

EARLY ACTION PROTOCOL SUMMARY

Costa Rica | Floods caused by Tropical Cyclones

17 October 2023

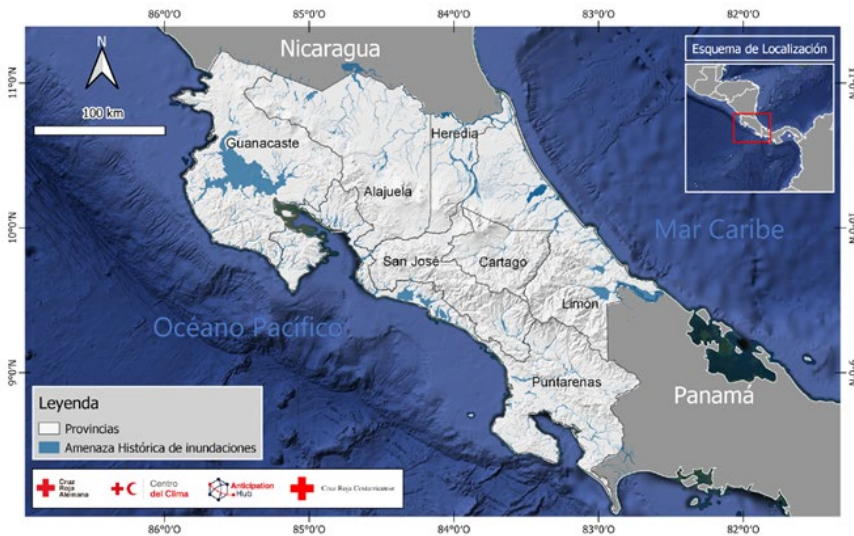


Staff of the National Society of Red Cross of Costa Rica support people affected by flooding due to heavy rains. Source: NSRCCR

| | | |
|------------------------------------|--|--|
| EAP №: EAP2023CR02 | Early action lead time: 5 days | Operation №: MDRCR024 |
| EAP approved: 27/10/2023 | EAP timeframe: 5 Years | Early action timeframe: 3 Months |

Budget: 528,641 CHF
To assist: 10,000 people

SUMMARY OF THE EARLY ACTION PROTOCOL



Map 1. Cantons and districts with flood hazards in Costa Rica. Source: CRRC

The IFRC Disaster Response Emergency Fund (DREF) has approved a total of CHF 528,641 for the National Society of Red Cross of Costa Rica. The approved amount consists of an immediate allocation of CHF 181,792 for readiness and CHF 346,849 automatically allocated to implement early actions once the defined triggers are met.

Allocations are made from the Anticipatory Pillar of the IFRC-DREF, under the IFRC-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 21st century poses significant challenges for Central America, a region with a population of more than 45 million people and an area of more than 500,000 square kilometers. These challenges encompass political, economic, social, environmental, and strategies to mitigate the increase in natural disasters (Salgado, 2009). In Central America, floods are one of the main causes of impact on the economy, housing, basic services, and agriculture, often severely affecting people's livelihoods, and assets.

Costa Rica, as part of Central America, is exposed to various hazards, mainly related to hydrometeorological, seismic, volcanological, and geological events. Hydrometeorological events represent the greatest source of losses in livelihoods and housing, as the country is especially vulnerable to flooding, even in areas with smaller rivers and streams. These floods occur during the rainy season when contributing factors increase significantly. Moreover, conditions vary according to the region affected.

In response to these challenges, the Costa Rican Red Cross has developed an anticipation mechanism to guide the timely and effective execution of early actions based on hydro-meteorological activity forecasts that indicate thresholds beyond which negative impacts on people and their property may arise. Coordination between technical institutions, government entities, the Red Cross, and local governments makes it possible to reduce the impact of floods, reducing risks to human lives, property, and livelihoods, and facilitating faster recovery.

