

EARLY ACTION PROTOCOL SUMMARY

Honduras | Floods caused by Tropical Storms

14 December 2023

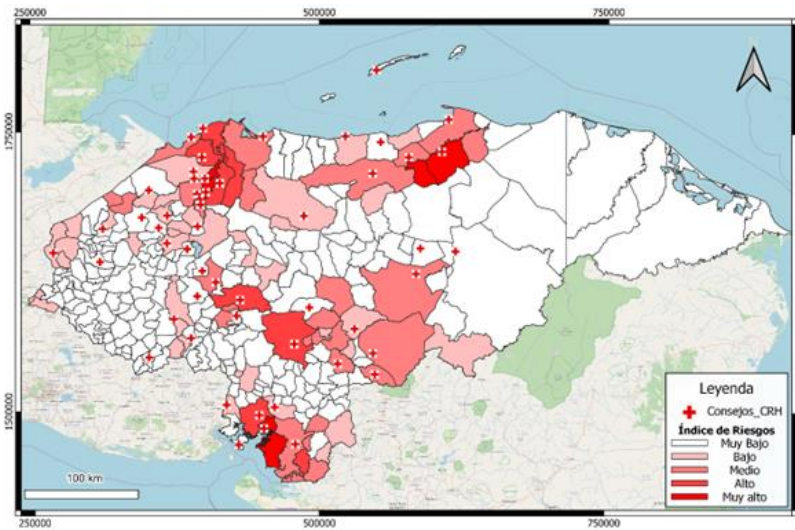


Honduran Red Cross staff assists people affected by flooding due to heavy rains. Source: HRC.

EAP No: EAP2023HN03	Early action lead time: 3-5 days	Operation No: MDRHN020
EAP approved: 14/12/2023	EAP timeframe: 5 Years	Early action timeframe: 3 Months

Budget: 549,023 CHF
To assist: 12,750 people

SUMMARY OF THE EARLY ACTION PROTOCOL



Map 1. National flood risk index. Source: HRC

The IFRC Disaster Response Emergency Fund (DREF) has approved a total of CHF 549,023 for the National Society of Red Cross of Honduras. The approved amount consists of an immediate allocation of CHF 348,133 for readiness and CHF 200,891 automatically 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.

Honduras, marked by its high susceptibility to natural hazards, has faced 82 significant disasters between 1970 and 2019, with 67 of them resulting from hydrometeorological or climatic causes. Hurricanes Fifi (1974) and Mitch (1998) are particularly notorious, having left a tragic toll of lives lost. In addition, the frequency of tropical storms has been increasing, with a total of 17 severe events recorded between these two hurricanes and until after Hurricane Iota and Tropical Storm Eta in 2020.

These disasters do not occur in isolation. They often occur in sequence or simultaneously, exacerbated by other extreme and slow-onset events, such as drought, exacerbated by climate variability and change. This multiplies the risks to people and government structures.

In this environment, the Early Action Protocol (EAP) for the Honduran Red Cross emerges as a crucial tool. Designed to prevent or mitigate humanitarian crises arising from foreseeable climate events, this plan has been updated with the technical collaboration of the German Red Cross and the IFRC Climate Center, especially after the activation in October 2022 by Tropical Storm Julia. Implementation falls directly on the Honduran Red Cross.

The EAP aims at timely and efficient implementation of preventive measures, in collaboration with the Government of Honduras, communities at risk, other relevant institutions and the Honduran Red Cross. This document is fundamental for contingency plans at the national and local levels, focusing on floods linked to tropical storms. It is activated based on forecasts from NOAA's National Hurricane Center and the Secretariat of Risk Management and National Contingencies (COPECO, by its Spanish acronym), through the Center for Atmospheric, Oceanographic and Seismic Studies (CENAOS, by its Spanish acronym), with a 3-to-5-day margin of action. The plan details the actions to be taken, specifying responsibilities, timelines, locations, and funding.

