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# FLOOD OCCURRENCE IN NIGERIA AND ITS EFFECT ON LAND AND AGRICULTURAL ACTIVITIES: A REVIEW

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**ABSTRACT**

*Flood is a major natural disaster in Nigeria that occurs predominantly during the rainy season, resulting in land degradation, soil erosion, sediment deposition, and seawater intrusion, which in turn lowers soil fertility and agricultural productivity. Floods are known to occur in various forms, including areal, riverine, coastal, urban, and catastrophic floods, which have varying magnitudes. Flooding in Nigeria is driven by multiple natural factors, many of which are exacerbated by the country's geographical and climatic conditions. Natural factors play a significant role in causing floods in Nigeria, and human activities have greatly exacerbated the frequency and severity of flood events. The rapid pace of urbanisation, deforestation, poor land use practices, inadequate infrastructure, and weak governance have contributed to the growing flood risk in many parts of the country. Repeated flooding jeopardises the long-term viability of Nigerian agricultural systems, forcing farmers to abandon rich, flood-prone sites due to ongoing dangers. To mitigate the effects of floods, measures must include developing early warning systems, building adequate drainage and flood control infrastructure, promoting sustainable land-use practices, establishing buffer zones, and planting flood-resistant crops. Addressing these difficulties needs concerted efforts to reduce risks and create resilience, assuring the agriculture sector's long-term viability in the face of climate change.*

**Keywords**: Flood, Climate change, Urbanisation, Deforestation, Agricultural activities, Land degradation, Flood management.

## INTRODUCTION

Floods are the overflow of water that submerges dry land, affecting agriculture, civil engineering, and public health (Kunzewicz *et al*., 2014). Human activities, such as deforestation, the removal of wetlands, changes in waterway courses or flood control measures, and climate change, increase the intensity and frequency of flooding (IPCC, 2013). Climate change increases rainfall and extreme weather events, thereby exacerbating the severity of other factors, resulting in more intense floods and an increased flood risk (Mallakpour and Villarini, 2015). Floods can occur when water from bodies such as rivers, lakes, or oceans overflows or breaks levees, causing water to escape its usual boundaries (Smith and Ward, 1998). They can also occur due to an accumulation of rainwater on saturated ground in areal floods (Hall and Solomatine, 2008). The size of a lake or other body of water may vary with seasonal precipitation and changes in snowmelt (Bates *et al*., 2008). Still, these changes are unlikely to be significant unless they result in flooding of property or drowning of domestic animals.

Floods can also occur in rivers when the flow rate exceeds the channel's capacity, particularly at bends or meanders in the waterway. Flooding can damage homes and businesses in natural floodplains of rivers. However, people traditionally lived and worked by rivers due to their flat, fertile land and easy access to commerce and industry (Hirabayashi *et al*., 2013). Flooding is one of Nigeria's most recurrent and destructive natural disasters, affecting millions annually and causing extensive damage to land, property, and livelihoods. Over the past decades, flood events in Nigeria have become increasingly severe due to climate change, poor environmental management, and socio-economic development. Flooding in Nigeria causes significant damage to farmlands, livestock, and infrastructure, resulting in substantial economic losses and food insecurity. It also leads to long-term environmental degradation, soil erosion, water resource contamination, and loss of arable land. This review analyses flood occurrence in Nigeria and its causes, types, and impacts on land and agricultural activities. It examines case studies, strategies for mitigating risks, and future challenges climate change poses.

***Types of floods***

***Areal flood***

Floods occur in flat or low-lying areas when rainfall exceeds the capacity to infiltrate or run off, accumulating in hazardous depths (Hall and Solomatine, 2008). Surface soil can become saturated, stopping infiltration in shallow water tables or from heavy rain. Infiltration is slow or negligible through frozen ground, rock, concrete, paving, or roofs (Hager *et al*., 2019). Areal flooding typically begins in flat areas, such as floodplains and local depressions not connected to a stream channel, as the velocity of overland flow depends on the surface slope. Endorheic basins may experience areal flooding when precipitation exceeds evaporation (Hirabayashi *et al*., 2013).