The Early Action Protocol (EAP) of the Costa Rican Red Cross, designed to cope with floods caused by tropical cyclones, is an essential tool that guides the timely and effective implementation of preventive actions. These actions are based on specific hydrometeorological forecasts that anticipate events that, if they materialize and appropriate measures are not taken, can lead to a humanitarian crisis. These crises can be avoided or minimized through collaboration between the Government of Costa Rica, at-risk communities, stakeholders, and the National Society of Red Cross of Costa Rica.

The creation and implementation of this EAP involves various organizations, with a prominent role of the National Meteorological Institute (IMN) in monitoring and forecast development, and the strategic direction of the National Commission for Risk Prevention and Emergency Attention (CNE). All actors play a crucial role in the preparation and activation of this Forecast-Based Action mechanism.

Depending on the context, this document becomes a fundamental component of the national and local contingency plans of the Government of Costa Rica and the National Red Cross Society. To obtain funding through the DREF, it is necessary to follow the program and budget structure of the International Federation of Red Cross and Red Crescent Societies (IFRC). This involves identifying the focus areas and implementation strategies that will be part of the EAP.

This document focuses on the threat of heavy rains caused by tropical cyclones and is triggered by a forecast provided by the IMN with a lead time of 5 days. It offers a logical explanation as to why certain early actions are prioritized and provides detailed, step-by-step instructions for the implementation of selected activities in a specific order once activated. The EAP defines precisely who should take what action, when, where, and with what resources.

