

Community based flood management  
activities in Trinidad and Tobago -  
Organized under the framework of the  
CREWS Caribbean Initiative

**‘Building Knowledge and Awareness  
on Flood Management’ training  
session and flood level marking in  
the communities of Trinidad and  
Tobago**

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*Report  
May 2023*



# Context

Since 2018, the regional project “Strengthening Hydro-Meteorological and Early Warning Services in the Caribbean” (CREWS Caribbean) has been striving to support regional and national partners to continually improve hydrometeorological and early warning capacity and service delivery to advance preparedness and reduce multi-hazard risks. CREWS Caribbean is jointly implemented by the World Bank Group (WB), World Meteorological Organization (WMO) and United Nations Disaster Risk Reduction (UNDRR), in partnership with the Caribbean Meteorological Organization (CMO), the Caribbean Disaster Emergency Management Agency (CDEMA), and the Caribbean Institute for Meteorology and Hydrology (CIMH), along with the region’s national hydrometeorological service providers (NMHS) and national disaster management offices (NDMOs).

The project has three components:

1. Development of regional strategy to strengthen and streamline early warning and hydromet services (led by the WB)
2. Institutional strengthening and streamlining of early warning and hydromet services (led by the WMO)
3. Support for piloting high priority national activities including impact-based forecasting (led by the WB)

Under the framework of this project, the Trinidad & Tobago Red Cross Society and the Trinidad and Tobago Meteorological Service (TTMS), in joint collaboration with the Trinidad and Tobago Ministry of Rural Development and Local Government – Disaster Management Unit, the Trinidad and Tobago Water Resources Agency, the Caribbean Meteorological Organization and the WMO aimed to improve response capability to flood-related risk-information and warnings through increased coordination between National Meteorological and Hydrological Services, Disaster Risk Management authorities, community members and other relevant local organizations, especially in the Sangre Grande area of Trinidad. In an effort to close existing gaps and enhance community-based flood management and response capabilities, a one-day workshop on “Building Knowledge and Awareness on Flood Management” was held in Leemond Village, Vega de Oropouche, Sangre Grande (Trinidad). Additionally, together with respective community members, flood markers were installed in the same area. Through interactions with the community members, this activity was also used to collect/catalogue data as to previous flood events in the respective communities.

This activity contributed to the overarching CREWS Caribbean project goals and specifically to components two and three as it supports the priority activity “integrated approach to flood management” as outlined in the Caribbean Regional Roadmap 2021 – 2025. Similar activities had been implemented already in Antigua and Barbuda from September – November 2022.

# Objectives

The overall objectives of the implemented activities were to provide relevant theoretical knowledge and conduct practical exercises to increase the understanding as to concepts of floods and the different phases of flood management amongst community representatives of Sangre Grande, Trinidad and relevant agencies involved in the process. The workshop hosted community members and was supposed to increase the understanding of challenges faced by the community, the responsible stakeholders involved, actions to take in an emergency situation and instructions and discussions as to how to prepare for emergency situations.

The objective of the flood marking activity is for community members to be able to identify a safe location for the storage of valuable goods, finding suitable evacuation points as well as identify a suitable elevation when constructing new houses. Through interactions with the community members, this activity also aimed to collect/catalogue data as to previous flood events in the respective communities.

The main objectives of these two activities were:

- 1) Enhancing theoretical and practical knowledge on various aspects of flood management and also enable different types of institutions and actors in Trinidad and Tobago to share experience and good practices in managing hydro-meteorological events.
- 2) In selected most flood-prone communities, identifying a safer location for storage of valuable goods, evacuation points as well as in the construction of new houses

## Key Facts

- Flood Marking Activity
  - 19.05.2023
  - Communities: Leemond Village, Vega de Oropouche, Sangre Grande
- Building Knowledge and Awareness on Flood Management
  - 20.05.2023
  - Sangre Grande Civic Centre, Sangre Grande, Trinidad

