

## MOVING BEYOND THE AD HOC RESPONSES TO FLOOD MANAGEMENT TO A LOCALIZATION APPROACH IN GHANA

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### Abstract

*Flooding has become one form of disaster that has become both a national and global concern. In Ghana, flooding has become a yearly ritual, displacing many community members, destroying farmlands, and cutting off communities. The state institution mandated to coordinate and manage disasters is the National Disaster Management Organisation (NADMO). However, NADMO is always overwhelmed with the level of humanitarian assistance required by flood victims annually due to limited resources. Floods management in Ghana is largely reactionary and short-term, hence the need for long-term planning. The researchers therefore used both secondary and primary data to investigate the drivers and gaps in the existing flood management approaches. The findings showed that inadequate funding, non-enforcement of settlement and farming laws; unhealthy environmental practices and low investments in flood containment infrastructure were the drivers of the perennial floods in Ghana. The major gap identified was the over reliance on central government and development partners to finance flood preparedness, response and recovery interventions which has been inadequate and irregular. The study concluded with a recommendation to NADMO and other state agencies to adopt a long-term, holistic and locally driven approach to flood management in Ghana.*

**Key words:** Disasters, Floods, Local Philanthropy, Preparedness, Response, Recovery

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### Introduction

Ghana remains a relatively democratic and peaceful country, having successfully conducted eight elections since 1992. Successive governments have initiated and implemented policies and programmes to reduce poverty and increase wealth. The 1992 Republican Constitution of Ghana envisions a just, free, secured and inclusive country with opportunities for all citizens. But a safe and secured nation includes the capacity of the state architecture to prepare, respond and recover from disasters. This has become an imperative in the midst of climate

change and its associated extreme events, such as floods, droughts and windstorms. The subject of disaster risk reduction has, therefore, gained local, national and global attention (Coordinated Programme of Economic and Social Development Policies, 2017-2024, p.82).

At the global level, the Sustainable Development Goals (SDGs) have included targets to deal with disasters including reducing deaths, economic losses and people affected by disasters. This also includes calling on nations to adopt specific measures to build resilience to deal with

climate change extreme events such as floods, droughts and windstorms. Notwithstanding the fact that many nations have signed up to the SDGs, an OCHA (2021) report indicated that flooding at the beginning of the year has affected 669,000 people in West and Central Africa, including Ghana, with the combined effect of heavy rains, floods, and windstorms killing 174 people, injuring 300, displacing 69,000, and destroying 72,000 houses.

At the national level, Ghana recognizes that floods have human rights, development and national security implications and, therefore, should be addressed in a holistic and sustainable way (Ghana, Ministry of National Security, 2020). This is because all parts of the country face one form of flooding or the other. Yet, Ghana has not been very successful in flood preparedness, response and recovery. The fatalities due to floods in Northern Ghana in particular are alarmingly high and burdensome. In 1999, 300,000 people were affected by floods. Similarly, in 2007, 307,127 people were ravaged by floods resulting in the declaration of a state of emergency in Ghana and the launch of a \$25million flood emergency response campaign to provide relieve to the affected people (NADMO, 2011). In June 2015, the choked Odaw River got flooded and claimed 150 lives. Between the period 2018 and 2020, 78 people were killed by floods, 23,371 houses collapsed rendering 100,000 people homeless, and 94,379 acres of farmlands destroyed, resulting in food insecurity in Northern Ghana (Flood list, 2018; NADMO, 2020).

The irony is that the northern regions of Ghana which are already food insecure, with challenges in accessing quality and affordable education and health services rather bear the brunt of perennial floods. Whilst the year 2021 has not ended, NADMO has already reported 12 deaths due to flooding, with 16 communities cut off from major towns in the North-East region. However, the ravaging effects of the floods were even more severe in the Upper West region. Status reports from NADMO in the region indicate that, so far, a total of 3,208 people have been affected, with 2 deaths, 269 collapsed houses, 2,951 acres of farmlands submerged under water and 84 community roads washed away, cutting them off from other communities. This is the worrying context of flooding in Ghana and the interest of the researchers to see a more holistic and sustainable approach to flood risk management in the country.