It is essential to emphasize that the EAP does not operate in isolation; it must be integrated into existing Disaster Risk Reduction and Management and Contingency Plans. This ensures that early actions, planned between the issuance of a forecast and the possible occurrence of a disaster event, are executed in a timely and efficient manner.

OPERATIONAL STRATEGY

1. Who will implement the EAP - The National Society

The inputs for this EAP have been developed by national institutions, which have effectively contributed technical and scientific criteria for the definition of parameters to meet the objectives of providing humanitarian aid to the inhabitants of localities at risk of flooding. Likewise, the IFRC Climate Center has provided specific observations in the design process. The following is a summary of the national institutions relevant to the design and operation of the EAP:

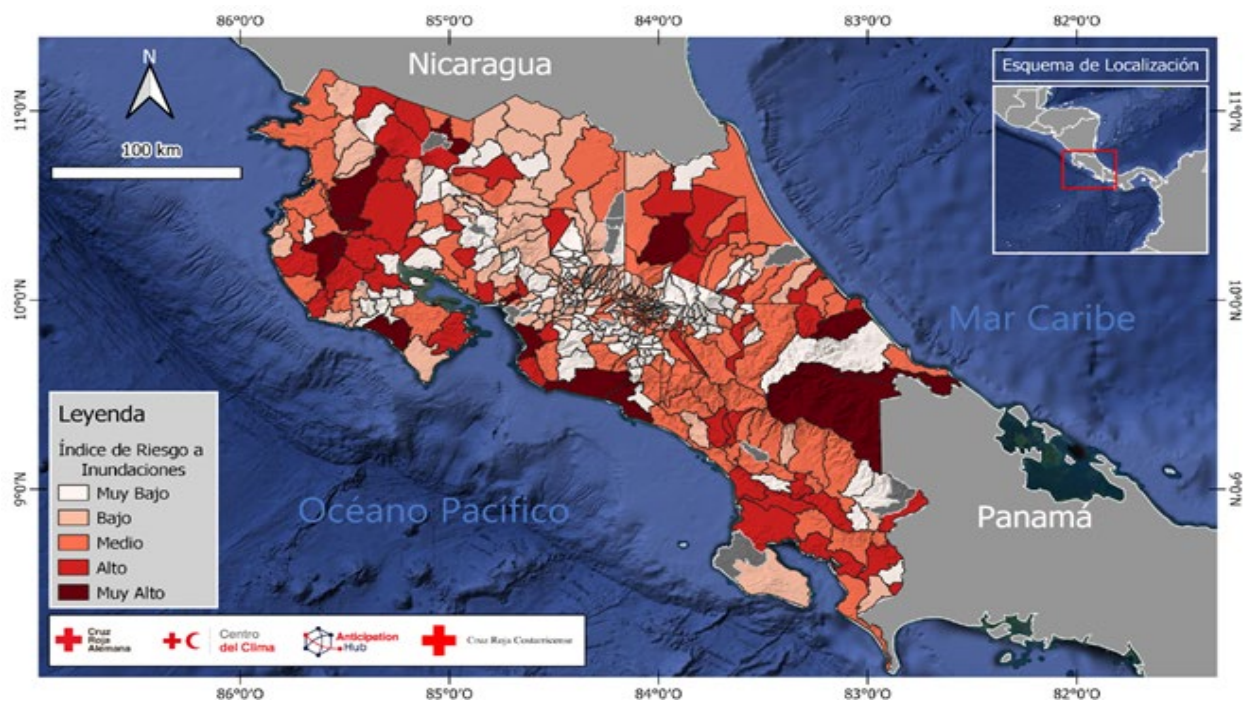
| Name of organization | Description | Role within EAP | Type of stakeholder |
|---|---|---|---------------------|
| National Commission for Risk Prevention and Emergency Attention (CNE, for its acronym in Spanish) | The CNE is the governing body with a mandate for risk management and emergency response. | It is the national coordinator of emergencies and disasters in the country and its role is to generate information for liaison between institutions and decision making. It receives a special report from the IMN and will generate a notification to the Costa Rican Red Cross for the potential activation of the PAT. | National |
| National Meteorological Institute (IMN, for its acronym in Spanish) | The IMN is a directorate attached to the Ministry of Environment and Energy (MINAE, for its acronym in Spanish), it is a scientific entity in charge of | It collects, studies, and analyzes all climatological information recorded and measured in the country, necessary for the preparation of studies and research in the fields of agrometeorology, climatology, | National |

