

A Review of Disaster Preparedness and Management Techniques in Kenya

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Abstract: The study sought to examine disaster preparation, management, and mitigation techniques in Kenya. The study methodology involved literature review of previous studies and the information available to the public on the official government and government departmental websites. The study also reviews the government policies and plans, and legislations that have been put in place by the government and whether or not these policies are suitable for application in real-life situations. Results from the study show that there have been some tremendous efforts taken by different levels of government as well as stakeholders within the country to improve disaster preparedness, management, and mitigation but these could not be fully implemented considering the increase in vulnerability index due to climate change. There are various government policies and departments established under the office of the president under various ministries when as those established through Acts of Parliament, whose goal has been to improve coordination and resource mobilization and deployment towards disaster preparedness, management, and mitigation.

Key words: Disaster preparedness, disaster management, disaster mitigation

I. INTRODUCTION

A disaster is a natural, technological, or human-made event that causes damage of such severity to the environment, society, and the economy of a country that recovery is unlikely. They can result in a great deal of loss, be it of human life, health, and safety, or property. A disaster happens when the risk management is overwhelmed, has failed, or there is not enough mitigation, effective response, and good recovery (Bronfman, Cisternas, Repetto, and Castañeda, 2019). The early signs of a disaster are often the most difficult to identify. Disaster preparedness is the willingness or the process of a person or society to comply with emergency policies and plans. Disaster management refers to activities that are carried out before, during, and after disasters to prevent harm, reduce losses and enhance recovery. In an environment of risk and uncertainty, disaster mitigation can be achieved through disaster prevention and mitigation techniques. Disaster preparedness, management, and mitigation techniques aim to reduce the extent and severity of future disasters by keeping an eye on potentially dangerous situations and responding accordingly (Rosauer and Svirina, 2018). They can include things such as improved communication between government agencies, community alert systems, local emergency plans, safe buildings, and evacuation rehearsals.

According to the World Bank, the goal of disaster preparedness is to reduce the loss of life and property. Disaster preparedness programs are aimed at helping communities and individuals identify the risks they face, create an emergency plan that will work if a disaster occurs, and increase their capacity to respond effectively when faced with disasters (Nyika, 2022). Disaster preparedness, management, and mitigation techniques include various kinds of plans, procedures, policies, and organizational measures that can be used to help prevent damage and alleviate the harmful impacts of emergencies. They range from simple recommendations for individuals to complex manuals outlining entire operation procedures for communities or universities (Nji, Carolynne and Vubo, 2022). While most are designed with particular types of events in mind, some are universal and intended to be used as stand-alone guidelines by governments, businesses, or other organizations within their whole emergency management program.

Disaster management strategies in Kenya have been outlined in various sources but there is a need for a comprehensive review of the literature on the country's disaster preparation and its mitigation techniques. It will be useful to know what has been achieved so far and how we can improve. It will also act as an indicator of current preparedness status. The overall aim of this study is to bring together a group of researchers from different disciplines who have contributed to disaster preparedness, management, and mitigation techniques in Kenya by proposing a framework for collaboration between academic institutions, non-governmental organizations, and private sector organizations involved in disaster management within Kenya. This research identifies the areas where Kenya has performed well and identifies areas that require improvement.

II. LITERATURE REVIEW

According to (Rosauer and Svirina, 2018), the response to disasters is complicated and often involves trade-offs. Policies may seek to reduce the cost of disasters, while also reducing other costs associated with mitigation or non-infrastructure spending. These include incentives to employ mitigation techniques like safer building practices, fireproofing techniques, and other forms of physical mitigation. To minimize the impacts of disasters on societies, development efforts have been put in place by governments to protect the lives and assets owned by citizens living within their borders (Nji, Carolynne & Vubo 2022). Disasters are characterized by

damage to property or infrastructure and environmental degradation due to physical intervention during rescue operations. Further hidden costs arise due to human actions such as looting, which cause further economic damage as those who have lost their homes and livelihood have no choice but to relocate and this can lead to additional costs for new dwellings and resources that were not previously available (Bronfman *et al.*, 2019). Programs must therefore be developed for the mitigation of these effects.

Aiming at reducing disaster risks and mitigating the extent of disasters, disasters, and risk management is a chain of actions and instruments expressed by countries and it emphasizes people's participation and comprehensive utilization of existing resources, it also foresees a participatory approach to disaster management (Rosauer and Svirina, 2018). Fuso *et al.*, (2019) explain that reducing disaster risks as a part of sustainable development solutions is becoming one of its most important goals due to the imminent potential danger that can threaten human health, cultural values, and nature. To reduce this risk measures should be taken in all aspects: mitigation, preparedness, and response. It seeks to reduce the potential losses due to hazards by increasing awareness of people's vulnerability to natural disasters, improving preparedness measures, and promoting safer management practices. Disaster risk reduction efforts are essential if we wish to achieve sustainable development targets (Bello *et al.*, 2021). It is upon the various governmental and non-governmental organizations to ensure that the measures put in place are sustainable.