***Riverine (Channel) flood***

Floods occur in all river and stream channels, from the smallest ephemeral streams in humid zones to the world's largest rivers (Smith and Ward, 1998). Overland flow on tilled fields can result in muddy floods. At the same time, drainage obstructions, such as landslides, ice, debris, or beaver dams, may cause localised flooding (Farida and Maswanku, 2022). Slow-rising floods are most common in large rivers with extensive catchment areas, resulting from sustained rainfall, rapid snowmelt, monsoons, or tropical cyclones. However, large rivers may have rapid flooding events in areas with dry climates due to their large basins (Smith and Ward, 1998). Rapid flooding events, including flash floods, occur more frequently on smaller rivers, in steep valleys, or on rivers that flow over impermeable terrain or in typically dry channels (Chanson *et al*., 2014). The cause may be localised convective precipitation or sudden release from an upstream impoundment created behind a dam, landslide, or glacier. In one instance, a flash flood killed eight people at a popular waterfall in a narrow canyon, resulting from a thunderstorm over a drainage basin with steep, bare rock slopes and saturated soil (Ba *et al*., 2022).

Flash floods are the most common type in normally dry channels in arid zones, commonly referred to as arroyos in the southwestern United States (DeLong *et al*., 2014). The leading edge of the flood advances more slowly than later and higher flows, resulting in faster-rising limbs as the flood moves downstream until the flow rate is so great that depletion by wetting soil becomes negligible.

***Estuarine and coastal flood***

Storm surges, caused by winds, changes in barometric pressure, and large waves, can lead to flooding in estuaries and coastal areas (Awosika *et al*., 2016). These surges can overtake flood defences or, in severe cases, be caused by tsunamis or tropical cyclones. Storm surges from tropical or extratropical cyclones fall under this category. The National Hurricane Centre (NHC) defines storm surge as an additional rise in water generated by a storm above and beyond predicted astronomical tides (Kerns and Chen, 2023). This rise can cause extreme flooding in coastal areas, especially when the storm surge coincides with a spring tide, resulting in storm tides reaching up to 6.096 m or more in some cases (Hirabayashi *et al*., 2013).

***Urban flooding***

Urban flooding is the inundation of land or property in a built environment, particularly in densely populated areas, resulting from rainfall exceeding the capacity of drainage systems, such as storm sewers (Adelekan, 2015). This condition is characterised by its repetitive and systemic impacts on communities, regardless of location within designated floodplains or near water bodies. Flood effects can be exacerbated by existing paved streets and roads, which increase the speed of flowing water and prevent rainfall from infiltrating the ground (Akram *et al*., 2024). This results in a higher surface runoff that may exceed local drainage capacity. Flood flow in urbanised areas poses a hazard to the population and infrastructure. Despite centuries of flood events, recent research has focused on determining safe evacuation criteria for individuals in flooded areas (Brown *et al*., 2011).

***Catastrophic Flood***

Catastrophic riverine flooding is usually associated with major infrastructure failures, such as the collapse of a dam. Still, it may also be caused by modifications to drainage channels resulting from a landslide, earthquake, or volcanic eruption (Oke *et al*., 2023). Examples include outburst floods and mudflows (lahars) in certain areas along floodplains. This can lead to riverbank collapse, as seen along the River Niger. Tsunamis can cause catastrophic coastal flooding, most commonly resulting from underwater earthquakes.