A crucial part of the process of updating this EAP is that it has considered the results of the lessons learned workshop held in December 2022 that allowed identifying achievements and areas of improvement to optimize actions proposed in this update and in future actions.

It is crucial to note that the EAP does not operate in isolation. It is closely integrated with existing disaster risk management and contingency plans of the country and the National Society, ensuring that preventive measures are effectively implemented in the time between the issuance of a forecast and the potential occurrence of a disaster.

OPERATIONAL STRATEGY

1. Who will implement the EAP - The National Society

The Early Action Plan (EAP) for Floods associated with Tropical Storms was developed to be implemented directly by the Honduran Red Cross. All actors involved in this plan play a key role in the preparation and activation of the Forecast Based Action mechanism. A list of the institutions and their responsibilities is provided below:

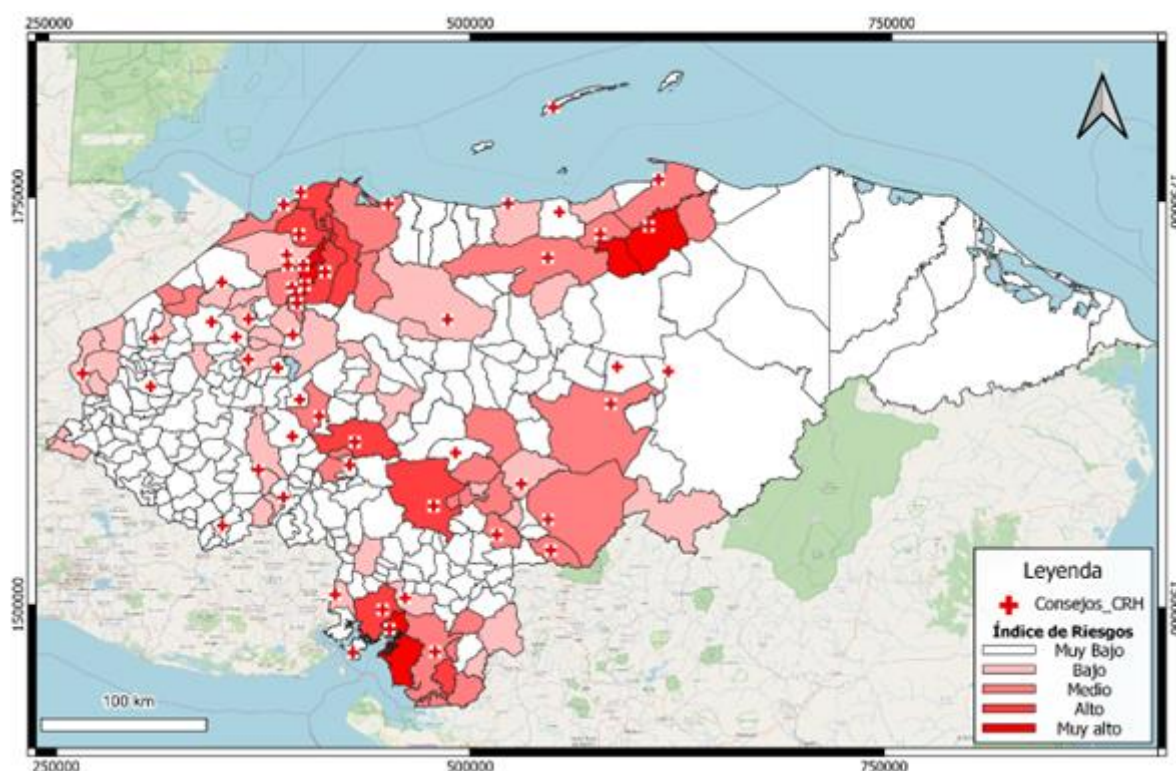
Name of organization	Role within EAP	Type of stakeholder
Red Cross Red Crescent Climate Centre (RCCC)	The RCCC will provide technical and scientific assistance in disaster risk management, logistics, strategic relationships, early warning/action, monitoring and evaluation, and financial accountability. Also, supports the International Red Cross Movement in reducing the impacts of climate change and extreme natural events on vulnerable populations.	Regional
Participating National Societies (PNS)	They will provide accompaniment and participation in anticipation processes such as the development of other Early Action Plans, and/or in the activation of this same plan.	Regional
Honduran Red Cross	As a humanitarian institution, it has been working for the benefit of the vulnerable population since its foundation in 1937. The Honduran Red Cross through its councils, distributed in 15 departments, promote a network of actions aimed at providing a timely and effective response to meet the needs of the population.	National
National Risk and Contingency Management Secretariat (COPECO)	It is the institution of the State of Honduras aimed at strengthening and coordinating the National Risk Management System Law (SINAGER, by its Spanish acronym). The institution will assume its prevention functions and those extended by the SINAGER Law, therefore, it is the institution in charge of declaring and communicating any type of alert and states of emergency in the country, so its participation is fundamental in the activation of the EAP.	National
Center for Atmospheric, Oceanographic and Seismic Studies (CENAOS)	It is the technical unit attached to COPECO, in charge of providing meteorological, climatic, oceanographic, and seismic information for the prevention of natural disasters and consequently saving lives, therefore, it is the authority on meteorology.	National
SINAGER and Association of Municipalities of Honduras (AMHON, by its Spanish acronym)	These are coordination systems, with which the Red Cross works hand in hand to be in tune with the country's priorities and to be able to act in a pertinent manner.	National
Working Group on Cash Transfers	This is the inter-agency coordination space for Cash Transfer issues at the national level.	National

