



EARLY ACTION PROTOCOL SUMMARY

Guatemala | Floods associated with Tropical Cyclones

May 2024



In the rural area of Suchitepéquez department, many crop fields are prone to becoming small ponds. Source: Plaza Pública/Simone Dalmasso.

EAP No: EAP2024GT02	Early action lead time: 3 to 5 Days	Operation No: MDRGT024
EAP approved: 16/05/2024	EAP timeframe: 5 Years	Operational timeframe: 3 Months

Budget: 547,206 CHF
To assist: 14,000 people

SUMMARY OF THE EARLY ACTION PROTOCOL

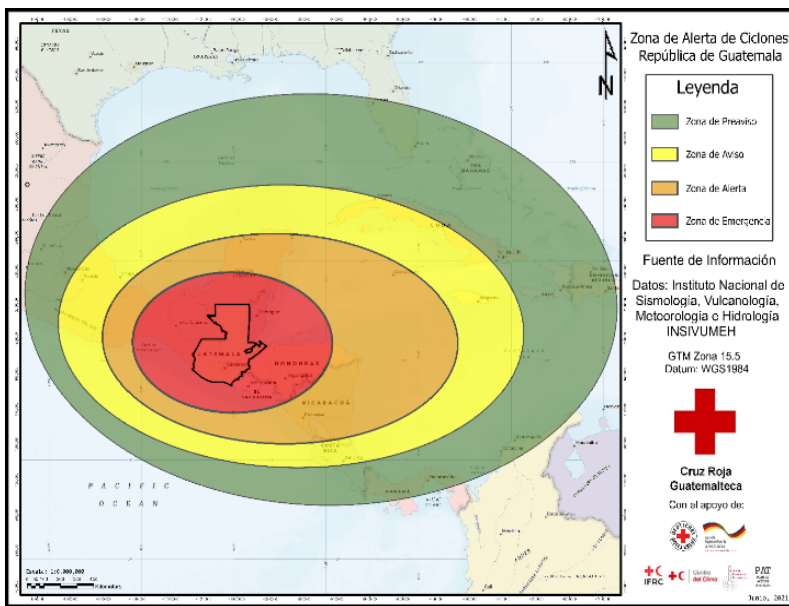


Figure 1. Cyclone warning zone, Republic of Guatemala. Source: INSIVUMEH

The IFRC Disaster Response Emergency Fund (DREF) has approved a total of CHF 547,206 for the implementation of the Guatemalan Red Cross – Floods associated with Tropical Cyclones Early Action Plan (EAP). The approved amount consists of an allocation of CHF 242,234 for readiness and prepositioning and CHF 304,972 allocated to implement early actions once the defined triggers are met.

Allocations are made from the Anticipatory Pillar of the DREF, under the DREF appeal code MDR00001. Unearmarked contributions to the DREF are encouraged to guarantee enough funding is available for the Early Action Protocols being developed.

The Republic of Guatemala, due to its geographic location, is in an area of high exposure to natural phenomena, mainly geological and hydrometeorological, which represent a threat to human life and health, to the loss of livelihoods, as well as damage to basic infrastructure and means of production, affecting the quality of life of Guatemalans.

The hydrometeorological phenomena that usually affect Guatemala are low pressure atmospheric systems, characterized by intense winds and abundant rainfall that originate over the Pacific and Atlantic oceans. The formation seasons of these cyclones are statistically more likely to occur in the Atlantic region, from June 1 to November 30, while in the Northeastern Pacific it is approximately from May 15 to October 31, which is commonly known as “Cyclonic Season”.

Tropical cyclones spend most of their lifetime over the oceans, because it is over the oceans where the main heat transports (latent and sensible) that feed these atmospheric disturbances occur. On the other hand, over continental regions, due to the existing land masses, they give up much of their energy to the ground, either in the form of rain or friction, and are therefore quickly dissipated.