## Natural Causes of Flood Events in Nigeria

Flooding in Nigeria is driven by various natural factors, many of which are exacerbated by the country's geographical and climatic conditions (Mfon *et al.*, 2022). Nigeria's diverse landscape, which includes rainforests, savannas, and coastal areas, experiences a range of weather patterns and hydrological systems that contribute to the frequency and severity of floods (Adelekan, 2015). The following are the key natural causes of flooding in Nigeria:

### *Climate Change and Extreme Weather Patterns*

Climate change is causing Nigeria to experience an increase in flood frequency and intensity. Over the past few decades, Nigeria has experienced more unpredictable and extreme weather events, including heavier rainfall, longer wet seasons, and higher temperatures (Awosika *et al*., 2016). These changes, driven by global climate change, have led to more frequent floods, particularly during the rainy season from April to October. The West African monsoon, which brings seasonal rainfall to Nigeria, has become increasingly erratic, resulting in prolonged dry spells followed by intense rainstorms that overwhelm rivers and drainage systems (Oke *et al*., 2023). Rising temperatures also increase the evaporation of surface water, disrupting the balance between rainfall and river flows and further increasing the risk of flooding (Geris *et al*., 2022). As global temperatures rise, Nigeria will likely face more frequent and severe flooding, particularly in areas already prone to extreme weather events (Adelekan, 2015).

### *Rainfall Intensity and Seasonal Variability*

Nigeria's flooding issue is influenced by its seasonal rainfall patterns. The country experiences distinct wet and dry seasons, with the damp season characterised by heavy rainfall, particularly in the southern and central regions. This results in frequent riverine flooding along major waterways, such as the Niger and Benue Rivers. The intensity of rainfall has increased, causing more frequent flash floods (Oguntunde *et al*., 2011). These floods occur when intense rainfall overwhelms soil and drainage systems, leading to rapid runoff. They are widespread in urban areas with impermeable surfaces. Seasonal variability in rainfall also contributes to flooding. In some years, the onset of the rainy season is delayed, followed by heavy rains, which can overwhelm rivers and drainage systems. Conversely, prolonged rainfall saturates the soil, increasing the likelihood of flooding.

***River Systems and Floodplain Dynamics***

Nigeria's major river systems, the Niger and Benue Rivers, are crucial for the country's hydrology and cause significant seasonal flooding (Olson & Frenelus, 2025). These rivers drain vast areas of West Africa, and their floodplains are prone to inundation (Ahmed *et al*., 2023). The dynamics of these floodplains, including natural meandering and high-flow periods, contribute to regular flooding (Chen *et al*., 2020). Riverine flooding occurs when a river's capacity exceeds its capacity, causing it to overflow its banks and inundate surrounding land (Oguntunde *et al*., 2011). This is common in the Niger-Benue River Basin, the largest river basin in Nigeria, which supports a wide range of agricultural activities. However, human activities like dam construction, deforestation, and settlement in flood-prone areas have disrupted these natural processes, leading to more severe and unpredictable floods.

***Coastal Flooding and Sea-Level Rise***

Nigeria's southern coastline, stretching over 850 kilometres along the Atlantic Ocean, is highly susceptible to coastal flooding due to rising sea levels and high tides. Coastal areas, such as Lagos, Rivers, Bayelsa, and Delta states, are particularly vulnerable, as they are home to millions of people, critical infrastructure, industries, and agricultural lands (Adelekan and Asiyanbi, 2013). The Niger Delta, where much of Nigeria's oil production occurs, is particularly vulnerable. Rising sea levels exacerbate coastal flooding by increasing baseline water levels, making it easier for storm surges and high tides to flood coastal areas. Additionally, coastal flooding leads to saltwater intrusion into freshwater systems and agricultural lands, making the soil infertile and unsuitable for farming. This has long-term implications for food security and the livelihoods of coastal communities.

***Tropical Storms and Monsoon Patterns***

Nigeria is influenced by tropical storms and the West African monsoon system, which bring seasonal rainfall throughout the year. Tropical cyclones can cause heavy rain and strong winds, leading to localised flooding, especially in the southern part of the country. From June to

September, the monsoon season is characterised by heavy, sustained rainfall, causing widespread flooding in low-lying areas (Adelekan and Asiyanbi, 2013). The intensity and duration of monsoon rains are influenced by broader atmospheric and oceanic patterns, including El Niño and La Niña phenomena, which can affect rainfall and flood risk.