Name of organization	Role within EAP	Type of stakeholder
Decentralized Government (Mayors' Offices and Municipal Corporations), Emergency Committees (CODED, CODEM, CODEL, CODECE, CODELES), NGOs and the Fire Department.	These are the entities with which specific coordination processes are generated, determining the people to be assisted and inter-institutional support.	Local

Table 1. Institutions at regional, national, and local levels linked to the National Society for the development and/or activation of the EAP.

2. How the EAP will be activated – The Trigger

The following map shows the flood risk index of the municipalities in Honduras, with a distribution of the risk index ranging from very low (light red) to very high-risk municipalities (more intense red).

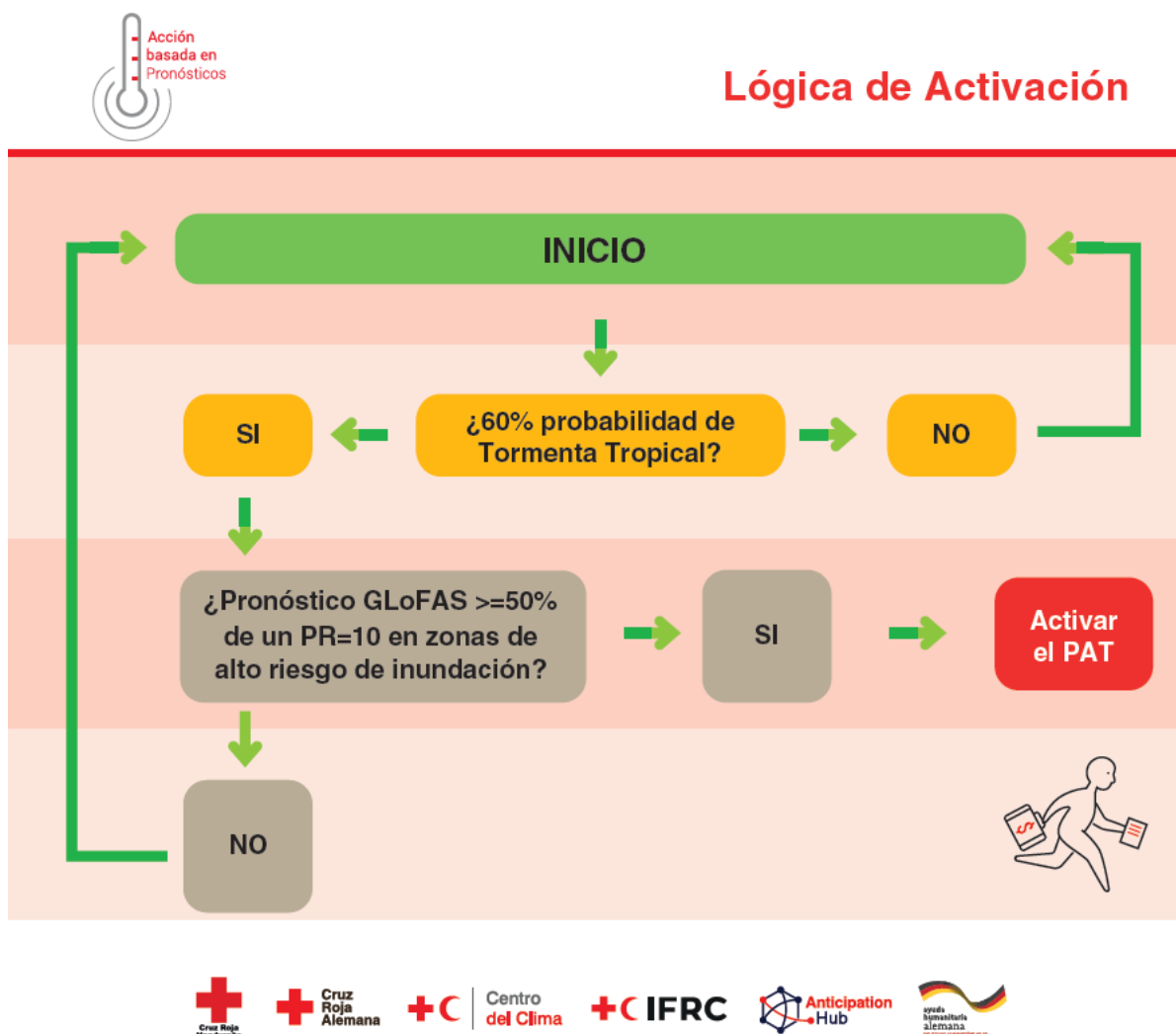


Map 2. Flood risk index at the national level. Source: HRC.

Prioritized impact: The impacts prioritized for Honduras in this plan, in the case of flooding associated with Tropical Storms are:

1. Possible loss of household goods and material goods.
2. Possible impact on livelihoods (loss of inputs and/or tools).
3. Increased gastrointestinal and skin diseases caused by consumption and contact with unsafe water.

Activator model: The activation will be carried out according to the logic presented in the following scheme:



Scheme 1. Tropical Storm EAP Activation Model.

Declaration of activation:

The activation statement will have 2 criteria (both must be met) and will be activated as indicated below:

Triggers:

Trigger 1	— CENOS or NOAA issues a forecast with a 60% probability of a tropical storm (34 knots) or greater reaching the warning area with a lead time of between 3 to 5 days.
Trigger 2	— When the GEOGLOWS/GloFAS forecast exceeds 50% probability for a 10-year return period in high flood hazard areas with a 3-day lead time.

Table 2. Triggers for EAP.

Forecast selection: Track error and NOAA best track error were used for the hurricane analysis.