This research was situated within the domain of a number of relevant concepts, theories and

frameworks. These included: disasters, local philanthropy and local governance which have been analysed in this section.

The definition of a disaster remains a shifting sand. This is because of its omnibus nature. According to USAID (2011), disasters could be considered and understood from various dimensions. These include the number of losses and injuries, extent of the occurrence in terms of geography and scale, value of losses in monetary terms, nature of disaster whether short or long-term and the periodicity of occurrence. This definition therefore tends to place value on the quantitative dimension of disasters. Whilst this definition tends to advocate for national level response when the scale is big, it similarly down plays response on the basis of limited scale of impact. From a human rights perspective, even if the disaster affects a single person, it forms a basis for local and national action. In the view of Mizutori (2020), disasters occur when communities are resource poor and unable to mobilise the needed resources to mitigate the impact due to poverty, lack of voice and limited technical capacity at the community level. This confirms the fact that the level of development and resources play a vital role in disaster risk reduction. Therefore, inclusive development and equitable resource allocation is a key strategy in disaster risk reduction. The International Federation of Red Cross (IFRC) see disasters as enormous disruptions to community activities without the ability to cope with the situation using its own resources. This implies that the communities are vulnerable when disasters strike rendering them as recipients of emergency relief from institutions outside their community. The view of the IFRC is therefore to build community resilience to mitigate the hazards that lead to disasters.

The UNISDR (2009) considers a disaster as a grievous disruption of the normal life of a community resulting in widespread suffering of people and loss of human, cultural, material and environmental resources beyond the resilience capacity of the community to cope often time necessitating external assistance. It is important to stress that the importance of the need to build community level capacity to mitigate, reduce and respond to floods and other forms of disasters which is lacking in the flood management strategies employed in Ghana.

The Sendai Framework for Disaster Risk Reduction spans the period 2015-2030. The overarching aim of the framework is to substantially

reduce disasters that result in the loss of lives, livelihoods, and other economic, social, physical, cultural and environmental assets. It seeks to address the gaps in its successive frameworks such as the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters; the International Strategy for Disaster Reduction of 1999 and the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation and its Plan of Action, adopted in 1994 (United Nations, 2015). The Sendai Framework for Disaster Risk Reduction has outlined four priority areas of action for international, national, and local level stakeholders involved in disaster management. These are: 1) Understanding disaster risk; 2) Strengthening disaster risk governance to manage disaster risk; 3) Investing in disaster risk reduction for resilience and 4) Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction. It has been six years since the adoption of the Sendai framework yet many nations including Ghana continue to grapple with the problem of flood disasters. The framework is also based on the 10 United Nations Humanitarian Principles. This research will further examine the extent to which the flood management stakeholders have responded to the Sendai Framework for Disaster Risk Reduction and Humanitarian Principles.

There has been the raging debate as to whether local people especially in developing countries have the resources to practice local philanthropy in mitigating and responding to disasters. This argument is partly solved by Doan (2019), who postulated that community philanthropy has been in existence and will continue to exist for eternity. It is based on solidarity, mutual support, exchange of time, resources and expertise and communal good. It is worth noting that community giving is a common feature in both rich and poor communities and cut across gender, age and creed. Local philanthropy draws heavily from endogenous development theory, which argues that development should start by drawing on the available natural, human, physical, cultural, social and spiritual resources of the local area or region. (Vazquez-Barquero, 2002). This view is supported by Millar, Apusigah and Boonzaaijer (2012), who opined that, endogenous development should be based on local peoples' own criteria of development, and should take into account the material, social and spiritual wellbeing

of the people. In the context of flood management, it can be concluded that communities have a pool of assets including local knowledge, social networks, indigenous laws, taboos and practices, and structures for leadership, accountability, human and material resource mobilization that can contribute to flood preparedness, response and recovery. However, very often these local capacities and resources are down played. There is therefore the need to solve local problems using local solutions. Therefore, creating spaces for communities to lead and coordinate the flood risk management agenda is a most sustainable approach to adopt in Ghana. This position is supported by the philosophy underpinning the Ghana Beyond Aid Charter which was formulated in Ghana in 2019. The Ghana Beyond Aid agenda seeks to galvanise the energies, skills and resources of Ghanaians for the accelerated development of the country. It implies trading with other countries on competitive basis and not merely relying on donor aid.