In this sense, the Early Action Plan (EAP) for tropical cyclone floods is a tool to guide the timely and effective implementation of anticipatory actions based on specific hydrometeorological forecasts that could lead to an extreme event. These crises could be avoided or minimized through the joint and timely action of the Government of Guatemala, communities at risk, stakeholders, and the Guatemalan Red Cross. This document is the updated version of the EAP for the National Society, which was developed (and activated) in 2022.

This document has been developed by the Guatemalan Red Cross, who will also carry out its implementation, with technical support from the German Red Cross and scientific support from the Red Cross Red Crescent Climate Center. It also has the institutional support of the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH), the Executive Secretariat of the National Coordinator for Disaster Reduction (SE CONRED) and the Inter-University Platform for

Disaster Risk Management (InterU). All participants in this plan play a key role both in the preparation phase and in the activation of the Prognosis-Based Financing mechanism.

The EAP focuses on early actions to be taken in the face of flooding associated with tropical cyclones and is triggered by short-term forecasts of hurricane paths and flood forecasts. It explains the rationale behind the prioritization of early actions and provides step-by-step instructions for their selection and implementation in an effective and orderly manner. It also defines who takes what action, when, where and with what funds the early actions will be taken.

This plan does not operate in isolation. It is part of the National Society coordination processes for disaster risk management. Through this plan, it ensures that the early actions to be implemented in the time window between the moment the forecast is issued, and the possible disaster event are carried out in a timely and successful manner.

OPERATIONAL STRATEGY

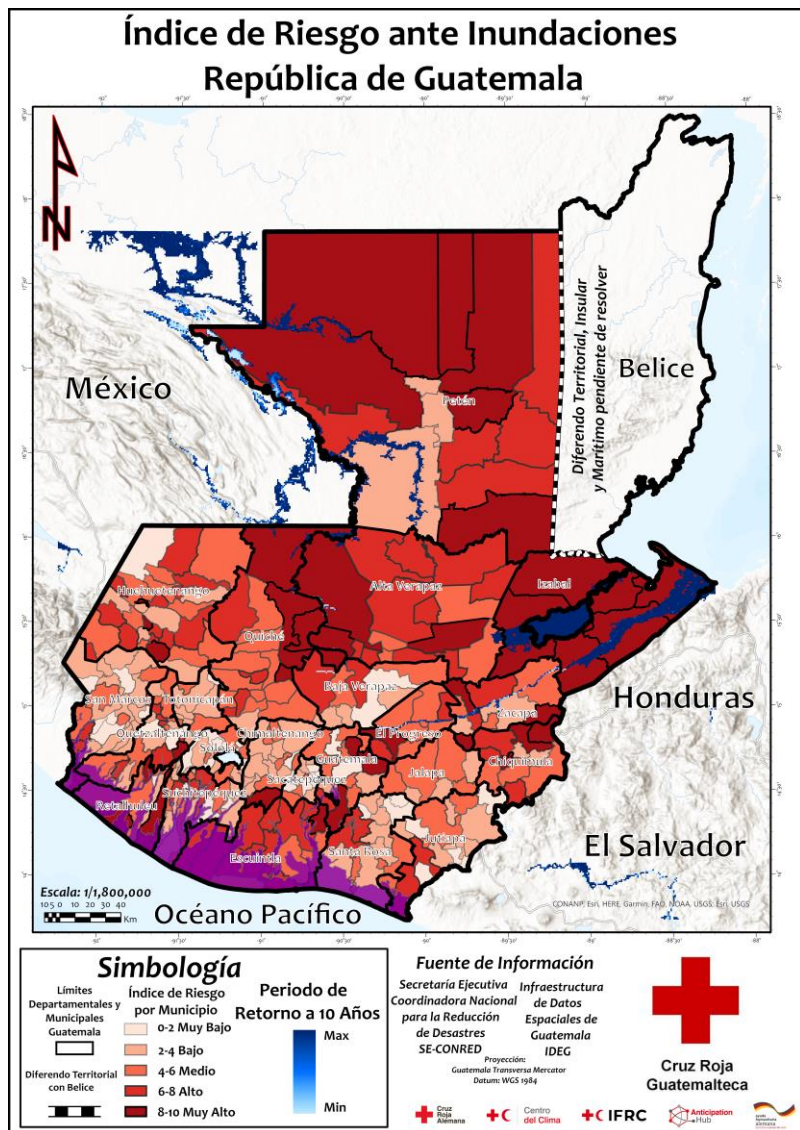
1. Who will implement the EAP - The National Society