**Human-Induced Causes of Flood Events in Nigeria**

While natural factors play a significant role in causing floods in Nigeria, human activities have greatly exacerbated the frequency and severity of flood events (Ologunorisa *et al*., 2022). The rapid pace of urbanisation, deforestation, poor land use practices, inadequate infrastructure, and weak governance have contributed to the growing flood risk in many parts of the country. The following sections examine the key human-induced causes of flooding in Nigeria:

**The Impact of Flooding on Land**

Flooding is a natural disaster with widespread effects, particularly on land and the environment (Aldardasawi and Eren, 2021). When water from heavy rainfall, river overflow, storm surges, or dam breaches inundates land, it causes immediate and long-term effects that can drastically alter the landscape, ecosystems, soil quality, and land use (Aldardasawi and Eren, 2021; Chakraborty and Chakraborty, 2021). While flooding can occasionally benefit land by depositing nutrient-rich sediments, most flood events cause severe damage to land through soil erosion, degradation, contamination, and disruption of natural habitats (Awosika *et al*., 2016).

***Soil Erosion and Land Degradation***

Flooding significantly impacts land through soil erosion, which removes the top layer of soil (Mahabaleshwara and Nagabhushan, 2014). Topsoil is crucial for both agricultural productivity and ecosystem health (Kibblewhite *et al*., 2008; Trivedi *et al*., 2016). Floodwaters, particularly on slopes or areas with loose, exposed soil, can carry away large amounts of topsoil, leaving bare, nutrient-poor surfaces. In severe cases, floods can strip the soil down to bedrock, rendering the land unfit for farming and the regrowth of vegetation (Morton and Olson, 2014; Rhodes, 2014). Flooding and erosion reduce fertility and contribute to siltation in rivers, lakes, and reservoirs, harming aquatic ecosystems, degrading water quality, and increasing the risk of further flooding.

Repeated flooding and erosion can lead to desertification, especially in regions prone to dry conditions, exacerbating the loss of productive land.

***Waterlogging and Soil Compaction***

Flooding can cause waterlogging, where excess water saturates the soil, limiting plant and crop growth due to the development of anaerobic conditions. Prolonged waterlogging can kill existing vegetation, as roots are unable to absorb oxygen from saturated soils (Akhtar and Nazir, 2013; Jamaal *et al*., 2025). Crops are particularly vulnerable due to their dependence on a delicate balance of soil conditions. Floodwater pressure can also compact soil, leaving behind heavy sediment deposits (Johnston *et al*., 2021). This reduces the soil's porosity, reducing water retention and root growth. This particularly harms agricultural lands, as compacted soils require extensive remediation. Soil compaction from flooding also reduces water infiltration, increasing the likelihood of surface runoff and future floods.

***Loss of Vegetation and Habitat Destruction***

Flooding is a significant environmental issue that can cause severe damage to land by uprooting vegetation and destroying natural habitats (Mfon *et al*., 2022). It can carry debris, mud, and pollutants, burying plants and saplings and destabilising soil. In forested regions, floods can uproot trees, erode riverbanks and destabilise the soil. Smaller plants are often uprooted in grasslands and wetlands, leaving the land barren and vulnerable to further erosion (Wang *et al*., 2021). Floods also disrupt ecosystems, endangering species that cannot adapt to rapid environmental changes (Leal Filho *et al*., 2021). Additionally, floodwaters carry sediment, waste, and pollutants, threatening aquatic species.

***Contamination of Land and Soil Pollution***

Flooding can cause land contamination by mixing pollutants from urban and industrial areas, sewage systems, agricultural chemicals, and waste materials (Singh *et al*., 2022). These pollutants can degrade soil quality and introduce toxic substances into the ecosystem. Industrial floodwaters can carry harmful chemicals and heavy metals onto agricultural fields and residential lands (Ahmed *et al*., 2023). Urban floodwaters may come into contact with raw sewage, garbage, and oil, contaminating the land. Contaminated soil poses long-term risks to agriculture, human health, and the environment. Crops grown on polluted soil may absorb harmful chemicals, posing a risk to consumer health (Musa *et al*., 2019). Land remediation is costly and challenging due to specialised techniques like phytoremediation or chemical soil treatment.