The focus on a local philanthropy approach to solving local and national level problems has been acknowledged by USAID a cherished and long-term development partner of Ghana. USAID (2020) under its journey to Self-Reliance strategy defined local philanthropy as an initiative that allows local actors themselves to mobilize various forms of assets, including financial, human, or intellectual, to propel their own development in a simple and transparent way.

Therefore, launching a local philanthropy campaign for flood management at the community level is thus possible. Already communal living is a common feature in many Ghana communities as expressed in the formation of Village Savings and Loan Associations (VSLA), communal farming systems and women self-help groups which are akin to similar communal systems practiced in other parts of Africa.

Research conducted by the East African Philanthropy Network (2021), on the reasons for local philanthropy showed that 40% was meant to increase the scope of social impact, 22% for personal fulfillment, 15% due to media exposure of the situation, 14% for recognition and 10% for tax rebates. Hence communities, with the right leadership and capacity development for local structures can mobilise resources from various sources including their representatives in parliament, faith-based institutions, traditional authorities, private sector, NGOs, development partners and philanthropists living in and outside

their communities.

Local governance essentially aims at creating spaces for local development. According to the African Union (2014), local governance focuses on the governance processes and institutions at the subnational level, which includes governance by and with local governments or local authorities, civil society, and other relevant actors at the local level. This means that local governance involves the interaction of various players and at different levels including traditional authorities, faith-based organisations, community-based organisations, women self-help groups, farmer-based organisations, local and international NGOs, private sector actors to mention but a few. Godwin, (2014) defined local governance, as the management of the affairs of people at the locality where they are. This definition therefore emphasizes the involvement of local people themselves in carving out their development trajectory. The overarching import of local governance is to bring decision-making processes closer to the people and to promote local ownership of the development processes.

Ghana as a sovereign state practice a decentralize system of government as indicated in its 1992 Republican Constitution. The Constitution mandates Parliament to pass laws that decentralizes power and resources from central government to local government structures. Therefore, in accordance with the constitution of Ghana, the Local Governance Act 2016, Act 936 was enacted. The Act confers executive, legislative and deliberative functions on Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana. The local governance system of Ghana also includes lower-level governance structures such as Sub-Metropolitan and District Councils, Urban Councils, Town and Area Councils and Unit Committees. The functions of the MMDAs are further supported by a number of functional committees. These are the Executive Committee and a number of Sub-committees including: Development Planning, Social Services, Works, Justice and Security, and Finance and Administration. It can therefore be concluded that there are adequate and legitimate structures and platforms for mobilizing local resources and taking local actions to manage the perennial floods in Ghana. This is the basis for the advocacy for a decentralized and localisation agenda for the management of floods in Ghana.

#### Statement of the problem

In Ghana, the state institution vested with the

mandate to coordinate and manage disasters is the National Disaster Management Organisation (NADMO) as stipulated in the NADMO Act, 2016 (Act, 927). NADMO functions through a national secretariat, sixteen regional secretariats, 260 district/municipal/metropolitan secretariats and 900 zonal offices, with a total of over 8,000 staff. It has over 3,500 Disaster Volunteer Groups (DVGs) formed with a total national membership of over 60,000 engaged in basic disaster management at the community level. This bureaucracy notwithstanding, NADMO remains a weak institution and unable to effectively coordinate floods and other disasters in Ghana. Its strategies are ad hoc and reactionary. It applies a top-down model which requires that resources for flood risk management must be sent from the centralized level to the localized level of governance. This is not withstanding the fact that Ghana implements a decentralized system of governance with dedicated common fund for locally initiated actions. As a result, emergency relief support for flood victims comprising food and non-form items, such as grains and oils, blankets, mattresses, medicines, toiletries, and clothing, often arrive late, and in inadequate quantities. Most often, there are no resources for post-floods rehabilitation and reconstruction which leave the affected persons vulnerable and unable to build resilience against subsequent floods.