The Early Action Plan (EAP) for floods associated with tropical cyclones has been designed to be implemented by the Guatemalan Red Cross. Each of the actors involved in this EAP has a fundamental role during the coordination and activation of the Anticipatory Action mechanism. Below is a list of the actors linked to the EAP and the geographic level of performance of each one:

Actor	Geographical level
International Federation of Red Cross and Red Crescent Societies (IFRC) German Red Cross Red Cross and Red Crescent Climate Center Coordination Center for the Prevention of Natural Disasters in Central America (CEPRENAC) International Committee of the Red Cross (ICRC)	International
Guatemalan Red Cross National Coordinating Committee for Disaster Reduction (CONRED) National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) State Public Entities (Ministry of Environment and Natural Resources (MARN), Ministry of Agriculture, Livestock and Food (MAGA), Secretariat of Planning and Programming of the Presidency (SEGEPLAN), etc. Inter-University Platform for Disaster Risk Management (InterU)	National
Regional Coordinators for Disaster Reduction Guatemalan Red Cross Delegations	Regional
Departmental Coordinating Units for Disaster Reduction Guatemalan Red Cross Delegations	Departmental
Departmental Coordinating Units for Disaster Reduction Guatemalan Red Cross Delegations	Municipal
Municipal Coordinating Units for Disaster Reduction Local Coordinators for Disaster Reduction Municipal Instances for Risk Management Community Development Councils Guatemalan Red Cross Volunteers	Local

Table 1. Actors linked to the EAP. Source: GRC.

2. How the EAP will be activated – The Trigger



Map 1. Flood risk index in the Republic of Guatemala. Source: SE-CONRED/IDEG.

The selection of target villages was determined using the methodology employed for the Risk Management Index (INFORM). Three dimensions of risk were considered: 1) Exposure 2) Vulnerability and 3) Lack of Response Capacity. All variables were calculated at the municipal level since this is the basic administrative level.

More than one million people exposed to the threat of floods associated with tropical cyclones were identified, distributed in 194 municipalities and 22 departments of Guatemala.

Map 1 shows the high risk index that the departments of the Republic of Guatemala have with respect to floods associated with tropical cyclones, as well as in most of the municipalities located on both the Atlantic and Pacific sides of the country.

Prioritized impact: According to recent experience data (2020-2021) from the National Society and the Eta/Iota operation, the prioritized impacts for floods associated with tropical cyclones are as follows:

- Impact on livelihoods, oriented to the loss of subsistence crops, trade, livestock, and daily wages. These are the main productive activities of the rural population in Guatemala.
- Deficient access to food and safe water, this being one of the first supply chains to be interrupted when a flood occurs.
- Loss of household goods (household items and goods).

Declaration of activation:

This Early Action Protocol (EAP) has two triggers, as presented below:

Trigger 1

- When the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) of Guatemala or the National Hurricane Center (NOAA) issues a forecast with a 60% probability that the path of a tropical storm (63 km/hr) or greater, will enter the cyclone emergency zone of the Republic of Guatemala, with a waiting time of 3 to 5 days.