***Changes in Land Use and Reduction of Agricultural Productivity***

Flooding can significantly alter land use, particularly in areas where specific land uses are unsustainable, such as farming or construction (Parven *et al*., 2022). This can lead to farmers abandoning or repurposing land and, in some cases, converting previously used areas into wetlands, conservation areas, or flood storage zones. The loss of agricultural productivity can result in reduced food production, income loss, and higher food prices (Abeysekara *et al*., 2023). The unpredictable nature of floods also makes it difficult for farmers to plan their planting and harvesting cycles. Over time, flood-prone regions may experience population migration, leading to socio-economic shifts and a potential loss of agricultural livelihoods.

***Benefits of Flooding: Soil Fertility and Natural Wetlands***

Flooding can have both negative and positive effects on land. Under controlled conditions, flood events can deposit nutrient-rich sediments, replenish soil fertility, and support agriculture in areas with nutrient-poor soils (Wittmann *et al*., 2022). Historical flooding, like the Nile River's, enriched the surrounding lands with fertile silt. Flooding can also sustain natural wetlands, which are crucial for biodiversity and water purification. Controlled flooding can maintain wetland ecosystems and prevent drought conditions, but these benefits are most applicable in predictable and managed flood cycles.

**The Effects of Flooding on Agricultural Activities**

Flooding is a significant natural disaster that has a profound impact on agriculture, resulting in substantial economic losses, disruptions to food supply chains, and long-term degradation of farmland. While some floods deposit nutrient-rich sediments, most cause destruction, leaving fields unusable and damaging crops, infrastructure, and soil health (Rashmi *et al*., 2022). This review examines the economic implications for farmers and communities that rely on agriculture, including crop damage, soil degradation, livestock losses, and damage to infrastructure.

***Crop Damage and Loss of Yields***

Flooding has a significant impact on agricultural activities, causing crop destruction. Floodwaters can cause crop waterlogging, submerging, or burying, leading to stunted growth, rot, and death. This deprives plants of oxygen, halting essential processes like photosynthesis and nutrient absorption. Some crops are more susceptible, such as rice, while others, including vegetables, grains, and fruits, are highly vulnerable. Flooding also affects the timing of planting and harvesting cycles, affecting productivity (Rupngam and Messiga, 2024). Delays in sowing during planting can reduce the growing season and lower yields, while harvesting can damage mature crops, resulting in significant losses (Bajwa *et al*., 2025). The unpredictability of flood events makes planning challenging and increases risk to farming operations, particularly for small-scale farmers.

***Soil Degradation and Erosion***

Flooding has long-term impacts on agricultural land, primarily through soil degradation and erosion. Floodwaters strip away the topsoil, the most fertile layer of soil essential for crop growth (Ezz, 2025). As floodwaters recede, they leave barren, nutrient-poor soil that requires time and resources to restore. Soil erosion diminishes soil fertility and increases the likelihood of future erosion. Flooding can cause soil compaction, which reduces soil porosity and water absorption, hindering root growth and increasing surface runoff. Additionally, floodwaters bring silt, sand, and other sediments onto farmland, altering soil structure and composition (Olson and Frenelus, 2025). Large amounts of deposited sediment can even bury the soil, requiring extensive clearing before the land can be used again for farming.

***Waterlogging and Salinisation of Soils***

Flooding often results in waterlogged soils, which can lead to root diseases and hinder crop growth. These issues are more severe in regions with clayey or poorly drained soils, which are slow to drain. Prolonged waterlogging can also cause soil salinisation, where seawater deposits salt in agricultural land, which is toxic to most plants and inhibits growth (Hagage *et al*., 2024). This is particularly problematic in coastal areas, where rising sea levels and storm surges increase the frequency of saltwater intrusion. Reversing soil salinity is costly and time-consuming, often requiring extensive leaching or unique soil treatments, which may not be accessible to many small-scale farmers.