Additionally, Ghana's flood risk management approach is fundamentally flawed because it undermines the capacity and potential of local communities to mobilize human and material resources to prepare, respond and recover from floods. Therefore, the annual ritual of loss of human lives as a result of flood disasters is akin to assisted suicide. This is because all relevant state actors are in the full knowledge of when and how these floods will happen and how exactly their impact would be, yet they occur with anticipated devastating consequences.

#### Purpose of the study

This research is motivated by the following objectives:

1. To deepen understanding of the causes of flooding in Ghana.
2. To identify the shortfalls in the current approaches to flood management in Ghana.
3. To explore alternative frameworks for managing floods in Ghana.

#### Research Questions

The research was guided by the following questions.



1. What are the key causes of floods in Ghana?
2. What are the shortfalls in the existing framework for flood management in Ghana?
3. What framework will help Ghana to manage floods on a sustainable basis?

### Methodology

The methodology employed for this research was based on a combination of the review of secondary sources of information on disaster risk reduction and interviews with government, faith-based organization and community-based institutions. The researchers participated in four regional workshops

organised by a consortium of CSOs, including STAR Ghana, TAMA Foundation and TEPPA, to develop a roadmap for the sustainable management of floods in Northern Ghana. In total, 200 participants across the five northern regions of Ghana participated in these forums. The three platforms, therefore, provided sufficient grounds to reflect on the subject of local philanthropy and the sustainable management of floods in Ghana. The key secondary documents reviewed, and institutions consulted are summarized in Table 1.

**Table 1: Data collection sources**

Data sources	Documents and institutions consulted	Justification
Review of relevant literature on disaster risk reduction	<ul style="list-style-type: none"> <li>▪ NADMO Act,2016 (Act 927);</li> <li>▪ Environmental Protection Agency Act, 1994 (Act 490);</li> <li>▪ Water Resources Commission Act, 1996 (Act 522);</li> <li>▪ Land Use and Spatial Planning Authority Act, 2016 (Act 925);</li> <li>▪ Local Government Act,2016 (Act 936);</li> <li>▪ Riparian Buffer Zone Policy,2013;</li> <li>▪ Water Resources Commission Act, 1996 (Act 522)</li> <li>▪ Ghana National Water Policy,2007.</li> </ul>	To understand the legal and policy framework for disaster risk reduction and existing gaps in Ghana.
Workshops	4 workshops were held in Bolgatanga, Tamale and Wa between May and September, 2021.	NADMO, Environmental Protection Agency, Water Resources Commission, Ghana Meteorological Agency, 5 Regional Coordinating Councils in Northern Ghana, selected MMDAs, selected chiefs, queen mothers from Houses of Chiefs, Faith -based organisations including the Catholic Diocesan Development Offices; Muslim Council, Anglican Diocesan Development and Relief Organisation, (ADDRO), NGOs including World Vision Ghana, Catholic Relief Services , Songtaba, Pronet-North and the Ghana Red Cross Society of Ghana and the media participated in their forums.

*Source: Researcher's Flood Assessment Study, 2021*

### Results and Discussion

The findings and discussion are presented under the following sub-headings: drivers of flooding in Ghana; gaps in existing flood management approaches in Ghana and Alternative approaches to

flood management in Ghana.

#### Causes of Flooding in Ghana

The research established that the drivers of flooding in Ghana were varied and due to both natural and

human factors as presented in Table 2.