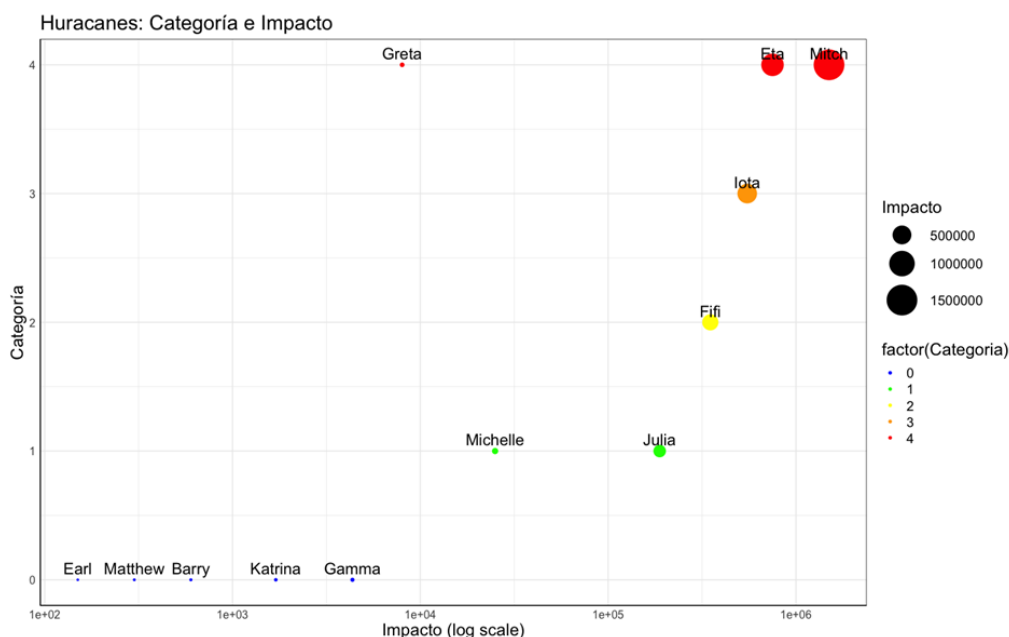
Accuracy	0.55813953
False Positive Rate	0.44186047

For flood forecasting, an indicator called Nash Sutcliffe Model Efficiency (NSE) was used, which is a skill metric for hydrological models and is the one used by the company Energía Honduras to evaluate the model with hurricane Iota and tropical storm Eta 0.5.

Forecast	Sources	Type of forecast	Forecast time	Forecast skill
Hurricane	National Hurricane Center NOAA	Probabilistic	3 to 5 days	Error 24 hrs = 5 knots Error 48 hrs = 10 knots Error 72 hrs = 15 knots ¹ FAR ² : 0.44
Extreme rainfall	CENAOS UCR	Deterministic	5 days	Not verified
Floods	GEOGloWS ECMWF	Probabilistic	3 days	NSE = 0.507
Flash Flood	CAFFGS CENAOS	Deterministic	3 days	No data

Table 3. Forecasting Menu.

Definition and justification of impact level: One of the criteria for activating this EAP is that there is a 60% probability of a Tropical Storm. Graph 1 shows the impact curve of the relationship between the hurricanes that have historically affected Honduras and their impact on the population. Hurricane Mitch (1998) had an impact of close to 1,500,000 people affected, while Eta and Iota (2020) added together had a similar impact to Mitch and another important hurricane was Fifi (1974), which left close to 350,000 people affected. Hurricane Julia, in 2022 left about 180,000 affected. In the graph it can also be seen that it is in the 5th position in the historical analysis of past storm impacts.



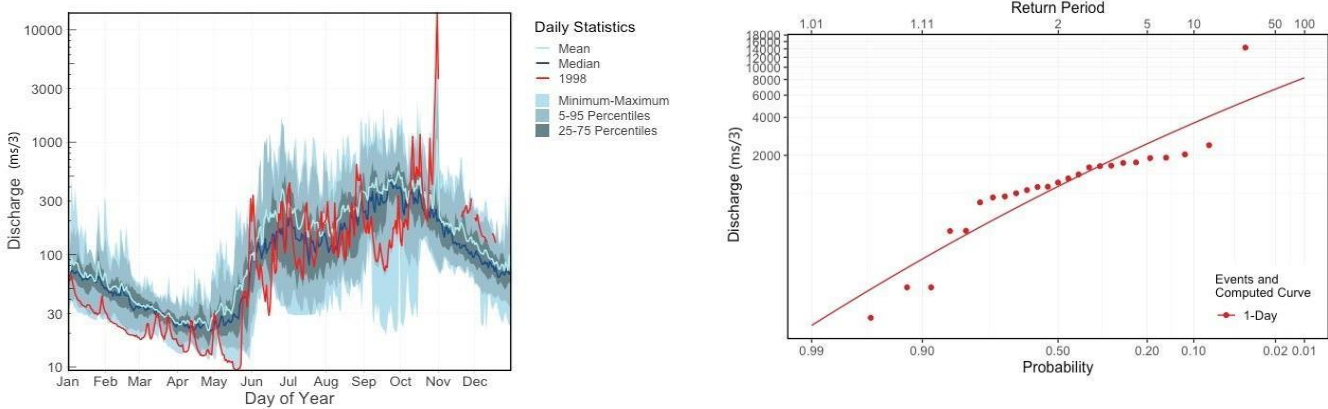
Graph 1. Hurricane Category Impact Curve Vs Affected Population.