### *Loss of Livestock and Aquaculture*

Flooding has a significant impact on crops, livestock, and aquaculture activities, resulting in direct losses and reduced productivity. Livestock may drown or be injured, and displaced animals face an increased risk of disease due to stress, exposure, and lack of shelter (Thakur and Dogra, 2022). Floodwaters can also contaminate drinking water sources with pathogens and pollutants, posing significant risks to animal health. Flooded pastures and grazing lands reduce forage availability, leading to malnutrition and lower productivity among surviving livestock. Aquaculture, mainly near rivers or low-lying areas, is vulnerable to flooding, as floodwaters can wash away fish stocks, damage infrastructure, and introduce diseases into ponds. This loss reduces fish farmers' incomes and affects local food supplies, which heavily rely on aquaculture for protein.

### *Destruction of Infrastructure and Increased Costs*

Agricultural infrastructure disrupts supply chains, causes delays in the transportation of goods, and increases costs (Kanike, 2023). Irrigation canals and drainage systems are often rendered inoperable, requiring significant repairs or replacement. Recovering from flood damage involves substantial financial costs, particularly for smallholder farmers who lack access to credit or insurance. The economic strain can push farmers into debt, hinder future farm investments, and, in severe cases, lead to the abandonment of farming completely.

### *Economic and Social Implications for Agricultural Communities*

Flooding has significant economic and social impacts on agricultural communities, resulting in crop and livestock losses, increased food prices, and compromised food security. Floods disrupt livelihoods, increasing poverty and food insecurity, especially for smallholder farmers who lack savings or alternative income sources. In regions where agriculture is the main occupation, forced migration can occur as farmers seek alternative income sources or relocate to less flood-prone areas (Ahmad and Afzal, 2021). The loss of agricultural productivity can strain local economies, resulting in job losses, increased competition for resources, and social instability. While government or aid organisations may provide temporary relief, this support is often temporary, leaving farmers vulnerable to future flood events.

## Flood Management and Mitigation Strategies in Nigeria

Flooding in Nigeria is a pressing issue affecting lives, infrastructure, agriculture, and the economy. The intensified flood events, caused by heavy rainfall, river overflow, poor urban drainage, and coastal flooding, necessitate effective management and mitigation strategies (Yereseme *et al*., 2022). Key strategies include infrastructural development, improved urban planning, early warning systems, reforestation, community engagement, and policy improvements. Addressing these issues is crucial for Nigeria's future.

### *Infrastructural Development: Building Dams, Embankments, and Floodwalls*

Nigeria's flood management strategies heavily rely on infrastructure, including dams, embankments, and floodwalls. Dams store water during heavy rainfall, control river flow, and provide water for agriculture and hydropower generation. The Lagdo Dam in Cameroon demonstrates how dams in neighbouring countries impact Nigerian flood management. Building more dams along major rivers and establishing partnerships with neighbouring countries can help mitigate flooding by controlling water levels (Galelli *et al*., 2022). Embankments and floodwalls are essential for protecting communities and infrastructure, especially in flood-prone areas near rivers. However, their effectiveness depends on regular maintenance due to sediment accumulation and erosion. Regular maintenance can prevent water from spilling into residential and agricultural zones, reducing property damage and crop loss.

### *Improving Urban Planning and Drainage Systems*

Rapid urbanisation in Nigeria has exacerbated flooding, particularly in major cities such as Lagos, Abuja, and Port Harcourt. This is due to the removal of natural water channels and the replacement of permeable land with impermeable surfaces, resulting in increased surface runoff and overwhelming the drainage systems. Many cities lack adequate drainage infrastructure and are often poorly maintained or clogged with waste. To effectively manage flooding, urban planners must prioritise the preservation of natural waterways, wetlands, and floodplains, design efficient drainage systems, enforce clear zoning regulations, and invest in regular maintenance and expansion of drainage networks. Waste management practices should also be improved to prevent garbage from clogging channels. Green infrastructure, such as parks, roofs, and vegetated swales, can help absorb rainwater and reduce surface runoff.