**Table 2: Drivers of floods in Ghana**

<b>Drivers of flooding in Ghana</b>	<b>Explaining of drivers</b>
<i>Ghana's flat topography prone to flooding</i>	The northern regions of Ghana in particular are made up of a flat expanse, with low elevation, drained by an extensive network of rivers and streams that connect to the Black and White Volta, both flowing into the Volta Lake. Whenever the region records excessive rainfall, the network of rivers and streams within the White Volta Basin normally fill up and overflow their banks, resulting in a runoff of the excess water over the flat, low-lying terrains, causing both sheet and flash floods.
<i>Unhealthy environmental practices and Climate Change Effects</i>	Unhealthy environmental practices, including tree felling for charcoal and other forms of deforestation, bush burning, over grazing, inappropriate farming methods, increasing use of agro-chemicals, and increase in emission of greenhouse gases largely from the energy sector have resulted in the increase in temperatures. The vegetative cover which serves as carbon sink to reduce temperatures and surface water runoffs is heavily depleted in Ghana leading to floods and flood disasters.
<i>Spillage of the Bagre Dam</i>	The Bagre multipurpose Hydro Dam is located on the White Volta Sub-basin in Burkina Faso. Since its construction in 1999, it has become a major source of flood disasters affecting several communities at the downstream side of the White Volta River in Northern Ghana. Annually, the Burkinabe power company, Société Nationale Burkinabe d'Electricité (SONABEL) has to spill excess water from the Bagre dam in order to maintain the dam's 235 meters' water holding capacity. The absence of large dams downstream in Ghana to contain the water has been the bane of many communities in Ghana.
<i>Poor drainage systems and hydrological engineering</i>	Poor drainage simply means constructed drains are unable to discharge the passage of water into the main river/sea at the same rate as it receives incoming water during rainfalls, resulting in overflow and flooding of communities and farmlands. Heavy rainfalls usually present a rapid inflow of water into drains and due to a myriad of factors, including blockage, clogging, poorly engineered or not-fit-for-purpose drain construction, the system is not able to function as required resulting in drains under performance and floods. So the disposal of waste into drains, lack of the siltation of gutters and poor engineering designs of water channels have contributed to the flooding situation in Ghana.
<i>Non-enforcement of land use and spatial planning laws:</i>	Whilst the Ghana Land Use and Spatial Planning Act, 2016 (Act 925) provides a regulatory framework for human settlement and the siting of industrial parks and companies, the laws are abused with impunity. In Ghana people deliberately build houses across river courses resulting in flooding of neighbourhoods and market centres.
<i>Non-compliance with the Ghana Riparian Buffer Zone Policy.</i>	The adherence to the Ghana Riparian Buffer Zone Policy prescriptions will serve as carbon sinks and produce oxygen; help stabilize stream banks and prevent soil erosion; influence local climate and trap and percolate water from floods through the soils into aquifers thereby contributing to groundwater recharge. However, the research established that ecologically unfriendly activities such as mining, sand winning, logging and farming on wetlands/flood plains or floodways and along riparian banks, have reduced the ability of these natural systems to hold water thereby contributing to the annual flooding in Ghana.

Source: *Flood Assessment Study, 2021*

This finding is in tandem with existing Sendai Framework on Disaster Risk Reduction priority 1, which recommends that the starting point for disaster management is to understand the disaster risk. This involves understanding the hazard

characteristics, vulnerability, and risk exposures to the communities as the basis for effective disaster prevention, preparedness, response, and recovery strategies.

### Shortfalls in existing flood management approaches in Ghana

First, this research established that NADMO's capacity to manage the annual floods was weak. Whilst Article 2 of the NADMO Act 2016, Act 927 requires the institution to manage disasters and similar emergencies by developing the capacity of communities to respond effectively to disasters and emergencies, it lacks the needed financial and human resources to prosecute its mandate. NADMO is unable to respond to emergencies timeously and continues to rely on central government, development partners and NGOs to respond to emergencies. The ability of the institution to coordinate multi-stakeholder response to flood preparedness, response and recovery was weak. The institution's capacity to undertake rapid, comprehensive assessment of flood situations and to maintain an interactive management information system for post-flood rehabilitation and reconstruct was found to be woefully inadequate. As a result, NADMO staff were constrained in employing technology for collecting rapid and comprehensive information on floods from communities and districts for aggregation at the regional and national levels for emergency response. Data was manually collected and piecemeal. There were also no horizontal linkages to institutions providing complementary services for flood victims. So the information asymmetry compromised the quality, timeliness and accessibility of data for planning, response and reconstruction. The research also confirmed that NADMO over the years has been dragged into the quagmire of political partisanship in Ghana paying allegiance to the ruling political party of the day. Hence there is no institutional stability and direction as the leadership of the institution is determined by party political patronage and not on meritocracy. This is contrary to Humanitarian Principle 3 which require agencies in the humanitarian sector “not be used to further a particular political or religious standpoint” (Sphere Association, 2018, p.6).

