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Kenya: Riverine Floods

Early Action Protocol summary

 International Federation
of Red Cross and Red Crescent Societies

EAP approved: **04th October 2021**

Population to be assisted: **210,240 people**

EAP timeframe **5 years**

EAP number **EAP2021KE01**

Budget: **332,278 CHF**

Early action timeframe **7 Days**

The IFRC Disaster Relief Emergency Fund (DREF) has approved a total allocation of CHF 332, 278 CHF from its Forecast based Action (FbA) mechanism for the Kenya Red Cross Society. The approved amount consists of an immediate allocation of CHF 139, 580 for readiness and pre-positioning and CHF 192,698 automatically allocated to implement early actions once the defined triggers are met.

The FbA by the DREF is a Forecast-based Financing funding mechanism managed by the DREF. Allocations for the FbA by the DREF are made from a separate financial component of the DREF (MDR00004) and do not affect the reserves of the DREF appeal code MDR00001. Unearmarked contributions to the FbA by the DREF are encouraged to guarantee enough funding is available for the Early Action Protocols being developed.

SUMMARY OF THE EARLY ACTION PROTOCOL

Kenya is a country in Eastern Africa, bordered by South Sudan to the northwest, Ethiopia to the north, Somalia to the east, Uganda to the west, Tanzania to the south, and the Indian Ocean to the southeast. It has a surface area of 580,367 km², and a population of 47.6 million people according to the 2019 census.

Kenya's geography and climate varies widely across the country, from regions of fertile agricultural lands and temperate climates in the western and rift valley counties, to dry and less fertile arid and semi-arid lands, to absolute deserts. The climate varies from tropical along the coast to temperate inland to arid in the north and northeast parts of the country. Kenya experiences two rainy seasons, namely the long rains season from March-April-May, and the short rains season from October-November-December. The hottest period is February and March, leading into the season of the long rains, and the coldest is in July, until mid-August.

Climate change is increasingly impacting the natural patterns of rainfall and temperatures in Kenya, leading to increased climate variability and more extreme weather events. The drought cycle has been reduced from every ten years to being an annual event, that last longer. Floods are also becoming increasingly frequent, and coastal communities are already experiencing sea-level rise. Droughts and floods are particularly severe in the hot and dry conditions of the ASALs. Temperatures are projected to increase with up to 2.5°C by 2050.

Kenya is the 7th most affected country globally by extreme weather events according to the Global Climate Risk Index 2020 report. The country experiences a range of disasters with devastating consequences, the most frequently experienced being droughts, floods, epidemics, and landslides. Out of these four, flood events account for 48% of all disasters recorded, 6% of people affected and 83% of total cost of damage. While drought has more devastating impacts, this hazard is addressed in another Early Action Protocol. Floods are a recurring risk that pose a threat in particular to people living in lowland, highland and urban areas. The types of floods experienced in Kenya include flash floods, river floods, coastal floods and floods due to heavy rains. All these types of floods were considered important during discussions with the National FbF Technical Working Group (TWG). However, there are currently no operational forecasts for flash and coastal floods in Kenya. Riverine floods can take several days or weeks to develop and are potentially predictable (ODI, 2019). In this regard, the FbF system developed in this EAP will focus on triggers and early actions to address impacts due to riverine floods.

This EAP has been designed and will be implemented by several organizations including National Disaster Operation Centre (NDOC), National Disaster Management Unit (NDMU), National Drought Management Authority (NDMA), Kenya Meteorological Department (KMD), Water Resources Authority (WRA), FEWSNET, Social Protection Directorate, Ministry of Health, World Food Programme (WFP), Food and Agriculture Organisation (FAO), Department of Resource Surveys and Remote Sensing (DRSRS), Regional Centre for Mapping of Resources for Development (RCMRD), St. Johns Ambulance, State Department of and Crop Development. Everyone involved in this plan has a key role during the preparation and activation of the Forecast-based Financing mechanism.