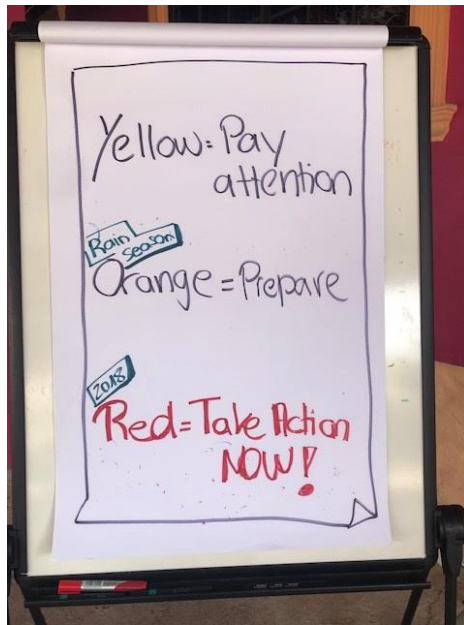
## Flood Marking Activity – 19.05.2023

Through the Trinidad and Tobago Red Cross Society, and in joint collaboration with the CMO, the TTMS and the WMO, a flood marking activity was organized. The Trinidad & Tobago Red Cross Society selected two flood-prone communities in the Sangre Grande area and coordinated the event.

The activities involved the procurement of paint and flood marker signs, effective communication with community members to encourage active participation, provision of shelter and chairs, as well as workshop materials and refreshments.

### **Community 1: Vega de Oropouche, Melajo Road**

To start, a short meeting was organized with members of the community to discuss and gather insight into the current flooding issues and to identify past water levels during floods. Subsequently, the flood level marking activity was presented to the community, providing an explanation of the concepts and methodology involved in marking the flood levels on community houses or electricity poles located within the area.



After this short introduction and Q&A session, flood levels were marked at selected locations. The locations as well as the height of the markings were identified by the community members. It was also them who led the marking activity.





## **Community 2: Leemond Village, Sangre Grande, Sangre Grande**

The same approach that was in community 1 was applied.

The community of Leemond Village has been facing yearly flooding situations due to the river stream flowing beside the community. This community has a population of around 30 Households and most of the people work in the town of Sangre Grande.



# Building Knowledge and Awareness on Flood Management – Training Session – 20.05.2023

A one-day workshop on “Building Knowledge and Awareness on Flood Management” was held on 20 May 2023. It hosted 20 participants – among these community member and representatives of relevant national and local organizations and increased the understanding of flood related challenges faced by the communities, the responsible stakeholders involved, actions to take in an emergency situation and instructions and discussions as to how to prepare for emergency situations.

Initially, participants from communities and local agencies presented existing issues in flood management, mainly on early warning dissemination and communication, hazard and risk maps, responding at the community level.

Following this the concept of floods and flood management, as well as of an end-to-end early warning system for flood forecasting, and integrated flood management to the participants was introduced. Subsequently, a group discussion was held out to understand existing practices, gaps/challenges and opportunities for improvement in end-to-end early warning system for flood forecasting.

Agenda Item	Key Discussion Points
Expectations & Objectives of Workshops & Flood Markings	<p>The participants indicated to have the following workshop expectations:</p> <ul style="list-style-type: none"> <li>- Learn something new with regards to flood management</li> <li>- Strengthen interaction with community members</li> <li>- Exchange of experiences</li> <li>- Be able to better prepare for flooding events in their community</li> </ul>
Group discussion to better understand the community situation in the community	<p>How do you normally receive warnings &amp; alerts?</p> <ul style="list-style-type: none"> <li>- Social Media/WhatsApp</li> <li>- CERT</li> <li>- Television</li> <li>- Word of mouth</li> <li>- Websites – TTMS, NHC Satellite</li> <li>- Most participants indicated that information is validated through different sources.</li> </ul> <p>Flood affected Areas:</p> <ul style="list-style-type: none"> <li>- Valencia: Quarry, St. Albans, Toco Main Road</li> <li>- Coalmine</li> <li>- Ojoe Road, Hospital area &amp; nearby streets</li> <li>- Manzanilla: Plum Road &amp; nearby streets</li> <li>- Cunaripo : Samlalsingh, Cunaripo, Guaico-Tamana Road</li> <li>- Vega de Op. N. CP Leemond</li> </ul>

- Town Center Rio
- Sangre Chiquito
- Fishing Pond Road

What are your experiences?

