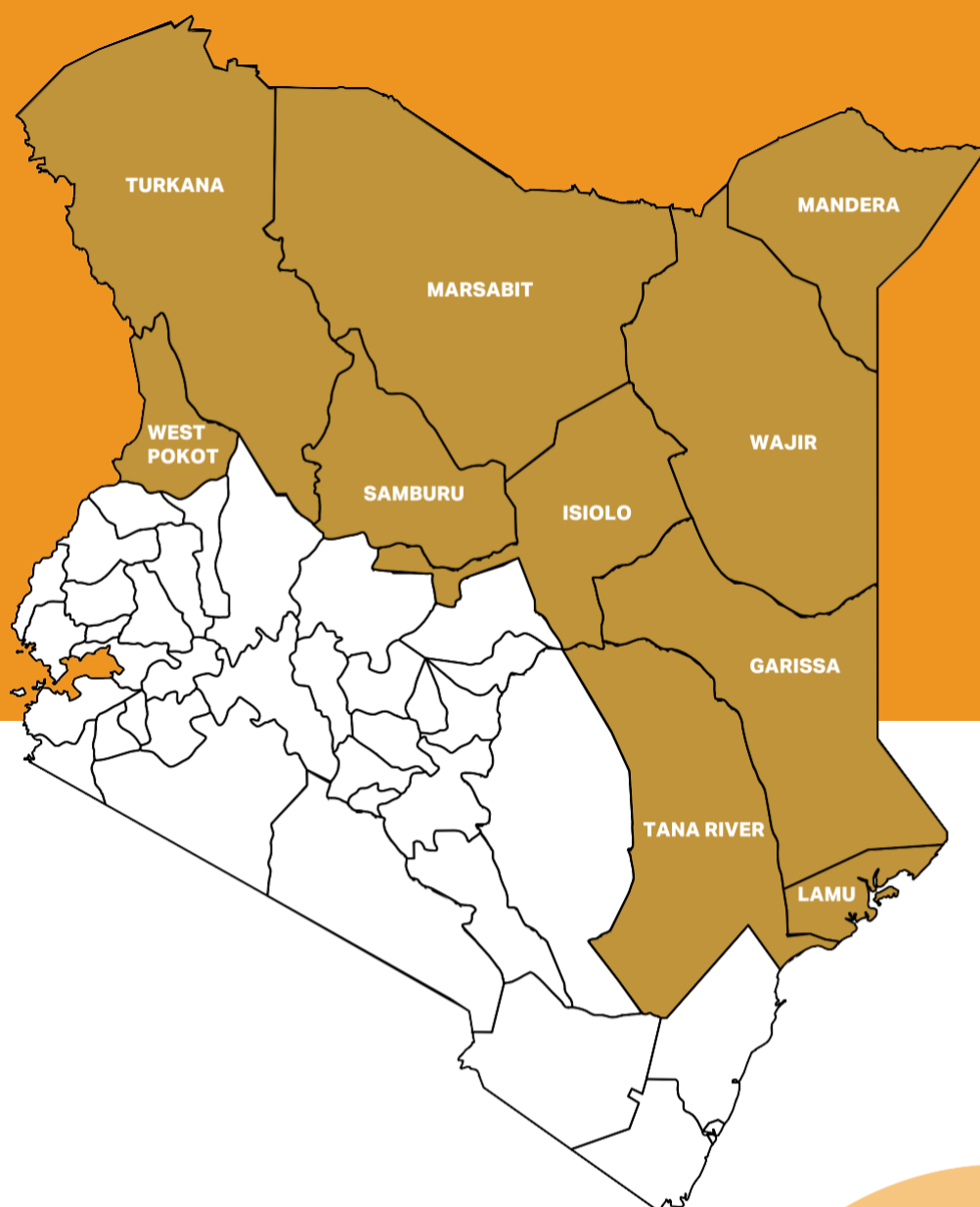


POLICY BRIEF

THE EL NINO FLOODS IN NORTHERN KENYA



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1. INTRODUCTION

1.1. The Frontier Counties Development Council

The Frontier Counties Development Council (FCDC) is a coalition of ten county governments: Garissa, Isiolo, Lamu, Mandera, Marsabit, Samburu, Tana River, Turkana, Wajir, and West Pokot. Its primary objective is to foster economic growth by promoting the exchange of information among these counties, thereby strengthening devolution and fostering socio-economic development. The Council also aims to cultivate peaceful coexistence among its member counties. Its responsibilities include facilitating the examination and incorporation of pertinent policies, particularly those impacting frontier counties, to ensure effective collaboration among relevant agencies and authorities within and beyond county boundaries.