| Name of organization | Description | Role within EAP | Type of stakeholder |
|--|---|--|---------------------|
| | <p>coordinating all meteorological activities in the country. It maintains a systematic monitoring of the weather to support the safety of air navigation in the country and for the prevention of hydrometeorological disasters.</p> | <p>climate variability, atmospheric pollution, ocean-atmosphere interaction, global warming, climate change, and others, in order to support national development.</p> | |
| <p>National Society, Costa Rican Red Cross</p> | <p>It is an auxiliary organization of the powers of the State that has a role within the National Risk Management Plan as responsible for responding to emergencies where human life is involved.</p> | <p>The organization is responsible for responding in case of activation of triggers. It also manages funds for early response and renders funds to cooperators and partners.</p> | <p>National</p> |

Table 1. National institutions that have contributed technical and scientific criteria for the formulation of the EAP.

2. How the EAP will be activated – The Trigger

The following is the distribution of the risk index calculated for the threat of flooding from intense rainfall due to tropical cyclones in Costa Rica:

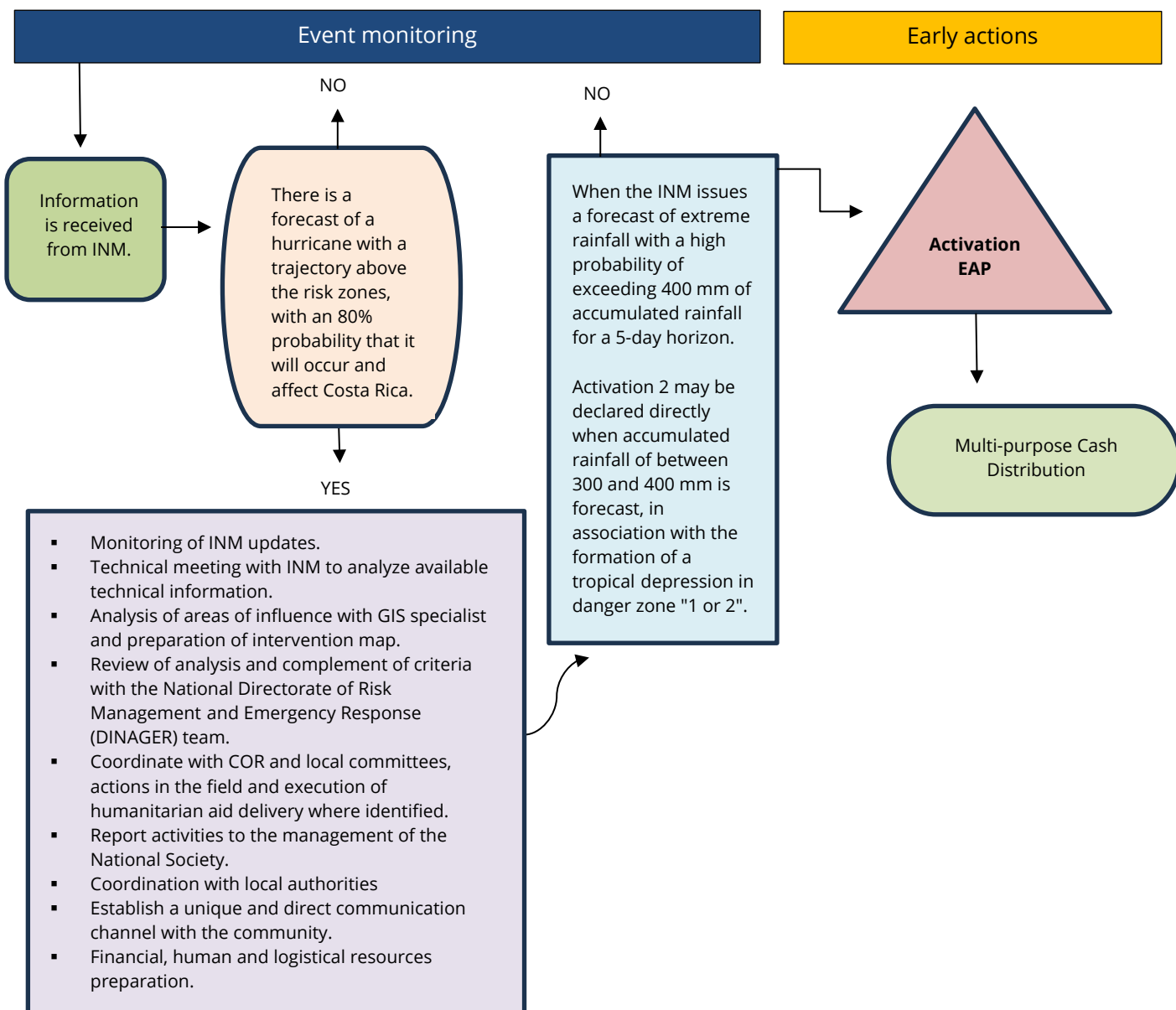


Map 2. Tropical Cyclone Heavy Rainfall Risk Index

Prioritized impact: In the analysis of the threat and vulnerability of the communities near the rivers at high risk of flooding, it is considered that the estimated prioritized impact would be:

1. To livelihoods, in view of the affectation to areas with the sowing of products and lands dedicated to meat and milk producing livestock.
2. Affecting their basic needs.

Activator model: The activation model has been constructed and agreed upon by the actors involved, defining the following activation scheme:



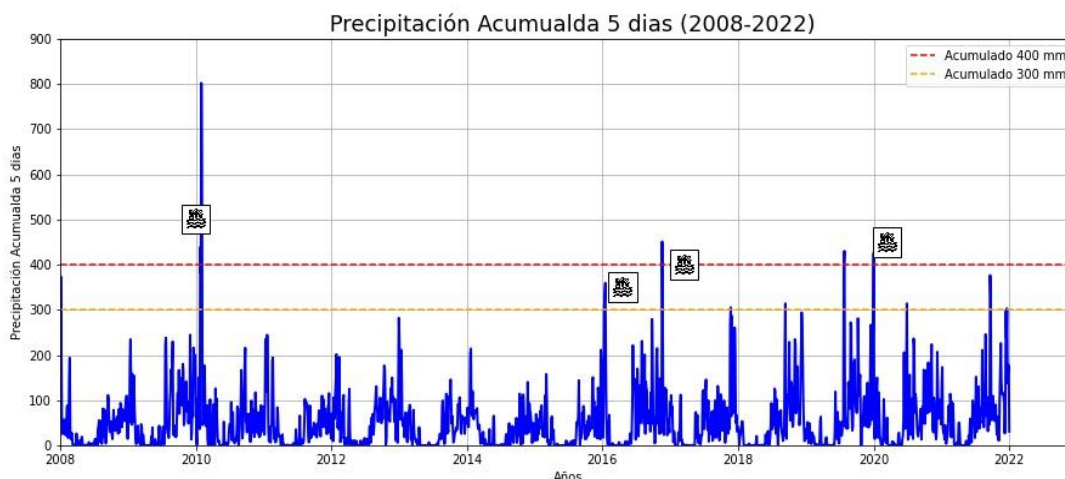
Scheme 1. Tropical Storm EAP Activation Model

Declaration of activation:

| | |
|------------------|---|
| Trigger 1 | <ul style="list-style-type: none"> Information from the National Meteorological Institute (IMN), on the forecast of a tropical storm with a trajectory entering at least Zone 3 indicated in the IMN Emergency Protocol, with a 60% probability and a lead time of 5 days. |
| Trigger 2 | <ul style="list-style-type: none"> Occurs when the IMN issues a forecast of extreme rainfall with a high probability of exceeding 400 mm of accumulated precipitation for a 5-day horizon, currently the EAP is activated. If an update of the forecast is given on day 2 after trigger 2 has been activated, indicating that if extreme rainfall exceeding 300 mm cumulative rainfall is forecast for a 3-day horizon, the established early actions would continue. Otherwise, the stop mechanism is activated. Trigger 2 may be declared directly when cumulative rainfall of between 300 and 400 mm is forecast, in association with the formation of a tropical depression in danger zone "1 or 2". |
| | <ul style="list-style-type: none"> Regardless of whether the zone trigger has been met as stated in Trigger 1, Trigger 2 can be declared directly and activate this EAP to mitigate the risk of missed events, when cumulative rainfall of between 300 and 400 mm is forecast, in association with the formation of a tropical depression in the danger zone "1 or 2". |