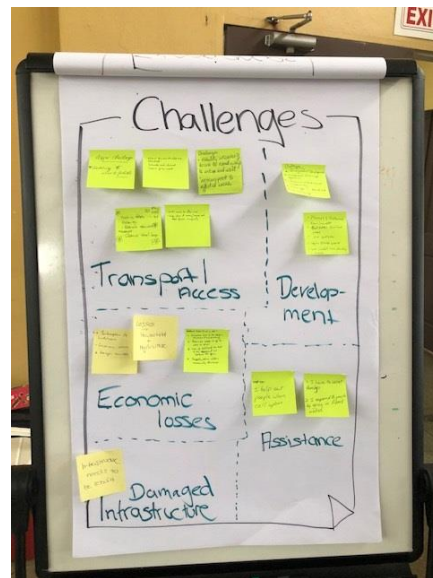
- Increasing No. of flooding events
- Increasing intensity of floods
- Flooding in new areas
- Development with influence on flooding
- Water takes longer to drain out

What are the challenges related to flooding?

- Lack of timely communication
- Community representatives not taking the warnings seriously and staying at home
- Availability of the evacuation equipments

Major challenges were identified in the area of:

- Transport & Access
- Development
- Economic losses
- Damaged Infrastructure
- Assistance



Concepts of floods and flood management

Mr. Ramesh Tripathi held an interactive presentation on Flood Management.

Group discussion on actions to address challenges

**Data collection**  
*General information*



The population may request data access with local agencies. Data is achieved in the services, but there are plans to develop a water information system, through which data is collected and archived.

#### *Gaps and Challenges*

- Number of stations for rainfall and streamflow have been installed, but there are persisting gaps – financial support needed
- Latest population census was 2011 – a new census needs to be made.
- There is a lack of disaggregated data
- Standardization of data formatting needs to be improved
- Contact information as to vulnerable houses/population needs to be updated (incl. Age, Gender etc.)
- Vulnerability mapping needs to be conducted
- Persistent restriction in data sharing

#### *Way Forward*

- Advocate the need for data sharing
- Development of RIX Platform under CREWS Caribbean
- Data sharing amongst organizations present in the room – establishment of formal MoU's

#### **Early Warning Information**

##### *Gaps and Challenges*

- Reaching the last mile is a persistent gap
- Information must be transmitted in a way understood by the communities
- In Tobago: Warnings much better translated into early action as in Trinidad

- Population doesn't act on warnings
- Incorrect forecasts – lead to reduced trust
- Insurance systems targeting vulnerable groups
- Population relies a lot on social media/network access to receive warnings

*Way forward*

- Use Best-Practices from Tobago
- Introduce cell-broadcasting
- Educate community of implications of forecasts (no 100% certainty)
- Warning information needs to be facilitated
- Move away from relief grants to adaptation funds
- Incentivise procurement of preparatory items
- Tax relieves to buy preparatory items
- Law enforcement → if people settle on flood plains but then those are the same people that receive the grants.
- Grant utilization needs to be tied to specific relief-related use

**Response**




*Gaps and Challenges*

- Response based on needs & resources available – however, it cannot reach everyone
- Communities rely a lot on disaster management – instead of taking the initiative to organize themselves as well
- Huge difference in gender – men show less interest in the communities (most of village councils are run by woman, most of participants were woman during the workshop as well)

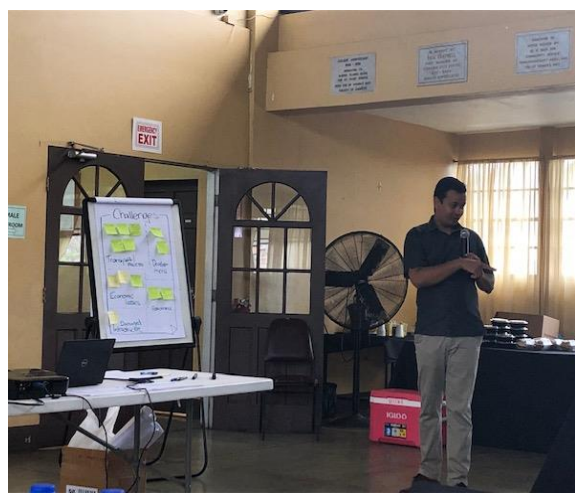
*Way forward*

	<ul style="list-style-type: none"> <li>Community needs to be stronger involved in post-disaster assessment</li> </ul> <p>Community needs to be stronger informed when settling in flood-prone areas</p>
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The flyer below was disseminated to participants during the workshop.