The regions covered by FCDC are highly susceptible to climate change, characterized by recurrent floods. This is further exacerbated by the region's disproportionate poverty burden compared to other parts of Kenya. The Council is particularly alarmed by the current El Niño floods affecting livestock production, posing a threat to the lives and livelihoods of local communities. In light of these challenges, FCDC has initiated a swift desk review and rapid assessment to gauge the impact of the ongoing El Niño floods in 2023. The aim is to formulate both short-term and long-term recommendations. The findings will be condensed into a policy brief and a concise video documentary, providing valuable insights for addressing the pressing issues at hand.

1.2. Overview of Northern Kenya economy

The livestock sector is a crucial source of livelihood for a significant portion of Kenya's population, particularly in the Frontier Counties Development Council (FCDC) region. This sector contributes approximately 12% to Kenya's GDP and 42% to its agricultural GDP. As of 2019, the region's livestock was estimated to be worth US\$1.13 billion, with the livestock sector accounting for 92% or US\$1.04 billion (Nyariki & Amwata, 2019). Over 90% of the FCDC population relies on livestock which is the dominant livelihood in Northern Kenya.

Multiple factors hinder livestock sector development in Northern Kenya, including high costs of essential inputs, recurrent droughts, absence of reliable local markets, limited processing capacity, insecurity, climate-induced migrations, and limited access to public amenities. susceptibility to floods and poor civil

infrastructure hindering access to input and output markets. The FCDC region has a feed and fodder deficit, low animal health services, difficulty accessing credit, lack of appropriate technology. Overall, addressing these multifaceted challenges is essential for sustainable growth and resilience in the FCDC region's livestock industry.

1.3. Previous El Niño Phenomena And the Response

The term El Niño (Spanish for 'the Christ Child') refers to a warming of the ocean surface, or above-average sea surface temperatures, in the central and eastern tropical Pacific Ocean. El Niño occurs when warm water builds up along the equator in the eastern Pacific. The warm ocean surface warms the atmosphere, which allows moisture-rich air to rise and develop into rainstorms.

Kenya had recorded El Niño-induced floods beginning in 1964 when it grappled with the so-called "Uhuru floods." Recently witnessed strong El Niño events in Kenya are 1972/1973, 1982/1987, 1991/1992, 1997/1998, 2015, 2018, and 2023. Two of the most intense El Niño rains were in 1963/1964 and 1997/1998 and are remembered for their devastating effect on the country.

Owing to the recurrence of the El Niño floods and the loss of life and livelihood associated with them, Kenya established the Kenya National Disaster Operations Centre (NDOC) in collaboration with other government ministries, international organizations such as United Nations (UN) agencies, non-governmental organizations (NGOs), and other stakeholders to respond to disasters. NDMA is mandated to manage drought while NDOC responds to all other disasters. The National Disaster Operations Centre (NDOC) of Kenya was established in January 1998 by an act of Parliament to act as the focal point for coordinating response to emergencies and disasters in Kenya. Its mandate is to monitor, coordinate, mobilise national resources to respond to disaster incidents in the country. Its reporting centre runs 24 hours a day, 7 days a week, from which emergency operations, activities, and events are recorded and communicated for action¹.

2. THE 2023 EL NIÑO-INDUCED FLOODS

Immediately following the worst drought in four decades, Kenya experienced unrelenting rainfall beginning in early November 2023. By the end of November, out of the 47 counties in Kenya, 38 had been affected by the El Niño-induced rains, leading to a dangerous confluence of floods, landslides, and flash

1 <https://www.un-spider.org/kenya-national-disaster-operations-centre-ndoc>. (Accessed: Nov. 6, 2023)



floods. The counties worst hit by the floods have been Northern Kenya, including Garissa, Mandera, Wajir, and Tana River.

The floods, attributed to extreme climate events, have devastated communities, infrastructure, public service delivery, households, and all socio-economic activities in the worst-hit areas. The El Nino rains have caused severe flooding, marooned areas, washed away homes, displaced people, submerged farmlands, drowned and killed livestock, and by December 8, 2023, it had caused the deaths of at least 168 people².