Trigger 2

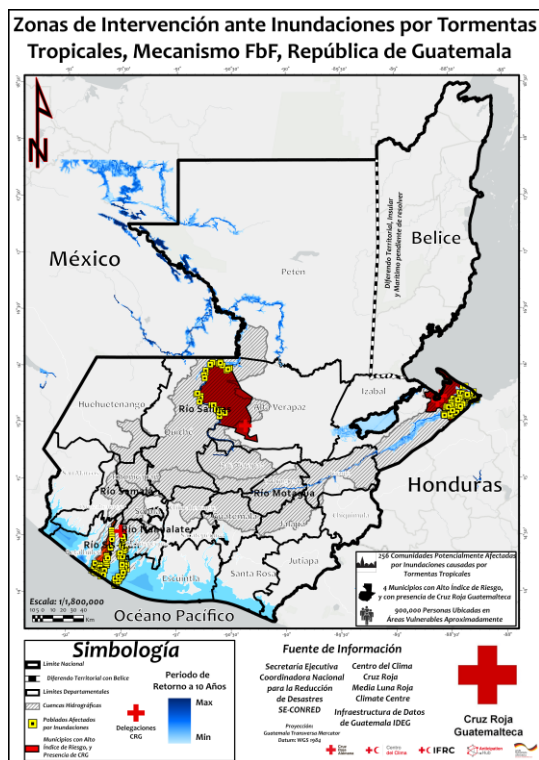
— When the Global Flood Awareness System (GloFAS) forecast exceeds a 50% probability for a 3-year return period in areas of high flood risk with a 3-day lead time.

Table 2. Triggers for this EAP.

Forecast selection: The hurricane forecast to be used will be from the National Hurricane Center (NOAA), since the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH) of Guatemala receives reports directly from NOAA. While flood forecasts will be triggered by the Global Flood Awareness System (GloFAS). The GloFAS check for lead time was calculated for several hydrological stations and has on average a skill (false alarm) of 0.53. The track forecast verification of the cone and wind intensity is based on NOAA operational verification. A summary of forecast types and their details is shown in the table below:

Forecast	Source	Type of forecast	Lead Time	Forecast skill
Hurricane	National Hurricane Center NOAA	Probabilistic	3 days	Error 24 hrs = 5 knots Error 48 hrs = 10 knots Error 72 hrs = 15 knots Error 24 hrs = 5 knots Error 48 hrs = 10 knots Error 72 hrs = 15 knots
Extreme rainfall	INSIVUMEH	Deterministic	5 days	In verification process
Floods	ECMWF-GloFAS	Probabilistic	5 days	FAR = 0.53
Flash Flood Forecast	CAFFGS - INSIVUMEH	Deterministic	3 days	No data

Table 3. Forecasting Menu.



Definition and justification of the level of impact: One of the criteria for activating this EAP is the occurrence of a tropical storm, whose wind speed ranges from 63 to 117 km/h, according to the Institutional Operational Plan for the 2023 Cyclonic Season of INSIVUMEH, or a cyclonic event of a higher category.

The second activation criterion is also based on the impact of historical floods triggered by tropical cyclones in the past, the return periods are associated with the magnitude of historical river floods, the return period of any extreme event (torrential rains, extreme temperatures, hurricanes, etc.), is defined as the period or number of years that, on average, is believed to be equalled or exceeded, i.e., it is the frequency with which an event occurs. The degree of magnitude of an extreme event is inversely related to its frequency of occurrence, with very intense precipitation occurring less frequently than moderate or weak precipitation.

A return period of 10 years or more has been determined, which represents a magnitude of danger in areas with a high

risk of flooding, this return period is highly associated with the category of the hurricane and the intense rainfall it brings as a cascade phenomenon.

Identification of the intervention zone: The municipalities with the highest risk of flooding caused by tropical storms have been identified. Intervention in these municipalities is determined by the presence of Guatemalan Red Cross branches, access, and communication/coordination with local authorities. Likewise, the definition of these specific zones is a process of analysis and consensus with the governing body and local coordination platforms such as the departmental and municipal Emergency Operations Center, the Municipal Coordinator for Disaster Reduction (COMRED), among others.

