

EARLY ACTION PROTOCOL ACTIVATION

Kenya | Riverine floods

Date: 10 November 2023



The Kenya Red Cross DSG painting flood markers that demarcated flood risk areas, during the flood EAP simulation exercise in Busia Kenya. Photo credit: Martha Awino, KRCS.

EAP №: EAP2021KE01	Operation №: MDRKE053	EAP approved: 04/10/2021	EAP revised timeframe: 04/10/2021- 03/10/2026
Trigger date: 04/11/2023	Early action lead time: 7 days	Early action timeframe: 4 days	

Budget: 192,698 CHF
To assist: 150,000 people

EARLY ACTION PROTOCOL ACTIVATION

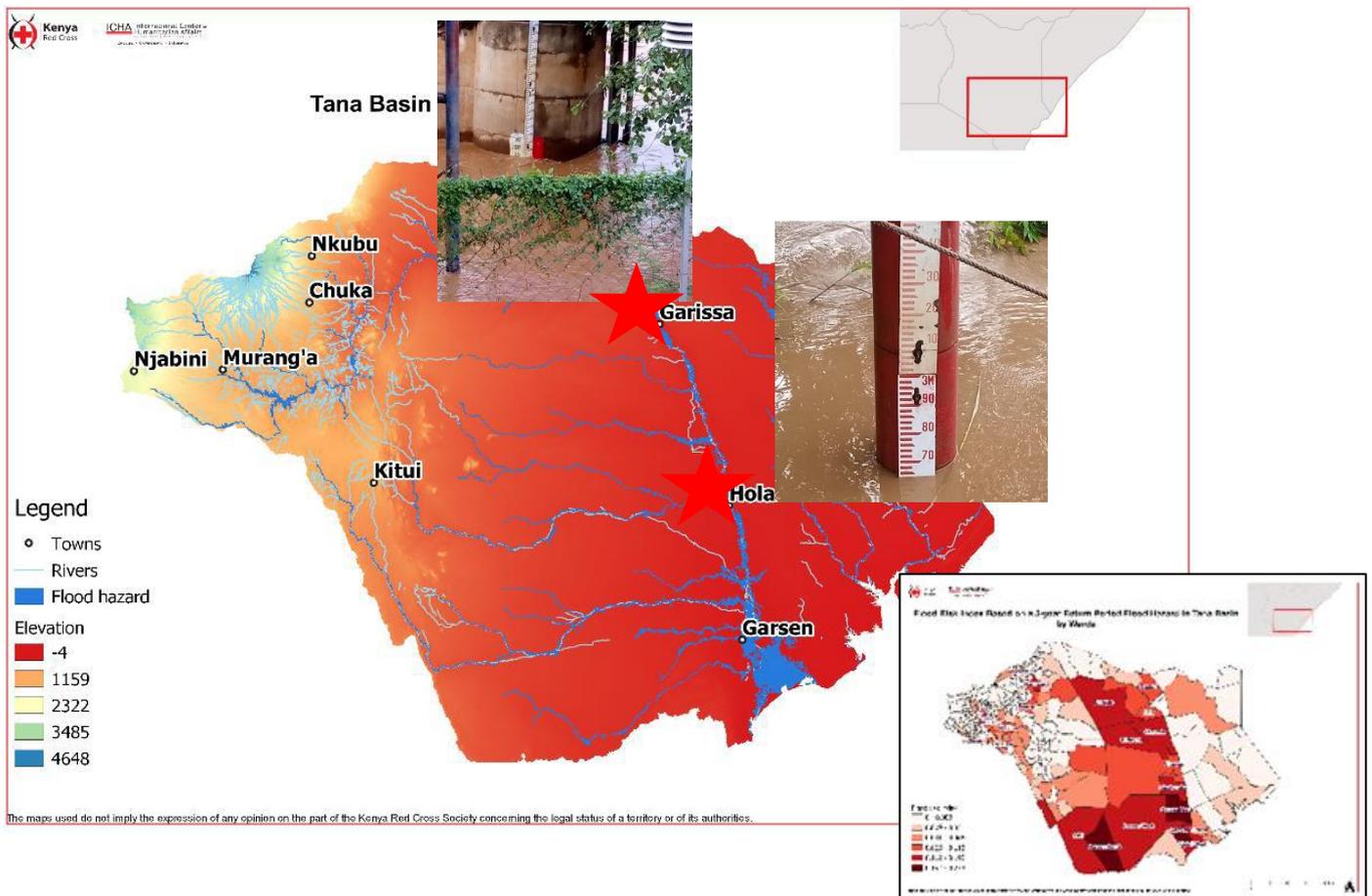
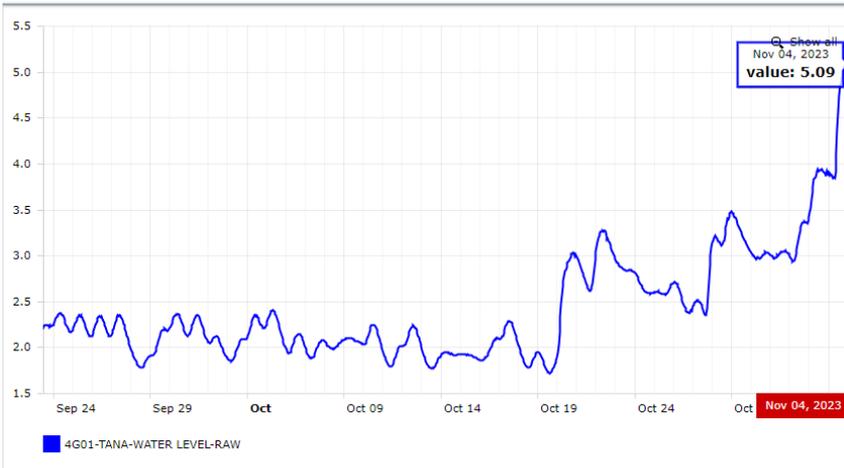