Second, the study found that Ghana had no long term and holistic strategy for flood management. The section on disasters in the country's existing medium term development plan for the period 2017-2024 focused more on disaster prevention and mitigation, but with no clear budgetary provision for post-disaster recovery interventions. This was captured in the document as follows: “Over the medium term, policy interventions will aim at

promoting proactive planning for disaster prevention and mitigation” p.82. It therefore, does not have strategies for dealing with issues related to all the aspects of the flood risk management value chain.

Third, the study also found that national, regional and district disaster management plans were available in Ghana but were not implemented due to financial constraints. Whilst the NADMO Act, has a provision for the establishment of a National Disaster Management Fund. This fund was, yet to be established. Also, whilst the MMDAs were required to fund disaster activities with up to 3% of their MMDA Common Fund, this was not the case in reality. It was therefore not surprising that flood management at the MMDAs was ad hoc and uncoordinated.

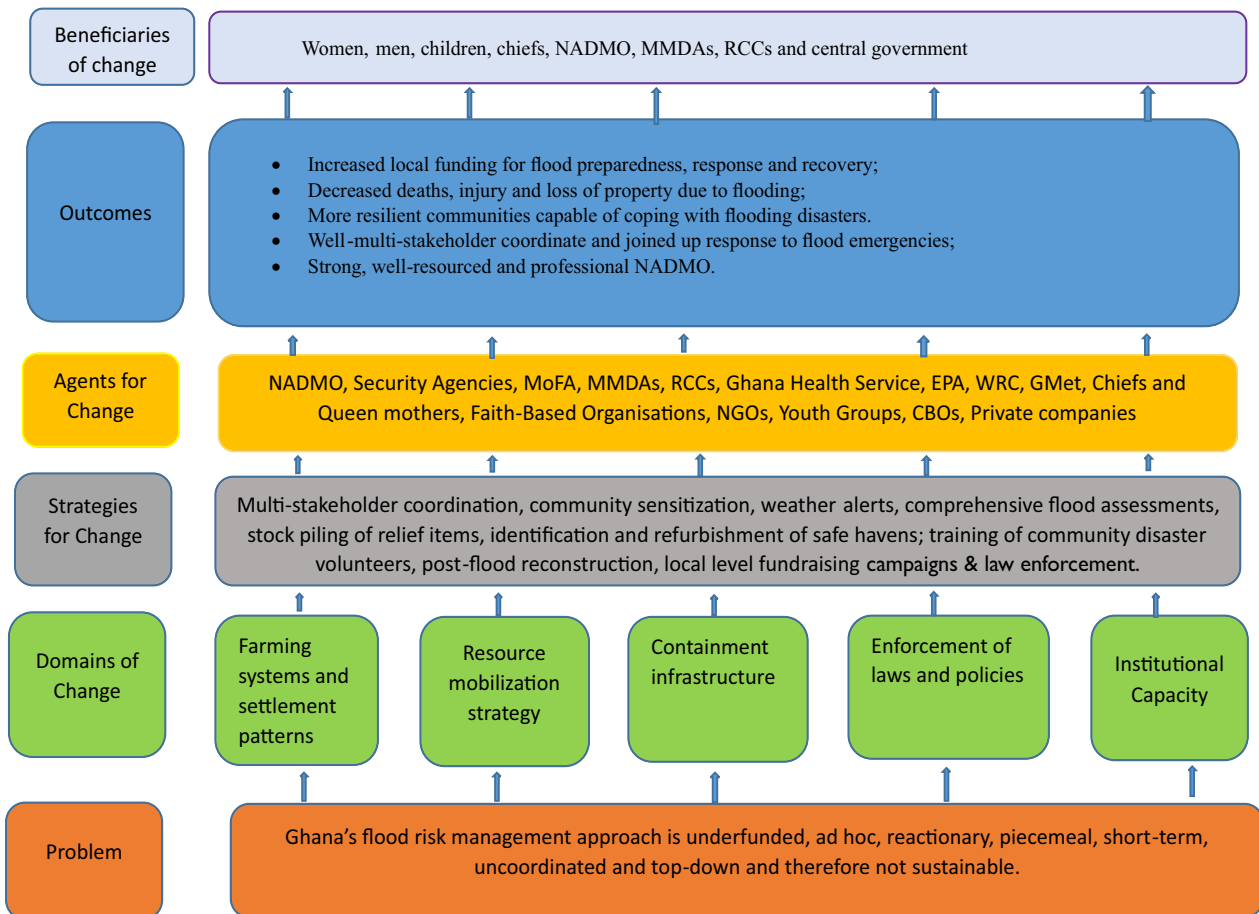
Fourth, the study identified a lacuna with respect to local resource mobilization mechanisms for raking in in-kind and financial resources for flood management. There were no existing transparent and accountable systems in place for local giving. Hence the ad hoc fundraising activities continued annual basis. This finding shows that the UN Humanitarian Principle 6 which call on states to “... to build disaster response on local capacities” (Sphere Association, 2018, p.6) is not adhered to since local structures including the Districts Assemblies, traditional authorities and faith-based organisations capacity to mobilise resources for disaster management is low.