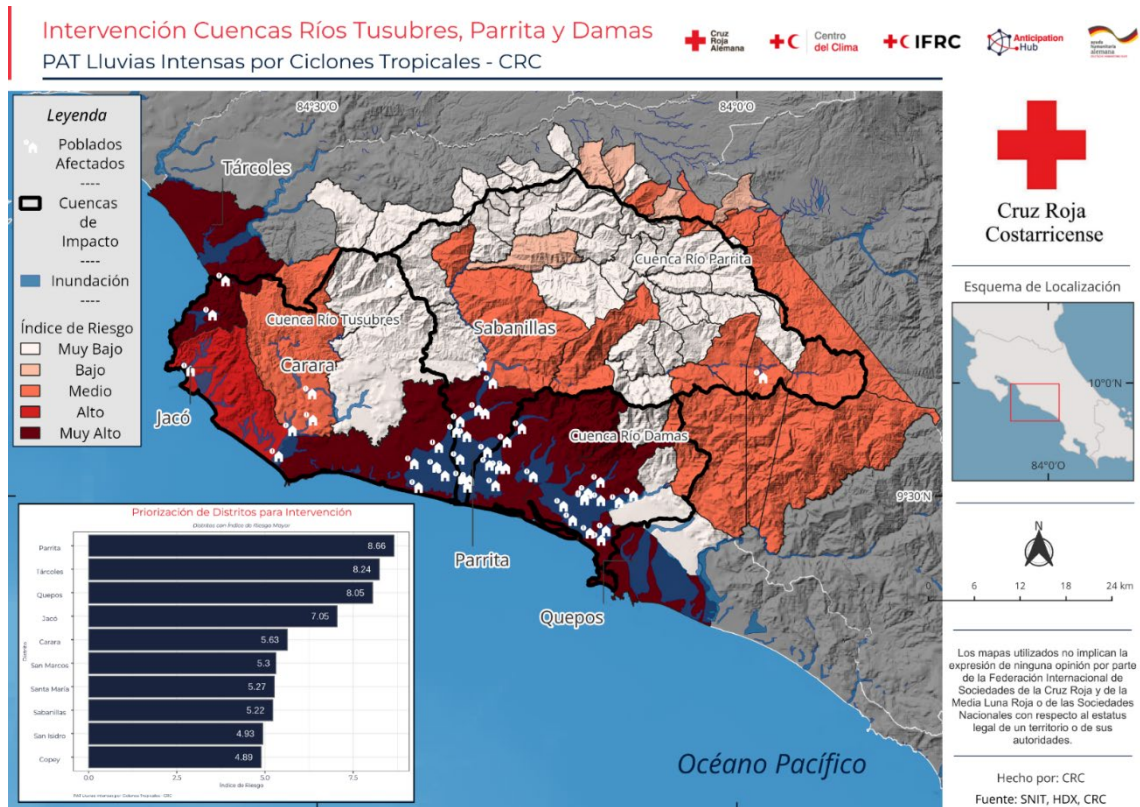
Table 2. Triggers for EAP

Definition and justification of impact level: For this EAP, the following impact thresholds have been defined, according to the amount of rainfall historically in the communities near the rivers with the highest risk of flooding. Therefore, based on a field impact analysis and information from the IMN, the following impact levels (400 and 300 mm) have been established for the activation of early actions. The return period varies depending on each event, but in relation to these magnitudes, it exceeds the threshold greater than 5 5-year return period. Graph 1 shows the years 2010, 2016, 2017, and 2020 extreme accumulated rainfall in 5 days which exceeded the thresholds of 300 and 400 mm and are associated with tropical cyclones Hurricane Tomas (2010), Hurricane Otto (2016), Hurricane Nate (2017), Hurricane Eta (2020).



Graph 1. Impact thresholds

Identification of the intervention zone: Using geographic information tools as a support, it is possible to visualize the environment of the flood hazard zones in a more accurate way, generating decision-making in the event of an activation and thus taking measures to protect the population. The identification of communities at risk was carried out based on the collection and analysis of information from events generated over time. Map 3 shows the intervention areas:

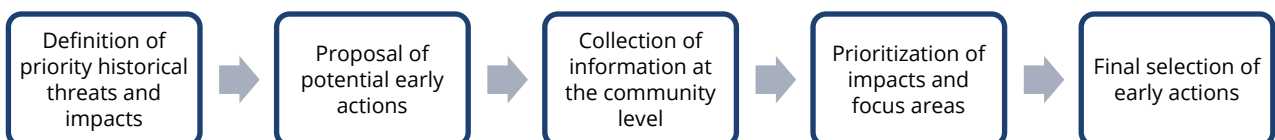


Map 3. Areas of intervention

To identify vulnerable communities, the National Commission for Risk Prevention and Emergency Attention (CNE) flood hazard maps were analyzed. If the EAP is activated, scientific information will be monitored, and adjustments will be made as appropriate according to changes in an event that is generated.

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


The National Society of Red Cross of Costa Rica selected the Multi-purpose Cash as an anticipated action, in view of the analysis based on experiences from previous events since 2009 as a tool to



provide humanitarian aid. The process for the definition of these actions is summarized in the following chart:


For the selection of the Multi-purpose Cash, a feasibility study and a baseline survey were carried out to identify the capacities installed in the National Society and the points that require more attention to strengthen them. In addition, information from past events and identified needs were considered. The studies have indicated the Multi-purpose Cash as a feasible early action and in accordance with the short time frame required in the EAP. Another key point for the selection was the consultation with the different institutions that coordinate emergency events in the different communities located in the risk zones. It is important to note that the National Society has a framework agreement with a local bank for the issuance of humanitarian debit cards.