Severe rainfall and flooding have persisted in various regions of Kenya, including Central, Coastal, Southeastern, Northwestern, Western, and Northeastern areas. By December 18, 2023, authorities disclosed the death of 174 individuals, over half a million people were displaced, and more than 30,000 refugees were also affected. The majority of those impacted, around 90 percent, reside in Mandera, Garissa, Tana River, Wajir, Isiolo, and Meru counties. The Kenya Red Cross Society has identified 180 makeshift displacement camps, with 61 in Tana River County alone. While some residents in Garissa, Mandera, and Wajir counties are returning home due to receding water levels, there remain concerns about waterborne diseases like cholera and diarrhea in flood-affected areas, with new cholera cases reported in Tana River County in December. Despite ongoing needs, humanitarian assistance has reached 463,000

people thus far.³

The FCDC region experienced significant damage to various roads during the El Niño floods. Specifically, the Nuno-Modogashe-Wajir-Mandera Road was affected at the Maalmim section, approximately 102 km from Modika, where flood waters washed out about 900 meters of the road. Another section of the same road at Togbub faced a loss of 600 meters due to flooding. Ohio, Maandathe, and Kutulo were also impacted. Mudogashe-Habaswein road was affected at Scansca near Habaswein. The Madogo-Garissa(A3) Road, particularly the Kona Punda and Mororo areas, was damaged but has since been repaired. The Tula Bridge on the Thika-Mwingi-Garissa road suffered a cut of approximately 1.2 km on November 24. Additionally, the Hola-Wayu-Waldena Road and the Lago section along the Madogo-Modika-Daadab-Liboi Road were affected. Sections of the Wajir-Griftu-Eldas-Buna-Dabel-Moyale Road that were affected are now passable at Dela, Buna, and Korondile.⁴

According to the Kenya National Highway Authority (KENHA), intense rains in Marsabit County caused the Malgis River to overflow its banks, resulting in flooding that affected Logologo and the Isiolo— Marsabit – Moyale Road. River Hallam became impassable cutting off road access between Kargi and Marsabit towns. To facilitate transportation between the two towns, a bridge over the Hallam River will need to be built⁵.

2 <https://www.the-star.co.ke/news/2023-12-08-el-nino-three-more-dead-death-toll-rises-to-168/>. (Accessed: Dec. 9, 2023)

3 <https://reliefweb.int/report/kenya/kenya-heavy-rains-and-floods-impact-and-response-20-december-2023>. (Accessed: Nov. 21, 2023)

4 <https://www.the-star.co.ke/news/2023-12-05-el-nino-havoc-number-of-damaged-roads-restored/>



The El Nino floods have flooded grazing lands and negatively impacted the availability of pasture for livestock in Northern Kenya. This is exacerbated due to the destructive nature of the floods in Northern Kenya; people cannot simply migrate with their herds as they would in dry weather conditions. However, this figure does not include the deaths due to livestock disease outbreaks and lack of pasture.

The El Nino rains came when the ASAL region was still recovering from the worst drought in four decades that, affected the pastoralist livelihood of local communities and surged the malnutrition rates. The destructive effects of the heavy rains hindered access to clean water and adequate food, thereby threatening lives and livelihoods. According to the Agency for Technical Cooperation and Development (ACTED), due to persistent climate shocks, 2.8 million people in the ASAL region were already suffering from acute food insecurity (IPC Phase 3 or above) before the onset of the 2023 El Nino-induced floods in the region⁶. The flood-induced destruction of food systems and livelihood loss in the ASAL could potentially exacerbate inter-communal conflicts and violence and had to the existing conflicts spanning Marsabit, Turkana, and

Samburu.

The region's poor infrastructure led to flooding towns and villages and destroying public amenities, including hospitals, schools, and public offices in the ASAL counties. Moreover, this is a region in which communities that had displayed resilience against famine and clean-water scarcity during the famine were now presented with the problem of flash floods and rising flood waters submerging houses, crops, and livestock and causing food shortages (IFRC, 2023). Consequently, in the wake of the El Nino rains, the flood-prone counties, including Wajir, Marsabit, Turkana, Mandera, Garissa, and Samburu, experienced livestock deaths, displacement of households and communities, the destruction of property and infrastructure (homes, roads, and markets) and the loss of human lives. The Kakuma (Turkana County) and Dadaab (Garissa County) refugee camps have also been affected, with five flood-linked deaths reported in Dadaab by 8 November 2023. However, the neighboring Mandera County had the most reported deaths.⁷

The consequences of the El Nino-linked floods in Northern Kenya transcend immediate concerns. Disease outbreaks, including vector-borne and water-borne diseases such as cholera, dysentery, typhoid, and malaria, are constant threats associated with the El Nino rains⁸. El Nino also has a long-term impact on livelihood sustainability for households and communities due to the death of livestock and the flooding of farmlands. Communities in Northern Kenya are primarily pastoralists. The death of animals and the flooding of range land hinder the recovery of herd numbers, affecting livelihoods and precipitating food insecurity.