Watershed	Municipality	Department	National Society branch
Motagua River	Puerto Barrios	Izabal	Puerto Barrios / Santo Tomas de Castilla
Salinas River	Coban	Alta Verapaz	Coban
Samala River	San Andrés Villa Seca	Retalhuleu	Retalhuleu
Not applicable	Santo Domingo	Suchitepequez	Mazatenango

Table 4. Areas to intervene with the presence of Guatemalan Red Cross branches.

How the EAP will reduce the impact on the population – The Early Actions

In compliance with the auxiliary role of the Public Authorities, the Guatemalan Red Cross provides humanitarian assistance through the timely and efficient application of integrated response procedures framed through four main sectors: 1) First response; 2) Health; 3) Attention to the population; and 4) Logistics applied to the attention of adverse events.


The selected actions were proposed through work sessions with different sectors of the National Society, disaster coordinators of Guatemalan Red Cross delegations, who know the intervention zones very well, as well as through visits to the communities; Establishing information exchange with leading institutions such as the National Coordinator for Disaster Reduction (CONRED) and the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH), obtaining certain criteria and analysis through the support and personnel of the InterU Platform, Disaster Risk Management, among others.


Likewise, the EAP for tropical cyclone floods activated in 2022 due to the passage of tropical storm Julia showed that the actions selected as Multipurpose Cash Transfers (MCT) and Humanitarian Information, were successful, so they are actions that are retaken in this update of the document.


In the case of the inclusion of MCT, it has been considered that, through these, the selected families have cash to carry out various actions such as: preventive evacuation, protection and safeguarding of goods, purchase of basic products such as food or provision to anticipate temporary relocation or self-housing, enabling the mitigation of possible damages and/or losses that may occur upon impact. The MCT have a social, independent, and adequate feel to each need.

In turn, disseminating information and key messages through social networks about the development of an event that could lead to extreme flooding is a crucial early action. This timely communication allows people at risk to be alerted, giving them time to prepare and take preventive measures, such as evacuating vulnerable areas, securing belongings, and following safety instructions. In this way, the impact of floods can be significantly reduced, and lives and property can be protected.

PLANNED OPERATIONS


 Multi-purpose Cash	Female: 5,047		358,642 CHF
	Male: 4,753		AP Code: 081
Indicator:	9,800 people reached with multi-purpose cash in advance of a hazard		
Readiness Activities	<ol style="list-style-type: none"> 1. Hiring of a cash transfer program (MTP) coordinator. 2. MTP training and market analysis. 3. Annual training/updating workshops on administrative processes in anticipation. 4. Updating of market studies and analysis (targeted). 		
Prepositioning Activities:	<ol style="list-style-type: none"> 1. Coverage of MTP financial costs (shipping and banking costs). 		
Priority Early Actions:	<ol style="list-style-type: none"> 1. Registration and/or validation of families to receive support through Multipurpose Cash Transfers (MCT). 2. Distribution of MCT to selected families. 		


 Health & Care	Female:	52	9,836 CHF
	Male:	48	AP Code: 107,108, 109
Indicator:	100 volunteers trained/updated in first aid to be prepared in advance of a hazard		
Readiness activities	<ol style="list-style-type: none"> 1. First aid refresher course for volunteers from the branches involved. 		
Prepositioning Activities:	<ol style="list-style-type: none"> 1. Purchase of basic first aid kits equipped for the involved branches. 		
Priority Early Actions:	<ol style="list-style-type: none"> 1. None. 		

 Risk Reduction, climate adaptation and recovery	Female:	7,210	77,369 CHF
	Male:	6,790	AP Code: 101, 103, 105,106
Indicator:	14,000 people reached with risk reduction and/or climate adaptation interventions in advance of a hazard		
Readiness Activities:	<ol style="list-style-type: none"> 1. Implementation of Anticipatory Action workshops. 2. Development of a simulation exercise to update management and procedures. 		