Important Numbers	Flood Preparation
 <p>Police   999 Fire   990 Ambulance   811 Sangre Grande Disaster Management Unit   800-7472 Sangre Grande Hospital   668-2273 ODPM   640-1285 and 511 TTMS   225-3488</p>	<ol style="list-style-type: none"> <li>1. Prepare an <b>emergency kit</b> for your family with supplies to last at least three days if you need to evacuate from your home.</li> <li>2. Store <b>emergency supplies</b> at home if you might become trapped and isolated.</li> <li>3. If possible <b>raise furniture and appliances off the floor</b></li> <li>4. Know the <b>important contact information</b> of first responder agencies in the event you need <b>assistance</b> during an emergency</li> <li>5. Flood waters often rise quickly in your community, <b>do not wait until it is too late to decide to act</b>, monitor news and tv as well as social media pages of the Trinidad &amp; Tobago Met Services, ODPM and Ministry of Rural Development and Local Government to receive early warning messages.</li> <li>6. <b>Sign up for the new national public alerting system PANS</b> at <a href="https://odpm.gov.tt/PANS">https://odpm.gov.tt/PANS</a></li> <li>7. Before flood waters begin to rise to dangerous levels, <b>make the decision to seek alternative shelter early enough to safely do so.</b></li> <li>8. <b>Contact the Sangre Grande Disaster Management Unit at 800-7472 to find out about locations of shelters</b>, if they are activated, collection points for free sand bags and to make reports if you are affected as well as how you can join your local Community Emergency Response Team (CERT).</li> </ol>
<p>Website: <a href="http://www.metoffice.gov.tt">http://www.metoffice.gov.tt</a> Email: <a href="mailto:DirMetTT@gov.tt">DirMetTT@gov.tt</a>; <a href="mailto:metcommunications@gov.tt">metcommunications@gov.tt</a></p> <p>   </p>	

### Workshop Impressions





## Outputs of both activities

- ✓ Trained participants have increased theoretical and practical knowledge and understanding of various concepts and processes in flood management mainly on flood preparedness and response.
- ✓ Local and national agencies have a better understanding of challenges faced by the selected communities
- ✓ Trained participants will share and apply the knowledge and skills during flood events
- ✓ Community representatives have increased knowledge and awareness on flood management related activities as well as flooding water level markings. They are able to make use of these markings when constructing houses in the future or generally in the next flooding situation (warning, evacuation, storage of household goods etc.)

## Follow up actions or recommendations

Recommended action	Priority	Lead Dept. (or External)	Other Depts.	Deadline
Integration of experiences and examples into the APFM Community Based Flood Management in the Caribbean Handbook (development initiated under the CREWS Caribbean Initiative)	High	MS/PMIU Hydro/S	n/a	30 July 2023

T&T Red Cross will continue to implement flood level marking signs in other communities of Trinidad. (not under the CREWS Caribbean Project)	High	To follow-up – MS/PMIU	Hydro/S	n/a
The knowledge and skills gained by the participants will be transferred to other individuals of the community or at the local levels.	High	T&T Disaster Management and Red Cross	n/a	n/a

# Annexes

## Annex 1: One day knowledge and awareness session- Agenda

Time	Session Description
08:30 – 09:00	Registration of Participants
09:00 – 09:15	Opening ceremony <ul style="list-style-type: none"> <li>• Introduction T&amp;T Red-Cross Society</li> <li>• Introduction TTMET/CMO/WRA/WMO</li> </ul>
09:15 – 09:30	Introductory Tour de Table
09:30 – 09:45	Expectations & Objectives of Workshops & Flood Markings
09:45 – 10:00	<i>Coffee Break</i>
10:00 – 11:15	<b>Group Discussion (amongst Community Members)</b> <ul style="list-style-type: none"> <li>• What are your experiences with flooding?</li> <li>• What are the current challenges?</li> <li>• Which area/houses are most prone to flooding?</li> <li>• How do you currently prepare and respond for flooding?</li> <li>• How do you currently receive flood alerts &amp; warnings?</li> <li>• Which equipment do you have that could be beneficial in a hazardous situation?</li> </ul>
11:15 – 12:00	Concepts of floods and flood management
12:00 – 12:30	Open discussion and Q&A
12:30-13:30	<i>Lunch break</i>
13:30 – 15:00	<b>Flip-Chart activity - End-to-End Early Warning Systems for Flood Forecasting</b> <ul style="list-style-type: none"> <li>• Each group is assigned to one action-chain component if integrated flood management and will discuss actions, processes, and improvements as to responding to flooding events in the community</li> </ul> <p>Note: This activity has been changed – one group was formed that discussed actions, processes and improvements.</p>
15:00 – 15:45	Presentation & Discussion
15:45 – 16:15	Prioritization of next steps/activities & development of recommendations (incl. information about flood level marking)
16:15 - 16:30	Closing of the workshop