Sector Analysis of the Impact of El Nino Floods

2.1. Transport and Communication Sector

The El Nino rains and floods destroy the transport and communication network, disrupting economic activities. Floods and landslides damaged road, water, and air transport systems. In the 2023 flooding, roads have been destroyed, and bridges have collapsed, cutting off communities from vital services, including access to hospitals, schools, and other public services. More than 150,000 km of urban and rural road transport networks have been destroyed, leading to complete paralysis of the transport system in several parts of

6 <https://reliefweb.int/report/kenya/kenya-el-nino-response-plan-emergency-flood-alert-october-2023>. (Accessed: Dec. 8, 2023)

7 <https://reliefweb.int/report/kenya/kenya-humanitarian-impact-heavy-rains-and-flooding-flash-update-1-8-november-2023>. (Accessed: Dec. 8, 2023)

the country, especially in hard-hit Northern Kenya.⁹

The El Nino rains have affected the shipping and aviation industries through the flooding of facilities and other associated problems, such as loss of power due to the destruction of the power supply system. Several scheduled and chartered flights were rescheduled due to the submergence of ground-based navigation equipment and poor visibility. Concerning communication systems, the rains led to the destruction of the communication facilities due to falling trees destroying communication cables, collapse of communication masts, and flooding of the underground cable channels. The interruption of electricity supply by floodwaters, collapsing buildings, and mud/landslides led to some parts of the country being cut off from the communication system.

2.2. Water Resources Sector

The water resources sector is one of the key areas of Kenya's socio-economic fabric that has been devastated by the El Nino rains and related floods of 2023. However, the sector was also affected by the previous floods of 1964, 1968, 1982, 1985, 1990, 1997, 2015, and 2018.¹⁰ The negative impacts of the El Nino events include flooding that caused increased soil erosion in areas with weak land management and land use practices in poorly planned urban centers, increased overflow of dams, rivers, and lakes, widescale property destruction, and water pollution. Incidences of water-borne and vector-borne outbreaks have been recorded.

The general cost of the 2023 floods is hard to estimate, but it could be in the tens of millions of dollars. Nonetheless, ElNino-induced floods also positively enhance water availability for agricultural activity, reviving grassland and rangeland in areas where pastoralism is practiced and recharging the water reservoirs and dams, thereby boosting hydroelectric power production.

2.3. Agriculture Sector

Agriculture forms the mainstay of the Kenyan economy. Kenya's evolution of the agriculture sector since independence reveals a landscape characterized by an intricate interplay of historical, technological, economic, population, and environmental dynamics. At independence, Kenya faced the daunting task of

realizing economic prosperity, and agriculture was earmarked in policy cycles as the key driver of economic development. This was followed by government-led initiatives to modernize agriculture and boost agricultural productivity. However, challenges concerning land distribution and management, urban migration, the shift toward cash crop farming, climate change land fragmentation, and small holdings hinder the scalability of modern farming techniques.

Like previous El Nino-induced flooding in Kenya, the 2023 floods have devastated agriculture, including livestock. The abundance of rainfall affected the production of certain horticultural crops, driving their prices high. The floods have affected farms through water logging farms and rangeland, further reducing crop and animal production yield. In Northern Kenya, the floods have destroyed livestock water facilities, resulting in livestock deaths and households losing entire herds. The number of animals lost has not been determined, but from previous experiences, such as that in 1997-8 estimated at US\$236 million, the 2023 loss may be even higher.¹¹

2.4. Livestock Sector

Northern Kenya, particularly the FCDK region, is the focal point of livestock production in Kenya, with over 90% of the population relying on the sector for food, nutrition, and livelihood. At the same time, the region has been the epicenter of the 2023 El Nino- induced floods. Therefore, the flooding has devastated livestock and the entire livestock sector, threatening food security and livelihoods of the local communities and households.