	<ol style="list-style-type: none"> 3. Socialization of the EAP with the prioritized delegations. 4. Socialization of the EAP with the identified communities and other actors such as the National Coordinator for Disaster Reduction (CONRED) and the Local Coordinators for Disaster Reduction (COLRED). 5. Technical support in information management and analysis for data analysis, generation and updating of maps.
Prepositioning Activities:	<ol style="list-style-type: none"> 1. None.
Priority Early Actions:	<ol style="list-style-type: none"> 1. Publication of guidelines with key information/messages in social networks for at least 15 days.

Enabling approaches

	Secretariat Services		47,261 CHF
			AP Code: 122
Readiness Activities:	<ol style="list-style-type: none"> 1. Office costs / translations / communications / courier. 2. Financial charges. 3. Field monitoring/accountability visits. 4. Payment of salary for a Disaster Manager 5. Payment of salary for EAP finance officer. 6. Payment of salary for EAP PMER officer 		
Prepositioning Activities:	<ol style="list-style-type: none"> 1. None. 		
Priority Early Actions:	<ol style="list-style-type: none"> 1. None. 		

	National Society Strengthening		54,097 CHF
	Female:	20	AP Code: 124,125,126
	Male:	30	
Readiness Activities:	<ol style="list-style-type: none"> 1. National Society coordination trips (General Management, area directors, etc.). 2. Annual virtual review of Contingency Plans and EAP updates (with the Disaster Coordinators of the delegations involved) 3. Hiring of Anticipatory Action Coordinator. 4. Updating of maps and databases for the identification of areas of impact of the event (Intervention Maps). 5. EAP updating workshop. 6. Office operating expenses. 		

<p>Prepositioning activities:</p>	<ol style="list-style-type: none"> 1. Acquisition of personal protective equipment/visibility kits for personnel and volunteers (pants, shirts, caps, bibs, capes, capes, tactical boots). 2. Minor refurbishment of facilities in delegations involved (chairs, tables, benches, light bulbs, extensions, sanitary repairs, etc.) to ensure a decent working space.
<p>Priority Early Actions:</p>	<ol style="list-style-type: none"> 1. Office operating expenses. 2. Lessons learned workshop (after activation). 3. Follow-up visits/meetings to activation activities. 4. Purchase of insurance for volunteers.

Budget



Early Action Protocol Summary

EAP2024GT02 - Guatemalan Red Cross
Floods

Operating Budget

	Readiness	Pre-Pos Stock	Early Action	TOTAL
Planned Operations	165,310	2,459	278,079	445,848
Shelter and Basic Household Items	0	0	0	0
Livelihoods	0	0	0	0
Multi-purpose Cash	82,408	0	276,235	358,642
Health	7,377	2,459	0	9,836
Water, Sanitation & Hygiene	0	0	0	0
Protection, Gender and Inclusion	0	0	0	0
Education	0	0	0	0
Migration	0	0	0	0
Risk Red., Climate Adapt. and Recovery	75,525	0	1,844	77,369
Community Engagement and Accountability	0	0	0	0
Environmental Sustainability	0	0	0	0
Enabling Approaches	59,712	14,754	26,893	101,358
Coordination and Partnerships	0	0	0	0
Secretariat Services	44,405	0	2,857	47,261
National Society Strengthening	15,307	14,754	24,036	54,097
TOTAL BUDGET	225,021	17,213	304,972	547,206

all amounts in Swiss Francs (CHF)

Contact information

For further information, specifically related to this operation please contact:

In the Guatemalan Red Cross

- **General Director:** Virna Villela, virna.villeda@cuzroja.gt
- **Operational coordination:** Teresa Marroquín, Disaster Risk Management Director, teresa.marroquin@cuzroja.gt

In the IFRC

- **IFRC Country Cluster Delegation:** Diana Oviedo, Programs and Operations Coordinator, diana.oviedo@ifrc.org
- **IFRC Geneva DREF Team:** Malika Noisette, DREF Senior Officer AA, malika.noisette@ifrc.org