PLANNED OPERATIONS

| | | | |
|---|---|-------------------------|---------------------|
|  Multi-purpose Cash | Female > 18: 720 | Female < 18: 280 | 377,517 CHF |
| | Male > 18: 720 | Male < 18: 280 | AP Code: 081 |
| Indicator: | Number of people reached with multi-purpose cash in advance of a hazard. | | |
| Readiness Activities | <ol style="list-style-type: none"> 1. Work sessions to prioritize communities. 2. Talks to organize the execution of early actions. 3. Community census and follow-up. 4. Meetings to define selection and follow-up criteria. 5. Awareness-raising meetings. 6. Purchase of 2050 cards for Multi-purpose Cash. | | |
| Priority Early Actions: | <ol style="list-style-type: none"> 1. Fuel and maintenance for the intervention (conditioned to full activation of the EAP). 2. Food and lodging for activation personnel (10 people for 4 activations). 3. Multi-purpose Cash (including bank charges). | | |

Enabling approaches

| | | | |
|---|--|--|---------------------|
|  Secretariat Services | | | 49,949 CHF |
| | | | AP Code: 122 |
| Objective: | | | |
| Readiness Activities: | <ol style="list-style-type: none"> 1. Monitoring visits by the IFRC. 2. Finance Officer salary. 3. PMER officer salary. 4. CA disaster coordinator salary. | | |
| Priority Early Actions: | <ol style="list-style-type: none"> 1. Accompaniment during activation. | | |

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|---|--|--|
|  National Society Strengthening | 101,175 CHF | |
| | AP Code: 124,125,126 | |
| Objective: | | |
| Readiness Activities: | <ol style="list-style-type: none"> 1. Monitoring and evaluation. 2. Office supplies. 3. Telephone and internet. 4. Per diem and meals for staff. 5. Fuel and vehicle maintenance. 6. Bank charges. 7. Project coordinator salary. 8. Project assistant salary. | |
| Priority Early Actions: | <ol style="list-style-type: none"> 1. Purchase of special personal protective equipment for floods (for staff and volunteers). | |

Contact information

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

In the National Society of Red Cross of Costa Rica

- **Risk Management Director**, Jim Batres Rodríguez, jim.batres@cuzroja.or.cr
- **Project Unit Coordinator**, David Picado Luna, david.picado@cuzroja.or.cr
- **FbF Project Manager**, Walter Zárate, walter.zarate@cuzroja.or.cr

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



Early Action Protocol Summary

EAP2023CR02 - Cruz Roja Costarricense
Lluvias Intensas por Ciclones Tropicales

Operating Budget

| | Readiness | Pre-Pos Stock | Early Action | TOTAL |
|---|----------------|---------------|----------------|----------------|
| Planned Operations | 32.270 | 5.960 | 339.288 | 377.517 |
| Shelter and Basic Household Items | 0 | 0 | 0 | 0 |
| Livelihoods | 0 | 0 | 0 | 0 |
| Multi-purpose Cash | 32.270 | 5.960 | 339.288 | 377.517 |
| Health | 0 | 0 | 0 | 0 |
| 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 | 0 | 0 | 0 | 0 |
| Community Engagement and Accountability | 0 | 0 | 0 | 0 |
| Environmental Sustainability | 0 | 0 | 0 | 0 |
| Enabling Approaches | 135.575 | 7.988 | 7.562 | 151.124 |
| Coordination and Partnerships | 0 | 0 | 0 | 0 |
| Secretariat Services | 47.712 | 0 | 2.237 | 49.949 |
| National Society Strengthening | 87.863 | 7.988 | 5.325 | 101.175 |
| TOTAL BUDGET | 167.844 | 13.948 | 346.849 | 528.641 |

all amounts in Swiss Francs (CHF)