The initial impact of the El Nino floods on the livestock sector in Northern Kenya, was the inability to access higher grounds for livestock as farmers were unable to move their livestock due to rising water levels¹². This was compounded by the washing away of the bridges and access roads by the flood waters in Northern Kenya as rivers burst their banks. Pastoralists in Garissa, Turkana, Marsabit, and Mandera lost thousands of their herds, including goats, sheep, camels, and cattle, when rivers Tana, Hallan, Malgis, and Daua burst their banks, flooding neighborhood farmlands, drowning and washing away cattle.

9 <https://reliefweb.int/report/kenya/kenya-humanitarian-impact-heavy-rains-and-flooding-flash-update-2-20-november-2023>. (Accessed: Dec. 9, 2023); IFRC, 2023

10 Opere, A. (2013). Floods in Kenya. *Developments in Earth Surface Processes*, 16, 315 – 330. DOI:10.1016/B978-0-444-59559-1.00021-9

11 <https://masomomosingi.com/disaster-response-knec-notes/>. (Accessed: Nov. 21, 2023)

12 <https://nation.africa/kenya/counties/marsabit/why-number-of-cattle-is-diminishing-in-the-north--3788576#:~:text=Data%20from%20>

Therefore, in Northern Kenya, the El Nino floods have exacerbated rather than reduced the food security pressures of the region. Households lost herds to flash floods, thereby being put in dire food insecurity situations and their livelihood becoming destroyed. The few livestock that households had left owing to a period of a prolonged severe drought were drowned by the flood waters, and the remaining grazing land was submerged. In Marsabit County, 80% of the livestock had been killed by the prolonged drought and much of the 20% that remained had been killed by the flood waters.¹³

The El Niño floods have had diverse impacts on livestock, encompassing issues such as pasture spoilage and flooding, contamination of water sources, and adverse effects on animal health through the outbreak of livestock diseases. Additionally, pastoralists face challenges in receiving necessary support, including limited access to veterinary services.

2.5. Health Sector

The 2023 floods are considered the worst in Kenya's post-independent history and have stretched the country's health sector beyond its capacity. The floods destroyed several health facilities, making healthcare inaccessible to rural populations. In some instances, access to healthcare facilities has been made impossible due to the destruction of road networks in some areas. Water sources have been contaminated, increasing the risks of contracting water or vector-borne diseases for residents and remotely located communities. There is an increase in overgrowth and stagnant water around homesteads. The blockage of open drains and sewers has increased the risks of exposure to water-borne and vector-borne diseases such as Cholera, amoeba, Dysentery, Typhoid, and Malaria.

3. RESPONSE TO 2023 EL NINO FLOODS

The government of Kenya has endeavored to address the effects of climate change-induced disasters such as the El Nino crisis. At the national level, the government has tried aligning its national policies with regional and international frameworks and initiatives linked to climate change disasters. For instance, Kenya has adopted the National Climate Change Response

Strategy and the National Adaptation Plans and enacted the Climate Change Act.

At the county and sub-county level, all 47 Counties are implementing Climate Action and have created the County Climate Action Plans (CCAP) and the County Climate Change Funds (CCCCF). The CCCC has allocated about KSh—3 billion to augment climate actions according to local realities and needs.¹⁴ Moreover, counties have created county climate change planning committees that could significantly build resilience and the adaptive capacities of households and communities.

Gok established the National El Nino Emergency and Disaster Response Center, a multi-agency flood team tasked with monitoring floods and warning at-risk communities¹⁵. Kenya also established the National El Nino Steering Committee consisting of the Kenya Defence Forces (KDF), the Kenya Coast Guard Service (KCGS), the National Police Service (NPS), the National Youth Service (NYS), and the Kenya Wildlife Service (KWF) which are mandated to coordinate the flood emergency response efforts¹⁶.

The government of Kenya (GOK), in collaboration with agencies, county governments, NGOs, and sub-county actors, had established EWS for natural disasters, including El Nino, which was activated to create awareness. The Kenyan Meteorological Department is part of the broader system to provide regular weather updates on the impending El Nino event and prepare communities to evacuate to safe areas or take other "early action."

The initial focus was on early warning systems (EWS) as intervention safeguards against deaths. The El Nino floods in Kenya were forecast months earlier by the Kenyan Meteorological Department, which explained that abnormally high rainfall was to be witnessed in the country from early November 2023. The Famine Early Warning Systems Network (FEWS NET) issued a similar forecast, which used sophisticated computer models to predict the extreme climatic pattern. For instance, in October 2023, FEWS NET issued an alert warning of above-average rainfall across the Horn of Africa¹⁷.