With poverty and inequality rising in developing countries such as Kenya, the impacts of disasters are felt even more strongly (Nyika, 2022). In this country, disaster preparedness remains a challenge as it requires financial resources, improved coordination among stakeholders, cooperation between local governments and other service providers such as the media, and community participation. According to Fuso *et al.*, (2019), there has been a significant increase in vulnerability due to climate change among other reasons for which effective mitigation strategies must be implemented by local governments at all levels of national, urban, and local bodies through policies that address land-use planning; preservation of open spaces, proper environmental management including pollution control, erosion control, land reclamation, and flood control.

Disaster risk management strategies in the country are developed by the national and county governments (Nyika 2022). The strategies provide a framework for identifying hazards, assessing vulnerability and risks to people, property, environment, and livelihoods, preparing for disasters, and managing aftermaths. Disaster risks are reduced by actions taken before the risk occurs (prevention), during the disaster (mitigation), and afterward (rehabilitation). The main focus is on reducing vulnerability to disasters by addressing underlying factors that increase or exacerbate disaster risks such as poverty, low levels of education, geographic location,

and neglecting institutional frameworks that help prepare people for emergencies. According to Rosauer and Svirina (2018), these strategies are aimed at promoting awareness about disaster planning, both for individuals and communities, building community resilience, protecting people from death or injury during an emergency, saving lives, and protecting livelihoods in the face of natural hazards, improving the efficiency of official efforts to help save lives and property, providing appropriate post-disaster assistance to meet immediate needs while minimizing future needs.

Kenyan government through the Ministry of Devolution in the department of special programs is working to help the people by using different methods to improve support and help people get back on their feet. One method of helping mitigate these disasters is by building new structures such as houses and schools that reduce risk factors like flooding, by being built on higher ground so they can withstand more damage (Devolution.go.ke). Also important for mitigation is making sure that all residential areas such as rural villages have a proper place for emergency shelter so that when disaster strikes everyone has a place to go for safety (Nyika, 2022). The government through its relevant ministries and departments ensures that this information is available to the public so that they can benefit from such resources. As opposed to being a one-time event, disasters are characterized by their impact on communities, as well as their effects on society. The main focus is on the people affected by the disaster and how best to prepare for the aftermath.

III. METHODOLOGY

The study adopted desk review method involving thematic search of the previous data by other scholars, government institutions and bodies involved in disaster risk management, disaster preparedness, and mitigation techniques in Kenya. To begin with, an attempt was made to look for relevant journals, articles, and institution websites that discuss disaster preparedness management and mitigation techniques. The secondary sources used were books, journals, government, and international organizations' official websites, and press articles on disaster preparedness, management, and mitigation techniques in the country. Finally, a thorough analysis and presentation of the findings were carried out to contextualize all valuable information for this review to establish the findings of this study.

IV. FINDINGS AND DISCUSSIONS

The increasing frequency and severity of disasters around the globe more so due to climate change has necessitated that the response and recovery efforts in Kenya be conducted in a more coordinated, collaborative, and efficient manner than before. Disaster management has been receiving considerable attention in Kenya for many years now. The country has witnessed major disasters in the past and barely survived them, as it has never been adequately prepared for such eventualities.

National Environmental Management Authority

The first step in managing disaster is prevention. Prevention of disasters is done by ensuring proper planning and implementing disaster preparedness, management, and mitigation techniques. The National Environmental Management Authority (NEMA) of Kenya is responsible for implementing, monitoring, and enforcing environmental protection policies. NEMA does not only focus on disaster preparedness but also places equal emphasis on preparedness for emergencies (e.g. floods) and clean-up efforts in case there is an outbreak of an epidemic during a natural disaster. They are also mandated to make sure that their policies are implemented by all stakeholders, who are mainly local authorities. NEMA focuses on protecting the environment through the enforcement of several activities such as prevention, conservation, management, and emergency response to natural disasters. NEMA ensures that there is no damage or destruction to the environment as a result of human activities, especially those related to environmental degradation.

The Ministry of Health

The Ministry of Health, in collaboration with the National Disaster Preparedness Committee, developed a Strategic Plan for Preparedness, Rehabilitation, and Recovery during Disasters (2015-2020). The strategy seeks to develop a clear national plan for the reduction of risks, including identification of disaster risks and vulnerability mapping, building institutional capacity at the national and country levels to respond promptly, effectively, and efficiently to emergencies, increasing community preparedness and resilience by building national awareness about risks related to disasters, and enhancing coordination at local government level. These objectives have been further enhanced through the Disaster Management Act 2012 which consolidated all previous acts dealing with disasters in Kenya, created an office of Disaster Management within MOH with functional support structures, and established National Disaster Management Committee as a statutory body reporting directly to the Cabinet Secretary for Health Services. The NDMC is responsible for coordinating intergovernmental cooperation on the prevention and mitigation of natural disasters, including earthquakes, floods/storm surges/high waves, drought/forest fires, etc., and ensuring an effective response before, during, and after any natural or manmade disaster occurs.