In Kenya, a National Technical Working Group (TWG) was established to develop the FbF system. The TWG is chaired by the NDOC and the secretariat is the KRCS. Members of the TWG contributed to developing this FbF system for floods. Various stakeholders have expressed commitment towards the activation and implementation of the EAP and these include: NDOC, KMD, WRA, FAO, St. Johns Ambulance, FEWSNET, KENGEN, WFP and National Social Protection Secretariat. Commitments include Memorandum of Understanding (MoU) and Letters of Commitment as well as being official members of the TWG, some organisations have made verbal commitment and will follow up with written commitment when the EAP is ready e.g., FAO.

Analysis for this EAP was done through creating a database of flood impacts, combining data from various reports and assessments as well as historical satellite imagery. From the database created, the frequency of flood events has been increasing between 2001 and 2020. More than 50 flood events across the country were recorded in 2013, 2015, 2018 and 2020. The observed rise in flood frequency, together with the projection that climate change will increase in future the frequency and intensity of extreme events, including floods, in the East African region (IPCC, 2014), makes floods a big concern in Kenya. The areas that have been most affected by floods between 2001-2020 are within the Nzoia, Tana and Athi basins, which will be the focus area for this initial EAP.

The National FbF TWG members reviewed the impacts on floods based on historical trends and also through their own experience during a flood response. The top five priority impacts of floods which will be addressed in this EAP include:

1. Deaths and people injured
2. Disruption/ inaccessibility of health services
3. Destruction or damage to houses leading to displacement of people
4. Outbreak of waterborne diseases affecting people
5. Outbreak of vector borne diseases affecting livestock

The output of the FbF process is an Early Action Protocol (EAP) for Kenya to be used as a tool to guide the timely and effective implementation of early actions based on specific weather or climate forecasts predicting flooding events that if they materialize and no proper actions are in place have a high likelihood of generating a humanitarian crisis. These crises could be avoided or minimized by the joint and timely action of the Government of Kenya, communities at risk, stakeholders including the UN Agencies and Development Partners and the Kenya Red Cross Society.

The operational strategy – How the EAP will be implemented

1) Who will implement the EAP – The National Society

KRCS is the largest humanitarian organization in Kenya, with presence in all the 47 counties in Kenya. Working through 47 county branches and 8 regional offices with over 600 staff, supported by a network of over 160,000 volunteers. As auxiliary to both the national and county governments, KRCS has gained wide acceptance with capacity to operate in areas considered hard to reach on the basis of geographical isolation and limitations in humanitarian access. The organization is also entrusted as the lead agency in all sudden onset disasters in the country by the government. This capacity and its acceptance by communities provides KRCS a strategic role in the implementation of the EAPs.

KRCS has extensive experience implementing operations including floods response, drought, population movement, epidemics among other emergencies. KRCS has been leading preparedness and response to floods operations in Kenya, among the most recent being in 2016, 2018, 2019 and 2020 floods response operations. These operations were multi-sectoral focused on WASH, Shelter, Livelihoods, Cash and Voucher Assistance and food security.

KRCS has established warehouses at the National and eight (8) regions that serve as the hub for prepositioning supplies for emergency response. The regional warehouses are strategically located within proximity of the identified flood prone Counties and the relief supplies items will be prepositioned in these warehouses. This will ensure they

are available for distribution within 7 days. KRCS has a fleet of vehicles deployed in the 8 regions across the country. These vehicles will support implementation of the EAP.

Cash and Voucher assistance will be provided as a modality for supporting affected communities. KRCS' has a strong capacity for implementing cash and voucher assistance with staff trained, SOPs developed and disseminated and strong support from SMT, KRCS governance and the government of Kenya. KRCS co-leads the cash technical working group, leading development of policy and implementing of cash and voucher assistance programmes in the country. KRCS will undertake a pre-registration of potential beneficiaries in the potential activation areas based on the 10 days forecast and the final list of the beneficiary will be validated within the 7-day lead times.

Upon finalization of the EAP, KRCS will undertake a simulation exercise to test the EAP in action. Findings from the simulation will help inform further areas of strengthening and improvement.