¹ The verification is based on the error of the Hurricane's wind and track intensity.

² Hurricane Mitch, Michelle, Gamma, Mathew, Barry, Earl, Eta and Iota track verification.

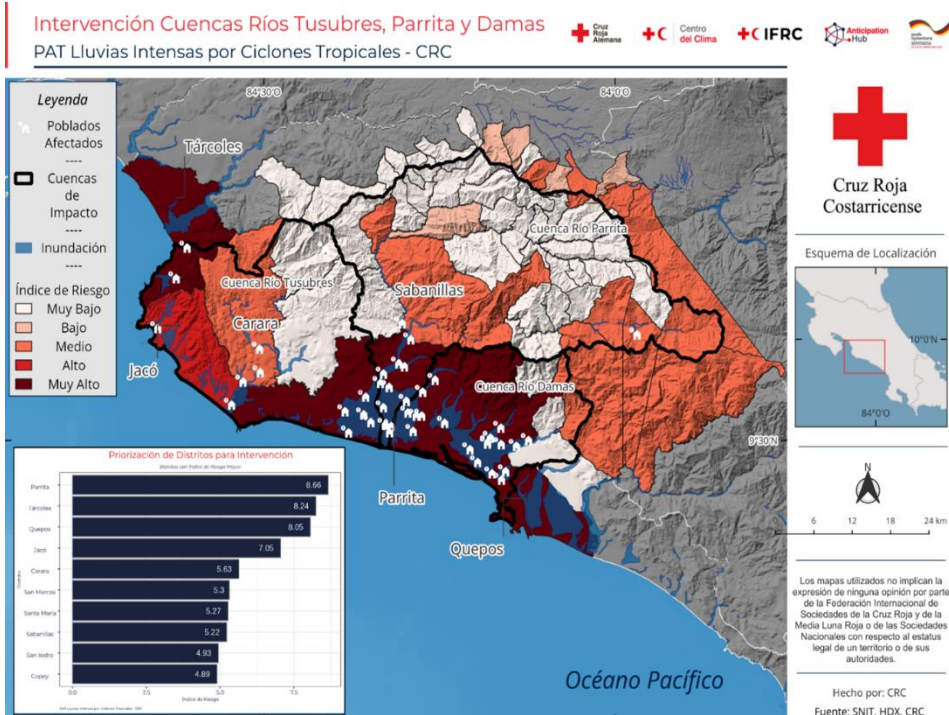
The second criterion is based on the impact of historical floods triggered by hurricanes in the past, the return periods are associated with the magnitude of river floods. A return period of 10 years or more has been determined, which represents a magnitude of danger in areas of high flood risk (Graph 2), this return period is highly associated with the category of the tropical storm and the intense rains it brings as a cascading phenomenon.

In Honduras, in recent decades, there have been significant disasters in the country due to tropical cyclones, an example being Eta and Iota in 2020, which, like Mitch (1998), caused a catastrophic impact on society and its livelihoods.



Graph 2. Calculation of the return period for the Uluá River.

Identification of the intervention zone: The identification of risk areas is done by combining the elements that define risk with flood projections. This process allows the Honduran Red Cross to identify and prioritize the municipalities with the highest risk and susceptibility to be affected. These will be the primary focuses for the implementation of early actions.