***Early Warning Systems and Flood Forecasting***

Early warning systems are crucial for flood management in Nigeria, enabling authorities to inform communities and take proactive measures to mitigate the impact of floods (Oke *et al*., 2023). The Nigerian Meteorological Agency and the Nigerian Hydrological Services Agency play a key role in monitoring weather patterns and rainfall intensity to forecast flood events. Collaborating with international agencies, such as the World Meteorological Organisation, can enhance data collection and predictive capabilities. Investing in technology, such as satellite imaging and remote sensors, can provide real-time information, enabling timely alerts and actions.

Effective early warning systems also require efficient communication channels to reach vulnerable populations. Local radio stations, social media, and mobile text alerts are some ways to disseminate flood warnings quickly. Community leaders and local government officials should be trained in flood-prone areas to interpret warnings and help coordinate evacuation and response efforts. Strengthening these systems can reduce the loss of life and property by giving people time to evacuate and secure their belongings, thereby enhancing their safety and well-being.

***Reforestation and Environmental Restoration***

Deforestation in Nigeria is a major contributor to flooding, as it reduces the land's ability to absorb rainfall and increases surface runoff. Trees and vegetation naturally help absorb water, stabilise soil, and reduce erosion, but deforestation for agriculture, construction, and fuelwood has made these areas more vulnerable (Jafari *et al*., 2022). Reforestation and afforestation efforts can help restore natural barriers against flooding by planting trees along riverbanks and in degraded areas, thereby improving soil structure and enhancing water absorption. Community-based reforestation programs have proven effective in many countries. Protecting wetlands and natural reservoirs during floods enhances local ecosystem resilience.

***Community Engagement and Capacity Building***

Community engagement is crucial in flood management, as local populations are often the first to experience and respond to flood events. Educating communities about flood risks and preparedness measures empowers them to take proactive steps to mitigate these risks. Awareness campaigns on waste management can prevent blockages and exacerbate flooding (Wantim *et al*., 2023). Training community members in emergency response and evacuation procedures can save lives and reduce property damage. Local governments can establish disaster response teams to coordinate evacuations and aid relief efforts. Engaging communities in decision-making processes for flood management plans improves the effectiveness of strategies, as local insights are invaluable for developing solutions tailored to flood-prone areas.

***Policy and Legislative Reforms***

Nigeria needs firm policy and legislative support for effective flood management. The government has made progress in addressing flood risks; however, more comprehensive policies are needed to effectively tackle climate change and urbanisation (Cea and Costabille, 2022). National and state governments should collaborate to establish regulations and enforce building codes for flood-resistant infrastructure, as well as ensure the implementation of adequate drainage systems. Policies protecting natural resources, such as forests, wetlands, and river ecosystems, should be incentivised through legislation. Supporting flood insurance programs can help financially safeguard farmers, property owners, and small businesses affected by floods, thereby reducing economic burdens and enhancing their resilience.

## CONCLUSION

Nigeria faces frequent and severe floods due to climate change, poor urban planning, and deforestation. These floods damage crops, disrupt local food production and financially strain farmers' livelihoods. Soil erosion, salinisation, and waterlogging further degrade agricultural lands, while livestock and infrastructure losses exacerbate the situation. To address these challenges, Nigeria requires a comprehensive approach that encompasses investing in flood-resistant infrastructure, enhancing drainage systems, implementing effective land-use policies, improving early warning systems, and promoting sustainable practices such as reforestation and soil conservation. Community involvement and education are also crucial for fostering resilience and empowering local populations to respond effectively to flood risks. By prioritising flood management and adopting sustainable land practices, Nigeria can safeguard its agricultural productivity, enhance food security, and promote resilience against future flood events.

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