Figure 1. An imminent flood hazard emanating from rising water levels over Tana River, first observed over Garissa Bridge River Gauge Station (RGS401) on November 2nd (see Figure 1a). Currently (November 4th) the flood wave has reached a station further downstream (at Hola). Inserted in the map are calibrations at the river gauge stations at Garissa and Hola, where values above 4 meters are shaded red used traditionally to indicate a flood wave. The bottom right insert shows flood risk areas from a 1-in-5 year extreme flood event.

Activation Overview

The *Kenya Red Cross Society* (KRCS) has activated its Early Action Protocol for *riverine floods*.

Tana River basin constitutes one of the main river basins in Kenya. Over lower Tana basin, floods have previously been experienced, adversely affecting the communities resulting in humanitarian crises in the years 2013, 2015, 2018 and 2020 according to the Kenya Flood EAP. For this reason, the Kenya flood EAP covers this and two other basins (Nzoia and Athi). On July 4, 2023, the World Meteorological Organization declared onset of El Nino. The phenomenon is known to enhance seasonal rainfall over Kenya and most parts of the world. In August 2023, the Kenya Meteorological Department (KMD) issued the October to December seasonal forecast for Kenya that emphasized on above average seasonal rainfall expected, driven by El Nino coupled with a positive Indian Ocean Dipole. The rainfall season began peaking in the last week of October. Since the onset of the season in October, the season is exhibiting rainfall that lately, has abruptly been filling up the river channels.

Throughout this period, KRCS has been monitoring the risk of flooding. On 02 November, a flood wave was observed over Garissa Bridge— the first gauging station over lower Tana. The water level at this point reached 4 meters, a level that has been earmarked as alarming, for which the discharge overtops the riverbanks leading to flooding further downstream. The level is red-marked by the Water Resources Authority in Kenya to serve a flood alarm over the river basin. A flood wave observed at Garissa Bridge takes about 48 hours to reach the next station (Hola) in the downstream. By November 4th, water levels at Garissa had surpassed 5 meter mark— bordering the highest mark of the river gauge while the levels at Hola have reached alarm level. Additionally, rainfall forecast for the current week¹ indicates Kenyan central highlands are expected to continue receiving heavy rainfall. The flood wave is expected to begin overtopping riverbanks along the lower Tana as heavy rains continue to be experienced over central highlands and other Tana basin source regions. At this time, streamflow forecast at Garissa Bridge from GLoFAS model remain low, under the 1-in-2 year flood. While the GLoFAS forecast is the trigger as per the Kenya flood EAP, caution is taken not to ignore the observed imminent flood at this time. But we choose to proceed with activation of the flood Early Actions despite GLoFAS’s miss of this flood wave. We recognize analysis of the GLoFAS skill over Tana basin was relatively low with about double False Alarm Ratio (at 0.5) compared to performance of the model in other basins. We rather reckon that the low forecast skill in GLoFAS relates to lack of assimilation of observed data.