Map 3. Risk index for municipalities to be intervened by tropical storms.

Map 3 presents an illustrative example of an intervention map. This map is generated by integrating the forecast of the specific event and a previously developed risk map, thus identifying potentially affected areas. A graphic is integrated (prioritization of districts for intervention) that highlights more clearly the municipalities with the highest risk index within the intervention zone.

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


The impacts prioritized by the Honduran Red Cross are based on its operational and administrative capacity, the time available to execute actions, and lessons learned from previous events, highlighting the experience gained during hurricanes Eta and Iota in 2020. The valuable experience gained during the activation of the EAP with Hurricane Julia in 2022 is also considered.

To select the actions to be implemented, several activities were carried out:


- Visits to areas recurrently affected by flooding due to tropical cyclones, facilitating meetings with community representatives, local councils of the Honduran Red Cross, municipal staff and members of the National Risk and Contingency Management Secretariat (COPECO).
- Interviews with Honduran Red Cross staff experienced in humanitarian assistance and disaster response. Also included working sessions with experts from the Honduran Institute of Earth Sciences (IHCIT) of the National Autonomous University of Honduras (UNAH) and the Center for Atmospheric, Oceanographic and Seismic Studies (CENAOS).
- Conducting a feasibility study on the Cash Transfer Program (CTP), identifying debit cards as the most appropriate option for quick deliveries. The 2022 experience with CTP using electronic codes, which proved to be useful and efficient in certain areas, was also considered.
- Evaluation of the usefulness of the actions implemented during the 2022 EAP with Hurricane Julia, based on feedback received during the operation.
- For the development of the theory of change, a workshop was organized to discuss various preventive and useful actions prior to the expected impact. Aspects such as the response capacity of the Honduran Red Cross, implementation time, procurement of non-perishable or long-lasting supplies, logistics and the adequacy of actions to the needs of the target population were considered.

In addition, the initiatives of the government and other organizations were considered to avoid duplicating efforts and instead collaborate to strengthen certain areas.

PLANNED OPERATIONS

 Multi-purpose Cash	Female: 1,430	229,998 CHF
	Male: 1,320	AP Code: 081
Indicator:	2,750 people reached with multi-purpose cash in advance of a hazard.	
Readiness Activities	<ol style="list-style-type: none"> 1. Hiring of focal point for Cash Transfer Program (CTP). 2. Development of training workshops on topics related to anticipation, information gathering, mapping, risk analysis, among others. 3. Development of training/updating workshop on administrative processes and CTP. 4. Update of market analysis and feasibility study. 	


	5. Fuel and maintenance of vehicles used in the activities.
Prepositioning Activities	1. CTP prepositioning (cost of plastic) or purchase of the electronic code dispersal service.
Priority Early Actions:	<ol style="list-style-type: none"> 1. CTP distribution in the communities. 2. Per diem for volunteers who will carry out the registration and distribution of CTP. 3. Per diem expenses for technical team. 4. Hydration and snacks for volunteers. 5. Vehicle rental. 6. Fuel expenses.

 Water, Sanitation and Hygiene	Female:	5,200	154,456 CHF
	Male:	4,800	AP Codes: 110, 111
Indicator:	10,000 people reached with WASH interventions in advance of a hazard.		
Readiness Activities:	1. Acquisition of minor tools and materials for temporary tank installation.		
Prepositioning Activities:	<ol style="list-style-type: none"> 1. Acquisition of 20 water quality kits for Water Management Boards of prioritized communities (pH + nitrites & nitrates). 2. Acquisition of 2,000 buckets (to be included in the domestic water treatment kits). 3. Purchase of family hygiene kits. 4. Purchase of a tent for distribution. 		
Priority Early Actions:	<ol style="list-style-type: none"> 1. Fuel for the distribution of household water purification kits. 2. Per diem for driver and volunteers during the prepositioning of household water purification kits. 3. Food for volunteers during the distribution of household water purification kits and water quality kits for water boards. 4. Purchase of hydration supplies and snacks for volunteers. 		