13 <https://www.tearfund.org/stories/media/press-releases/press-release--rain-in-marsabit-more-destructive-than-helpful-as-floods-kill-livestock>. (Accessed: Nov. 21, 2023)

14 <https://www.talkafrica.co.ke/the-world-needs-coordinated-regional-strategies-to-deal-with-transboundary-environmental-shifts/>. (Accessed: Nov. 6, 2023)

15 <https://www.foxweather.com/extreme-weather/disease-outbreak-el-nino-flood-kenya>. (Accessed: Nov. 6, 2023)

16 <https://www.theeastafrika.co.ke/tea/news/east-africa/el-nino-floods-have-killed-120-people-government-says-4448650>. (Accessed: Dec. 8, 2023)

The GOK developed the El Nino Preparedness and Response Plan, which was to be the framework for multi-sectoral response efforts. This involved communication for Community Preparedness through national and county-level coordination forums. Government authorities, including County Commissioners and Chiefs, were activated to communicate the impending El Nino rains. The Kenya Red Cross identified the Northern Kenya counties as the possible epicenters of the crisis¹⁸

The Steering Committee on Flood Response has partnered with 11 ministries to ensure an effective response to the El Nino-related emergency. These ministries are National Administration, Defence, Roads and Transport, Interior, Water, Sanitation and Irrigation, Education, Public Works, Health, Agriculture and Livestock Development, Housing and Urban Development, EAC, Energy and Petroleum, Labour and Social Protection, and Regional Development. The Committee has also collaborated with the Council of Governors, the Kenya Red Cross Society, and the World Food Program to supplement response and interventions in the El Nino emergency.

4. RECOMMENDATIONS

To effectively address the recurrent challenges posed by El Nino occurrences in Kenya and mitigate their consequences, a comprehensive set of long-term recommendations is proposed. These include:

1. Implementation of livestock insurance and social protection measures to minimize the impact of El Nino-induced floods,
2. Establishment of county disaster funds to diversify food systems and enhance resilience, and
3. Provision of comprehensive services such as improved veterinary services and disease control measures.
4. Conflict resolution is prioritized at the county level to ensure effective disaster response,
5. Land-use planning to consider El Nino-induced floods and urban infrastructure upgrades.
6. A framework for county coordination and effective early warning systems is essential, involving communities in ASAL counties in preparative measures.
7. Ecosystem-based approaches are advocated to address climate change-induced disasters, emphasizing local communities, county

governments, and institutions as primary agents.

However, in the Short term, the following is recommended:

1. **Emergency Food Distribution (or use cash transfers):** In times of crisis, ensuring food security is paramount. Emergency food distribution programs or the use of cash transfers can be instrumental in providing immediate relief to affected populations.
2. **Emergency Shelter and Essential Items:** Displaced and vulnerable populations residing in camps often face dire living conditions. To address this, it is crucial to provide emergency shelter, which may include tarpaulins, tents, and essential household items, ensuring a measure of safety and comfort.
3. **Water, Sanitation, and Hygiene (WASH) Interventions:** In the aftermath of a disaster, access to clean water and proper sanitation becomes critical. WASH interventions play a pivotal role, encompassing household water treatment chemicals, soaps, jerricans, and sanitary pads. These efforts contribute significantly to maintaining hygiene and preventing the spread of waterborne diseases.
4. **Health and Medical Assistance:** Health crises often accompany disasters, necessitating swift and targeted medical responses. Providing cholera kits endorsed by the World Health Organization (WHO), Acute Watery Diarrhea Drugs, and implementing a Rift Valley Fever (RVF) response are essential components of comprehensive health and medical assistance during emergencies
5. **Restocking of the affected communities:** In the aftermath of the El Nino floods in Northern Kenya, urgent measures are required to restock pastoralists who have been severely affected. The devastation wrought by the floods has taken a toll on livestock, a crucial livelihood for these communities. Immediate restocking initiatives are essential to revitalizing their pastoral activities, providing not only economic relief but also ensuring the restoration of their traditional way of life. Timely and targeted support, including the provision of livestock and necessary resources, is vital for enabling pastoralists to rebuild their herds and regain their resilience in the face of environmental challenges triggered by the El Nino phenomenon.

18 <https://www.the-star.co.ke/news/2023-11-13-el-nino-red-cross-identifies-3-regions-at-high-risk-in-next-two-weeks/>. (Accessed: Nov. 6, 2023)

