affect 1 million people. <https://www.dw.com/en/south-sudan-floods-affect-1-million-people/a-50994854>
- ³ Nnimmo Bassey (13 February 2020). Record climate disasters hit Africa and worse is coming. <https://climateandcapitalism.com/2020/02/13/record-climate-disasters-africa/>
- ⁴ Han, J. & He, S. (10 February 2020). Urban flooding events pose risks of virus spread during the novel coronavirus (COVID-19 pandemic). <https://www.sciencedirect.com/science/article/abs/pii/S0048969720360204>
- ⁵ This section is based on Nnimmo Bassey's Surprised by the Storm (January 2019). <https://nnimmobassey.net/2019/01/28/surprised-by-the-storm/>
- ⁶ Joke Falaju (11 May 2018). Agency releases 2018 flood outlooks in 35 states. <https://guardian.ng/news/agency-releases-2018-flood-outlooks-in-35-states/>
- ⁷ Aljazeera (25 September 2010). Nigeria floods displace millions. <https://www.aljazeera.com/news/2010/9/25/nigeria-floods-displace-millions>
- ⁸ Ibid Op. Olanrewaju, C.C., Chitakira, M, Olanrewaju, O. A. & Louw, E. (2019)
- ⁹ The New Humanitarian (13 September 2011). Flood early warning messages not heeded. Flood. <https://www.thenewhumanitarian.org/news/2011/09/13>
- ¹⁰ The Earth Observatory (2012). Flooding in Nigeria. <https://earthobservatory.nasa.gov/images/79404/flooding-in-nigeria>
- ¹¹ Nkwunonwo, U. C. (2016). A Review of Flooding and Flood Risk Reduction in Nigeria. Global Journal of Human Social Science, 16(2). <https://socialscienceresearch.org/index.php/GJHSS/article/download/1717/1658/>
- ¹² International Federation of Red Cross and Red Crescent Societies [IFRC] (2013). Emergency appeal operation update Nigeria: Floods. <https://www.ifrc.org/docs/Appeals/12/MDRNG01402.pdf>
- ¹³ The Premium Times (4 December 2016). Nigeria managed flood better in 2016 leading to less deaths, destruction – NEMA. <https://www.premiumtimesng.com/news/headlines/217043-nigeria-managed-flood-better-2016-leading-less-deaths-destruction-nema.html>
- ¹⁴ Ibid, Op. IFRC
- ¹⁵ Ibid Op. Nkwunonwo, U. C. (2016)
- ¹⁶ Ibid Op. The Premium Times
- ¹⁷ Nigeria: Floods – Sep 2013. <https://reliefweb.int/disaster/fl-2013-000116-nga>
- ¹⁸ Hill, E. (2014). 15 Dead in Ongoing Flooding in Southern Nigeria. <https://floodlist.com/africa/ongoing-flooding-southern-nigeria-kills-15>
- ¹⁹ Humanitarian Bulletin Nigeria Issue 07 | October 2015 <https://reliefweb.int/report/nigeria/humanitarian-bulletin-nigeria-issue-07-october-2015>
- ²⁰ Ibid Op. The Premium Times
- ²¹ Davies, R. (10 August 2016). Nigeria – Flood warnings for 11 states, thousands of homes destroyed in Kano. <http://floodlist.com/africa/nigeria-flood-warnings-august-2016>
- ²² BBC News (26 September 2018). Why does Nigeria keep flooding? <https://www.bbc.com/news/world-africa-45599262>
- ²³ Reliefweb (2017). Nigeria: Floods - Aug 2017. <https://reliefweb.int/disaster/fl-2017-000126-nga>
- ²⁴ Ajayi, O. (July 10, 2020). NEMA prepares to battle floods in 102 LGAs, 28 states. The Vanguard. <https://www.vanguardngr.com/2020/07/nema-prepares-to-battle-floods-in-102-lgas-28-states/>
- ²⁵ Nigerian Flood 2018 work report- <https://reliefweb.int/report/nigeria/nigeria-floods-2018-work-report-1>

²⁶ Reliefweb (26 Sep 2018). ACAPS Briefing Note: Nigeria - Floods (26 September 2018). <https://reliefweb.int/report/nigeria/acaps-briefing-note-nigeria-floods-26-september-2018>

²⁷ Ibid Op. Ajayi, O. (July 10, 2020).