 Risk Reduction, climate adaptation and recovery		75,870 CHF
		AP Codes: 101, 103, 105,106
Readiness Activities:	<ol style="list-style-type: none"> 1. Hiring of 1 anticipation referent. 2. Hiring of 1 GIS technician. 3. Development of 1 simulation. 4. Development of 2 workshops to update the EAP. 5. Purchase of licenses for the use of satellite tools to generate research to have more inputs for activation. 	

Priority Early Actions:	<ol style="list-style-type: none"> 1. Development of 1 administrative logistics internship. 2. Follow-up of activation activities.
 Community Engagement and Accountability	13,970 CHF
	AP Code: 129
Readiness Activities:	<ol style="list-style-type: none"> 1. Socialization of the EAP. 2. Printing of pocket EAP. 3. Elaboration of visibility and communication material (spot, in the media, printing of material, payment of guidelines).
Priority Early Actions:	<ol style="list-style-type: none"> 1. Dissemination (payment of spaces in radio, TV, and social networks). 2. Development of post-distribution monitoring survey and exit survey. 3. Development of lessons learned workshop.

Enabling approaches

 Secretariat Services	50,921 CHF
	AP Code: 122
Readiness Activities:	<ol style="list-style-type: none"> 1. Payment of salary to 1 Finance Officer. 2. Payment of salary to 1 PMER Officer. 3. Payment of 1 local Disaster Management. 4. Financial expenses. 5. Visibility. 6. Mobilization for coordination and monitoring visits.
Priority Early Actions:	<ol style="list-style-type: none"> 1. Translation of documents. 2. Mobilization for coordination visit.

 National Society Strengthening	23,808 CHF
	AP Codes: 124,125,126
Readiness Activities:	<ol style="list-style-type: none"> 1. Specific administrator salary for the EAP. 2. Financial expenses. 3. Coordination travel (president, general secretary, coordinator). 4. Communication expenses (internet, telephones, DHL shipping, etc.) 5. Purchase of office supplies.

Prepositioning Activities:	1. Purchase of protective and visibility equipment for volunteers.
Priority Early Actions:	1. Warehouse rental for prepositioning.

Contact information

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

In the Honduran Red Cross

- **National Risk Management Manager**, Carlos Colindres, carlos.colindres@cuzroja.org.hn
- **Anticipation Referent**, Diana Muñoz, diana.munoz@cuzroja.org.hn

In the IFRC

- **Regional Office: Senior Officer, Anticipatory Action and Community Resilience**, Lilian Ayala, lilian.ayala@ifrc.org
- **Central America Cluster: Disaster Management Coordinator**, Mariela Gómez, mariela.gomez@ifrc.org

For IFRC Resource Mobilization and Pledges support:

- **Regional Office: Head of Strategic Engagement and Partnerships**, Mónica Portilla, monica.portilla@ifrc.org

Reference



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Early Action Protocol Summary

EAP2023HN03 - Honduran Red Cross Floods

Operating Budget

Readiness Pre-Pos Stock Early Action TOTAL

Planned Operations	127,421	151,688	195,185	474,294
Shelter and Basic Household Items	0	0	0	0
Livelihoods	0	0	0	0
Multi-purpose Cash	44,074	2,545	183,379	229,998
Health	0	0	0	0
Water, Sanitation & Hygiene	118	149,143	5,194	154,456
Protection, Gender and Inclusion	0	0	0	0
Education	0	0	0	0
Migration	0	0	0	0
Risk Red., Climate Adapt. and Recovery	74,375	0	1,495	75,870
Community Engagement and Accountability	8,854	0	5,116	13,970
Environmental Sustainability	0	0	0	0
Enabling Approaches	66,662	2,361	5,706	74,729
Coordination and Partnerships	0	0	0	0
Secretariat Services	46,789	0	4,132	50,921
National Society Strengthening	19,873	2,361	1,574	23,808
TOTAL BUDGET	194,083	154,050	200,891	549,023

all amounts in Swiss Francs (CHF)