2) How will the EAP be activated - The Trigger

Early actions will be implemented in a two-step process: pre-activation step composed of activities that will be undertaken in preparation for the EAP activation, and EAP activation step once the trigger described below has been reached.

The pre-activation step will be initiated based on when the WRF model rainfall forecasts from KMD and/or ICPAC indicate that more than 150 mm of rainfall will be received within an upcoming 10-day/ 7-day period. This rainfall threshold is based on the severe weather threshold of 50 mm in 24hrs, as developed by the WMO Severe Weather Forecasting Demonstration Project in Eastern Africa, and the ICPAC definition of heavy rainfall over a 10-day period.

The EAP will be triggered when GloFAS issues a forecast where a trigger level will be exceeded, and the probability of exceedance is at least the probability indicated. Three trigger levels were defined for this EAP:

- Stations in Nzoia Basin a 5-year return period discharge (5.3m level/469.8 m3/s) with 85 % probability of exceedance
- Stations in Athi Basin a 5 year return period discharge period discharge (469.236 m3/s) with 85% probability of exceedance
- Stations in Tana Basin a 5-year return period discharge with (5.1m/1191.6 m3/s) 85% probability of exceedance

The EAP will be triggered with 7-day lead time forecast from GloFAS and 3-days lead time forecast KMD forecast will be used to monitor the flood wave and provide a stop or proceed mechanism: On the fourth day after activation of the EAP, GloFAS flood forecast and KMD's flood forecast will be reviewed to check the trigger threshold. If the forecast on this day indicates there is less than 40% probability of a flood occurring in the following 3 days and the KMD flood forecast does not indicate the threshold will be met, then the EAP activation will be stopped. The Head of DM at KRCS and the Director of KMD will be responsible to signal the stop mechanism based on the forecast. The stop mechanism will be activated on the fourth day if the threshold for the stop mechanism is reached.

With support from the 510 data team at the Netherlands Red Cross, an automated early warning system (the IBF System, where IBF stands for Impact Based Forecasting) in collaboration with KRCS and RCCC is under development. This will be an automatic system that monitors the forecasts, generates the intervention map and sends an alert message when the trigger is reached. The system will also show information from the EAP that is relevant in each phase of the early warning early action response. The IBF system is a web-app which means it can be accessed by any device. The IBF system is intended to be used by the Disaster Manager and counterparts among the governmental stakeholders led by NDOC, according to the agreed SOPs.

3) How will the EAP reduce the impact on the population – The early actions

To identify the early actions, KRCS conducted a literature review to identify potential early actions and came up with a list of thirteen (13) potential early actions. This was further supported by Key Informant Interviews (KII) and Focus Group Discussion (FGD). Out of this, the following early actions were prioritized in consultation with stakeholders from government, NGOs and communities on appropriate early actions to reduce the impacts:

- **Placement of flood markers:** Based on the identified flooding spots as per the forecast, this is a low-cost intervention that would see the placement of depth markers that would also serve as a warning for communities at crossing points. The community will be engaged through Cash for Work to place the flood

markers. This early action will help address the risk of death and injuries to people in areas affected by floods.