²⁸ Nigeria Situation_Tracking_On_Flood https://www.wanep.org/wanep/files/2019/Sep/NIGERIA_SITUATION_TRACKING_ON_FLOOD_-_13092019.pdf

²⁹ Floodlist (20 October 2020). Nigeria – 155 dead, 25,000 displaced after weeks of flooding. <http://floodlist.com/africa/nigeria-floods-october-2020>

³⁰ The Premium Times (7 December 2020). Flooding affects 129,000 across Nigeria, kills 68 — NEMA. <https://www.premiumtimesng.com/news/headlines/429901-flooding-affects-129000-across-nigeria-kills-68-nema.html>

³¹ Annual Flood Outlook2019/2020 <http://nihsa.gov.ng/wp-content/uploads/2020/06/2020-NIHS-Annual-Flood-Outlook-AFO-5-2.pdf>

³² <https://humangle.ng/wp-content/uploads/2020/08/Flood-Map-2020-780x470.jpg>

³³ Flood kills 4, destroys several houses in kano: <https://www.vanguardngr.com/2020/09/flood-kills-4-destroys-several-houses-in-kano/>

³⁴ Aliyu, M. B. (1 January, 2021). Ravaging flood in Kebbi State. NTA International.

³⁵ Ibid Op. Aliyu, M. B.

³⁶ Cry for Help from Flood-ravaged Communities in Anambra October 21, 2020 <https://www.thisdaylive.com/index.php/2020/10/21/cry-for-help-from-flood-ravaged-communities-in-anambra/>

³⁷ Flood: Bayelsa community seek state, federal assistance on October 12, 2020 <https://www.vanguardngr.com/2020/10/flood-bayelsa-community-seek-state-federal-assistance/>

³⁸ Floods destroy over 25% of Nigeria's rice harvests- The farmers warned that the flooding may lead to food security challenges. September 5, 2020 By William Ukpe <https://nairametrics.com/2020/09/05/floods-destroy-over-25-of-nigerias-rice-harvests/>

³⁹ Nigeria – 155 Dead, 25,000 Displaced After Weeks of Flooding 20 October 2020 By Floodlist News in Africa, News <http://floodlist.com/africa/nigeria-floods-october-2020>

⁴⁰ This section on Bayelsa State was researched by Alagoa Morris.

⁴¹ This special field report was made by two HOMEF Volunteers, Dr. Oye Ideki and Dr Tammy Cookey

⁴² Niger, Nigeria, Mali | Floods - DG ECHO Daily Map | 17/08/2020 https://reliefweb.int/sites/reliefweb.int/files/styles/report-large/public/resources-pdf-previews/1531479-ECDM_20200817_West-Africa_Floods.png?itok=3A0buncP

⁴³ Effective Management of Flooding in Nigeria (a Study of Selected Communities in Anambra State) <https://www.bsum.edu.ng/njms/pdf/vol6N2/njmsVol-6No27.pdf>

⁴⁴ Reliefweb (25 September 2020). Tens of thousands forced out of school by floods in Sub-Saharan Africa. <https://reliefweb.int/report/world/tens-thousands-forced-out-school-floods-sub-saharan-africa>

⁴⁵ Monsoon, floods and COVID-19: building community resilience in Bangladesh. <https://www.preventionweb.net/publications/view/72350>

About Health of Mother Earth Foundation (HOMEF)

HOMEF is an ecological think tank and advocacy organization registered in Nigeria. Nigeria is our base but Africa is our focus. We work to bridge the yawning gap between policy/ decisions made by government and the actual needs at the grassroots.

HOMEF works with local communities to build and share knowledge. We recognize that current global crisis have systematic roots and the prevalent paradigms of development and growth based on competition will lead to critical destruction of biodiversity and continued destructive extraction of natural resources as well as dependency on risky technologies. In all these concerns of grassroots communities are ignored, repressed or exploited. We work to build solidarity and ensure justice.

Our Core Values: Justice& Equity in all circumstances, People and the planet in harmony and free from exploitation, Dignity (Respect), Action (Solidarity), Knowledge

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Selected Publications by HOMEF

1. Eco-Instigator (quarterly journal)
2. Resource Democracy
3. Living in Fear-Juan Lopez Villar
4. Community Dialogue Guide (Oil/Gas)
5. Community Dialogue Guide (Forest)
6. Community Dialogue Guide (FishNet)
7. Not on our Plates: Nigeria Does Not Need GM Food
8. Community Dialogue Guide (Food and Farming Systems)
9. Oil Politics: Echoes of Ecological Wars-Nnimmo Bassey
10. Community Guide to Environmental Monitoring and Reporting
11. Oil, Power and a Sign of Hope-Klaus Steiglitz with Sabine Pamperrien
12. Nigeria's Biosafety Management Agency Act 2015: In Whose Interest?
13. Resistance to the Military-Corporate Wedlock in Nigeria and Beyond-Nnimmo Bassey (With TNI)
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