Fifth, the study revealed the inability of successive governments to implement long term solutions for flood management, including the completion of earmarked flood containment infrastructure in Ghana. The Odaw river basin construction initiative under the \$ 200 million World Bank Greater Accra Resilient and Integrated Development Project was billed to start in December, 2021 according to the Minister of Works and Housing, Mr Francis Asenso-Boaky (peacefmonline.com) but some respondents were skeptical about the commencement date of the project. Also in November, 2019 the President of the Republic of Ghana cut the sod for the commencement of the \$993 million Pwalugu Multi-purpose dam. The completion of this project will address the flooding issues associated with the spillage of the Bagre dam, hold water for irrigation and hydropower generation. However, the delay in securing funding to complete this project was noted as a source of concern to many Ghanaians especially those in leaving with the White and Black Volta water basins in Northern Ghana.

### Alternative Approach to Flood Management in Ghana

The research concluded that the ad hoc, fire-fighting, piecemeal, short-term, uncoordinated and top-down strategies for managing floods in Ghana were not sustainable. The alternative proposition from respondents was for the adoption of a holistic, well-coordinated, long-term and locally driven approach

to flood risk management in Ghana. The views of the respondents are articulated in the flood localization framework (FIF) in Figure 1. The FIF is made up of six components. These include: (1) the problem; (2) the domains of change; (3) the strategies for change (4) the institutions to engender the required change (5) the desired outcomes (6) the beneficiaries of change.



### Contribution to Knowledge in Flood Management in Ghana

This piece of research has made a unique contribution to knowledge in flood management for practitioners involve in disaster risk reduction in Ghana. It has provided a framework for flood management known as the Flood Localisation Framework which is a holistic and bottom-up framework for flood management. Therefore, practitioners in the flood management value chain such as NADMO, MMDAs, the Inter-Agency Working Group on Disasters, Faith-Based Organisation Ghana Red Cross Society, NGOs, community leaders, academics and Disaster Volunteers will find it useful in mobilizing resources and strengthening structures and capacities for

effective flood prevention, preparedness, response, recovery, rehabilitation, and reconstruction in Ghana.

### Conclusions

The study concluded that flooding in Ghana was caused by both human and natural factors. A key point to note is that unhealthy human practices have contributed to global warming, increasing temperatures and the associated extreme climate change events including flooding. The study further concluded that the ad hoc, uncoordinated and short-term approaches to flood management in Ghana has accounted for the increasing fatalities associated with flooding such as the loss of lives and properties. Also, the findings clearly established the need to



adopt a long term, well-coordinated and locally driven approach to manage the perennial flooding occurrences.

### Recommendations

A major recommendation from the study is for NADMO with the help of all the relevant agencies to adopt a local fund-raising approach for flood management in Ghana. This will ensure that the institution has a sustainable source of funding for flood preparedness, response and recovery. Based on the findings of the study, it is equally recommended that specific strategies including: sharing of weather information; sensitization of community members in flood prone communities; enforcement of settlement and farming laws; improving flood assessments; investments in green technologies, execution of flood containment infrastructure and alternative livelihoods for internally displaced persons due to floods should be prioritized by NADMO, the MMDAs, NGOs and other stakeholders.

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