- **Dissemination of early warning messages for early actions:** This early action aims to warn of an extreme weather event beyond what is generally undertaken within the regular communication of forecasts across time frames at national, county, and sub-county levels. It will specifically look at actions to take in advance of heavy rainfall to communicate the potential risk of flooding for those areas identified as vulnerable. This EAP will support appropriate channels to ensure the most vulnerable are reached with timely and actionable information. This early action will address risks of death and injury to people, disruption/inaccessibility of critical services, and outbreak of waterborne diseases affecting people.
- **Physical evacuation:** This action is designed to ensure that people who are anticipated to be forcibly displaced by floods are able to take shelter in safer areas. KRCS in collaboration with other actors including the government and the community will prepare evacuation sites and give timely warnings and advisory messages for people to evacuate before floods hit and force immediate (disorderly) evacuation. This FbA offers one additional component, physical support to enable a swift and safe evacuation of people who might lack the ability to evacuate on their own. Support will include facilitation of people through Conditional Cash Grants or Vouchers to voluntarily move prior to flooding to areas of their choosing e.g. to a host (family, friends etc) and also to temporary shelter sites depending on the context. This will address risks of death and injury to people, and destruction or damage to houses leading to displacement of people.
- **Vaccination/treatment of livestock:** Veterinary care is being proposed as an anticipatory action to address disease/parasite burden during/after the shock, since animals are less resilient during floods, and also to prevent loss of livestock from the impacts of the floods. The support modality will include cash support (targeting Community animal health workers and information campaigns). This early action will address the risk of outbreak of vector-borne diseases affecting livestock.
- **Prepositioning of supplies:** Through this action, KRCS will preposition supplies (mainly Shelter and WASH NFIs) to ensure quick response in case of displacement of communities. This action will address the risks of destruction or damage to houses leading to the displacement of people, and outbreak of waterborne diseases affecting people.

The target population for these early actions is 35,040 HHs. Targeting for the dissemination of early warning messages and also placement of depth markers will be geographically specific to the intervention maps.

The selection of the early actions considered the scenario of a non-event and that their implementation would also contribute to disaster risk reduction/resilience building of the communities, through benefits such as awareness raising, readiness, preparedness, and vulnerability reduction. In addition, prepositioned supplies will remain in place for use in other future emergencies.

Intervention Sectors



Disaster Risk Reduction

People targeted: 210,240

Male: 103,018

Female: 107,222

Requirements (CHF): 32,575

Population to be assisted: KRCS will conduct awareness campaigns on the anticipated floods and its associated risks to targeting 210,240 people in floods prone areas through dissemination of early warning messages,

Intervention standards / benchmarks: The planned activities under this sector aim to meet the following intervention standards:

1. Core Humanitarian Standard - Principle 8 - that aims to ensure that communities receive information and support from competent and well-trained staff and volunteers
2. UNISDR Elements of an effective EWS - that calls for a people centered early warning system which empowers people at risk to have access to early warning information at the right time to enable them to act.

P&B Output Code	DRR Outcome 1: Communities in high-risk areas are prepared for and able to respond to disaster	# of people reached by KRCS with early warning messages. (Target: 210,240 people)						
	DRR Output 1.1: Communities take active steps to strengthen their preparedness for timely and effective response to disasters.	# of community assessments to understand knowledge, attitudes, practices and perceptions on early warning information and actions (Target: 2)						
	Activities planned	Timeframe (year)						
	Readiness activities	1	2	3	4	5	6	7
AP001	Engage communities in identification of safe locations for evacuation in case of floods emergencies	x	x	x	x	x		
AP001	Design of early warning messages including translation to relevant local languages	x						
	Pre-positioning activities	Timeframe (year)						
AP002	Procurement of floods early warning devices (megaphones)	x						

Early action activities		Timeframe (Days)						
AP002	Dissemination of early warning messages to communities at risk of being affected by floods	x						
AP002	Activation of trained KRCS volunteers and staff		x	x	x	x	x	x
AP002	Support evacuation of communities to safer areas (fuel for deployment of KRCS boat and allowances for the team)			x	x	x	x	x



Shelter

People targeted: 6,000

Male: 2,940

Female: 3,060

Requirements (CHF): 85,521

Population to be assisted: Through this action, KRCS aims to procure and preposition 1,000 NFI kits to support up to 1,000 families affected by floods in floods affected areas of Tana River, Garissa, Kisumu, Busia, Homabay and Migori counties.