The National Disaster Management Unit

The National Disaster Management Unit is a multi-sectoral, national organization with a mandate to lead, coordinate and support all stakeholders that limit the impacts of disasters in Kenya. The unit makes use of its various partnerships with institutions such as the Ministry of Interior, Ministry of Foreign Affairs and International Trade, Ministry of Finance and National Treasury as well as County Government Offices to develop broader strategies that reflect national priorities. Its role is to plan, prepare and implement the response efforts in

all types of disasters. It is also responsible for assessing the needs of affected people, and coordinating and responding to such needs within a short time frame. Furthermore, it has the responsibility to ensure that people, institutions, and infrastructure are in place to meet any eventuality. This involves the implementation of measures such as early warning to the public, crisis communication, response and recovery, mitigation of natural disasters, and rehabilitation.

National Disaster Risk Management Policy

The Ministry of Finance has developed a comprehensive National Disaster Risk Management Policy that guides the development, delivery, and management of disaster risk management strategies in Kenya. This policy, which was developed following extensive stakeholder consultations and workshops throughout the country, aims to ensure that disaster risk reduction activities are mainstreamed into other sectors and are linked with economic development activities through policies and programs. The main objectives of this policy are to reduce the human, environmental and economic loss associated with disasters that occur in Kenya, and to increase resilience against the impacts of extreme weather events and natural disasters such as droughts, floods, storms and cyclones, earthquakes and volcanic eruptions. It implements appropriate mitigation measures against these threats, and promotes preparedness to manage and respond to disasters through early warning systems so that timely action can be taken when disaster strikes.

National Policy for Disaster Management in Kenya

According to the Government of Kenya Ministry of Devolution, a National Policy for Disaster Management in Kenya was established to ensure coherence and coordination among all parties involved, as well as establishes a framework that promotes preparedness, mitigation, response, and disaster recovery. The objectives of this policy are to prioritize all matters relating to disaster prevention and preparedness, enhance mitigation measures and appropriate institutional capacities, mitigate ongoing disasters or reduce consequences arising from them, provide timely and effective assistance in times of need, restore standard conditions when possible; and promote international cooperation based on mutual benefit. The framework also emphasizes preparedness, which is critical to ensuring effective emergency response and minimizing fatalities and economic losses when disasters occur.

The National Disaster Response Plan

The National Disaster Response Plan was designed under the office of the president to promote a greater level of coordination among agencies involved in disaster risk reduction activities as well as integrate disaster management policy with development planning at the macro-level through close cooperation with government departments or ministries responsible for development priorities as well as donors in the area of aid coordination. Its responsibility is to establish the national system for disaster management and to harmonize all

Government policies and legislation to support a coordinated response to disasters, by facilitating coordination between relevant organizations, including non-Governmental Organizations (NGOs). In addition, it aims to reduce the negative effects of disasters through effective mitigation measures; ensure more systematic and timely responses to identified threats, ensure prompt responses when imminent and actual threats occur, provide an environment in which all organizations can effectively respond, increase transparency in coordination amongst agencies involved in disaster management operations, enhance the deployment of resources available at all times. The plan is based on lessons learned from previous disasters and comprises comprehensive deployment strategies, guidelines for packaging relief items, establishment, and management of temporary camps, destruction assessment teams, disaster preparedness plans, and procedures for dealing with long-term problems such as reconstruction and rehabilitation.

V. CONCLUSIONS

Disasters are inevitable, but their occurrence can be avoided and reduced if proper precautions are taken. Disaster preparedness is one of the most important components of any disaster management plan because it involves mitigation strategies that can aid in leading us to post-disaster recovery. One of the key strategies mentioned in this paper is the creation of contingency plans or emergency plans by both private and public organizations. These plans involve provision for evacuation routes and ensuring enough fuel supply, food supplies, and spare medication in case of an emergency. Additionally, it is also essential for organizations to hire young professionals who have expertise in handling emergencies. This will help in effectively communicating with those affected during times of crisis. There needs to be proper communication among stakeholders especially during disasters to share information on everything from expected scenarios before an incident occurs to reduce panic among people who might have been affected by such events.

Altogether, disaster preparedness and management are essential for an effective response to disasters, providing for more resilient communities, better responses, and reduced loss of lives. It should be noted that disaster preparedness and management must be consolidated within the development plans as key strategies immediately after the post-conflict period to ensure sustainable recovery and prevent repeated or recurring disasters. The paper identified the need for

significant improvements to current legislation, policies, and strategies for disaster preparedness, management, and mitigation to attain a more synchronized and well-coordinated effort toward preparedness, management, and mitigation of disasters if and when they occur. The catastrophic socioeconomic impact of the recent disasters in Kenya is so intense that it caused a crisis, a situation where there is no available course of action to avoid an adverse outcome and the efforts that have been made so far are commendable. However, this review establishes the disjointed nature of several departments and overlapping responsibilities which may at times cause confusion and delay recovery processes or optimal allocation of resources for the attainment of the best possible outcomes that save lives, livelihoods, and property.

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