## Annex 2: Participants for the one-day training workshop

COMMUNITY-BASED FLOOD MANAGEMENT -  
COMMUNITY AWARENESS WORKSHOP  
COMMUNITY: SANGRE GRANDE  
SATURDAY 20<sup>TH</sup> MAY 2023, 8:30AM TO 3:30PM

NAME	ADDRESS/AGENCY	PHONE NUMBER	EMAIL	SIGNATURE
Valencia Johnson	46 Settlement, Opie Road Sangre Grande	327-0228	valenciajohnson@gmail.com	<i>Valencia</i>
ALLISON STAFFORD	335 Plombouyant Crub Valencia	683-6912	allieatami@gmail.com	<i>Allison</i>
INGRID BELTON	12mm Coalmine Road, S/Sangre	735-7418	idbelton@gmail.com	<i>Ingrid</i>
ALEC JAGGERMAN	SGRC (OST)	764-8880	alec.jaggerman@gmail.com	<i>Alec</i>
LESLIE ANN SAMARCO	4444 Williams Tr. St Albans Valencia	730-1333	lelieannsamarcos@yahoo.com	<i>Leslie</i>
ADWAR BAKSH	ADPM	498-9722	anwar.baksh@gov.tt	<i>Adwar</i>
KEVIN JAGGERMAN	SGRC DMU	280-2938	kevin.jaggerman@gmail.com	<i>Kevin</i>
DIMITRI BOASEE	SGRC DMU	703-9021	dimitriboasee@gmail.com	<i>Dimitri</i>
HALEY ANDERSON	CMO	703-9900	handerson@cmo.org.tt	<i>Haley</i>
Barbara Tapia	WMO		btapia@wmo.int	<i>Barbara</i>
Ramesh Tripathi	WMO	79779223020	RTRIPATHI@wmo.int	<i>Ramesh</i>
Frank Galach	WMO	7478225810	SGalach@wmo.int	<i>Frank</i>

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COMMUNITY AWARENESS WORKSHOP  
COMMUNITY: SANGRE GRANDE  
SATURDAY 20<sup>TH</sup> MAY 2023, 8:30AM TO 3:30PM

NAME	ADDRESS/AGENCY	PHONE NUMBER	EMAIL	SIGNATURE
Marcia Hamilton	Quash Trace 8/6	701-6292	Marciahamilton@gmail.com	<i>Marcia</i>
LYNESSA EDWARDS	SELLIER ST FOSTEK ROAD 9/2	725-4643	lynnessafavorite@outlook.com	<i>Lynessa</i>
ISAAC STEPHEN	SGRC DMU	384-2746	isaac.stephen@live.com	<i>Isaac</i>
MARION MC MILLAN	WPA/NASA	662-2302 ext 6504 495-6178	marion.mcmillan@san.gov.tt	<i>Marion</i>
Alejandro Morde	TRCS	747-2327	alejandro.morde@TRCS.org	<i>Alejandro</i>
Julio Pereira	TRCS	336-0913	julio.pereira@TRCS.org	<i>Julio</i>

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LYNESSA EDWARDS	SELLIER ST FOSTEK ROAD 9/2	725-4643	lynnessafavorite@outlook.com	<i>Lynessa</i>

## Annex 3: Knowledge and Awareness workshop pre-learning materials

<https://www.floodmanagement.info/community-based-flood-management/>

<https://www.floodmanagement.info/organizing-community-participation-for-flood-management/>

<https://www.floodmanagement.info/get-help/end-to-end-early-warning-systems-for-flood-forecasting-e2e-ews-ff/>

<http://www.bom.gov.au/australia/flood/knowledge-centre/understanding.shtml>