Intervention standards / benchmarks: This intervention will aim to provide assistance in line with the Sphere Standards and PGI minimum standards in emergencies

P&B Output Code	Shelter Outcome 1: The immediate shelter and settlement needs of the target population are met	<i># of households provided with emergency shelter assistance which meet Sphere standards for the specific operational context (Target: 1,000HHs)</i>						
	Shelter Output 1: Emergency shelter assistance is provided to the target population	<i># of people provided with emergency shelter (Target: 6,000 people)</i>						
	Activities planned	Timeframe (year)						
	Readiness activities	1	2	3	4	5	6	7
AP006	Advocate for clearing of drainages and construction of dykes	x	x	x	x	x		
	Pre-positioning activities	Timeframe (year)						

AP005	Procurement and Prepositioning of HH items for 1,000 households (kitchen sets, tarpaulins, blankets, jerry cans, sleeping mats, bar soaps, mosquito nets)	x						
	Early action activities	Timeframe (year)						
AP005	Targeting and registration of affected communities	x	x					
AP005	Support operationalization of feedback and community communication channels	x	x					
AP005	Distribution of NFIs to 1,000 displaced households			x	x	x	x	
AP005	Mileage for distribution of NFIs			x	x	x	x	



Livelihoods and basic needs

People targeted: 12,000

Male: 5,880

Female: 6,120

Requirements (CHF): 116,860

Population to be assisted: Through this support, KRCS will aim to support families displaced by floods to access food and other basic needs in their evacuation centres.

Intervention standards / benchmarks: This intervention will aim to provide assistance in line with the Sphere Standards and the Kenya Cash Technical Working Group.

P&B Output Code	LBN Outcome 1: Communities are able to meet their immediate basic needs	# of households supported with cash (Target: 2,000HHs)						
	Livelihoods and Basic Needs Output 1: Communities are supported with cash grants to meet their basic needs	# of people/households reached through cash for basic needs (Target: 12,000 people)						
	Activities planned	Timeframe (year)						
	Readiness activities	1	2	3	4	5	6	7
AP081	Conduct rapid assessments to establish feasibility of CVA	x	x	x				

AP081	Multipurpose cash grants for 2,000HHs at Kshs. 5,467 per month for 1 month			x	x	x		
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Health

People targeted: 210,240

Male: 103,018

Female: 107,222

Requirements (CHF): 28,532

Population to be assisted: The health response will target to reach a total 210, 240 people to minimize the risk of outbreak of diseases. This intervention will be inclusive, targeting special groups including children below one year, children below five years, women of reproductive age, pregnant and lactating women, the elderly (>65 years) and people living with disability.

Intervention standards / benchmarks: This intervention will aim to provide assistance in line with the Sphere Standards.

P&B Output Code	Health Outcome 1: The immediate risks to the health of affected populations are reduced	# of people reached by community-based health activities (Target: 210,240)						
	Health Output 1: The health situation and immediate risks are assessed using agreed guidelines	# of people reached by KRCS with services to reduce relevant health risk factors (Target: 210,240)						
	Activities planned	Timeframe (year)						
	Readiness activities	1	2	3	4	5	6	7
AP021	Review and update the KRCS surge team pool	x	x	x	x	x		
	Pre-positioning activities	Timeframe (year)						
AP021	Procurement and prepositioning of a Cholera Kit	x						
	Early action activities	Timeframe (year)						
AP021	Deployment of KRCS surge teams for 7 days to support with disease outbreak management (Public Health Officers, Clinical Officer, Laboratory Technologist, Nurse)	x	x	x	x	x		
AP023	Provide psychosocial support to volunteers	x	x	x	x	x		



Water, Sanitation and Hygiene

People targeted: 210,240

Male: 103,018

Female: 107,222

Requirements (CHF): 26,239

Population to be assisted: Through this action, KRCS aims to procure and deployment of emergency water treatment plants to support provision of water to families affected by floods in floods prone areas.

Intervention standards / benchmarks: This intervention will aim to provide assistance in line with the Sphere Standards and PGI minimum standards in emergencies.