Therefore we consider that 2 conditions for activating the flood EAP have been met:

- a) A threshold for extreme flood has been met at Garissa Bridge and Hola giving creating anticipation of floods in the next few days
- b) Short range forecast indicates that heavy rainfall is expected to continue accumulating over the source region of River Tana

Table 1: Selected early actions activation steps

3 days to the impact	<p>Shelter Targeting and registration</p> <p>Livelihoods and basic needs Conduct rapid assessments to establish feasibility of CVA</p> <p>Health Activation of mobile health teams Provide psychosocial support to volunteers</p> <p>Water, Sanitation and Hygiene Sensitization on the use of water treatment chemicals</p>
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¹ <https://meteo.go.ke/sites/default/files/7day-forecast/SEVEN-DAY%20WEATHER%20FORECAST%20valid%2031st%20October%20to%206th%20November%202023..pdf>

	<p>Disaster Risk Reduction Activation of trained KRCS Volunteers and Staff Dissemination of early warning messages to communities at risk of being affected by floods</p>
2 days to the impact	<p>Shelter Distribution of shelter NFIs</p> <p>Livelihoods and basic needs Multipurpose cash grant</p> <p>Health Provide psychosocial support to volunteers</p> <p>Water, Sanitation and Hygiene Distribution of water treatment chemicals Deployment of emergency water treatment plants</p> <p>Disaster Risk Reduction Advocate for evacuation</p>
1 day to the impact	<p>Disaster Risk Reduction Physical evacuation</p> <p>Cross cutting Hold community review meetings to review ongoing implementation of the EAP</p>
0 day to the impact	<p>Cross cutting Lessons learned workshop</p>

Early Action Overview

PLANNED OPERATIONS

	<p>Shelter</p>	Female:	2,940	13,052 CHF
		Male:	3,060	
Indicator:	Number of people reached with shelter, housing and settlement interventions in advance of a hazard			
Priority Early Actions:	<ol style="list-style-type: none"> 1. Targeting and registration 2. Distribution of shelter NFIs 			

	<p>Livelihoods and basic needs</p>	Female:	5,880	116,860 CHF
		Male:	6,120	
Indicator:	Number of people reached with livelihoods interventions in advance of a hazard			
Priority Early Actions:	<ol style="list-style-type: none"> 1. Conduct rapid assessments to establish feasibility of CVA 			

2. Multipurpose cash grant

 Health	Female:	76,500	8,541 CHF
	Male:	73,500	
Indicator:	Number of people reached with health and care interventions in advance of a hazard		
Priority Early Actions:	<ol style="list-style-type: none"> 1. Activation of mobile health teams 2. Provide psychosocial support to volunteers 		

 Water, Sanitation and Hygiene	Female:	76,500	8,032 CHF
	Male:	73,500	
Indicator:	Number of people reached with WASH interventions in advance of a hazard		
Priority Early Actions:	<ol style="list-style-type: none"> 1. Sensitization on the use of water treatment chemicals 2. Distribution of water treatment chemicals 3. Deployment of emergency water treatment plants 		

 Disaster Risk Reduction	Female:	76,500	18,385 CHF
	Male:	73,500	
Indicator:	Number of people reached with risk reduction and/or climate adaptation interventions in advance of a hazard		
Priority Early Actions:	<ol style="list-style-type: none"> 1. Activation of trained KRCS Volunteers and Staff 2. Dissemination of early warning messages to communities at risk of being affected by floods 3. Evacuation 		

Strategies for Implementation

	27,292 CHF
Effective, credible and accountable IFRC	
Priority Early Actions:	

1. Hold community review meetings to review ongoing implementation of the EAP
2. Lessons Learned Workshop



**Strengthening
National Society**

535 CHF

Priority Early Actions:

1. Volunteer insurance

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Reference



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