P&B Output Code	WASH Outcome 1: Immediate reduction in risk of waterborne and water related diseases in targeted communities.	<i>% of people practicing good water handling practices which includes use of sufficient water storage container (Target: 80%)</i>						
	WASH Output 1.1: Daily access to safe water which meets Sphere and WHO standards in terms of quantity and quality is provided to target population	<i># of people provided with safe water (Target: 210,240 people)</i>						
	Activities planned	Timeframe (year)						
	Pre-positioning activities	1	2	3	4	5	6	7
AP026	Procurement and Prepositioning of emergency water treatment (PUR, Aqua tabs)	x						
	Early Action activities	Timeframe (year)						
AP026	Sensitize communities on the use, and distribution of water treatment chemicals	x	x					
AP026	Deployment of emergency water treatment plants	x	x	x	x	x		

Strategies for Implementation

Requirements (CHF): 42,551

P&B Output Code	SFI Outcome 1: S1.1: National Society capacity building and organizational development objectives are facilitated to ensure that National Societies have the necessary legal, ethical and financial foundations, systems and structures, competences and capacities to plan and perform							
	SFI Output 1.1.4: National Societies have effective and motivated volunteers who are protected							
	Activities planned	Timeframe (Years)						
	Readiness activities	1	2	3	4	5	6	7
AP042	Design and printing of stickers with KRCS community feedback mechanisms	x	x	x	x	x		
AP084	Deploy trained volunteers to engage communities and support dissemination of early warnings	x	x	x	x	x		
AP084	Track, analyse and respond to community complaints and suggestions (will be done along with the next activity)	x	x	x	x	x		
AP084	Hold community review meetings to review ongoing implementation of the EAP	x	x	x	x	x		
AP040	Insurance for 120 volunteers	x	x	x	x	x		
AP040	Provide complete briefings on volunteers' roles and the risks they face	x	x	x	x	x		
AP058	Lessons Learned Workshop	x	x	x	x	x		
AP058	IFRC field monitoring visit	x	x	x	x	x		

Budget

The budget needed to implement the early actions prioritized and reach the most vulnerable when the EAP is activated is CHF 192,698. The implementation of the early actions once the EAP has been activated will be supported by key actors in government and development partners.

KRCS has identified costs to be covered by the IFRC FbF DREF budget amounting to **CHF 332,278**. These will contribute to the overall national budget for the EAP.

KRCS has budgeted for CHF 33,019 for readiness activities, CHF 106,561 for Pre-Positioning and, and CHF 192,698 for EAP activation.

Budget by Area of Intervention

Area of Intervention	READINESS	PRE-POSITION STOCK	EARLY ACTION	EAP Budget CHF
AOF1 Disaster Risk Reduction	12,584	1,606	18,385	32,575
AOF2 Shelter		72,469	13,052	85,521
AOF3 Livelihoods and Basic Needs			116,860	116,860
AOF4 Health	10,174	9,817	8,541	28,532
AOF5 Water, Sanitation and Hygiene		18,206	8,032	26,239
AOF6 Inclusion, Gender and Protection				0
AOF7 Migration				0
SFI1 Strengthen NS Capacities	10,261		535	10,797
SFI2 Ensure effective int'l disaster mgmt Influence others as leading strategic partners		4,462	27,292	31,754
SFI3				0
SFI4 Ensure a strong IFRC				0
TOTAL	33,019	106,561	192,698	332,278

Contact information

Reference documents



Click here for:

- Full EAP

For further information, specifically related to this Early Action Protocol please contact:

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How we work

All IFRC assistance seeks to adhere to the **Code of Conduct** for the International Red Cross and Red Crescent Movement and Non-Governmental Organizations (NGO's) in Disaster Relief and the **Humanitarian Charter and Minimum Standards in Humanitarian Response (Sphere)** in delivering assistance to the most vulnerable. The IFRC's vision is to inspire, **encourage, facilitate and promote at all times all forms of humanitarian activities** by National Societies, with a view to **preventing and alleviating human suffering**, and thereby contributing to the maintenance and promotion of human dignity and peace in the world.

The IFRC's work is guided by Strategy 2020 which puts forward three strategic aims:



Save lives,
protect livelihoods,
and strengthen recovery
from disaster and crises.



Enable **healthy**
and **safe** living.



Promote **social inclusion**
and a culture of
non-violence and **peace**.
