



Republic of Mozambique
National Institute for Disaster Risk Management and Reduction



Experiences and Good Practices of Disaster Risk Management and Reduction in Mozambique

Maputo, April 2023

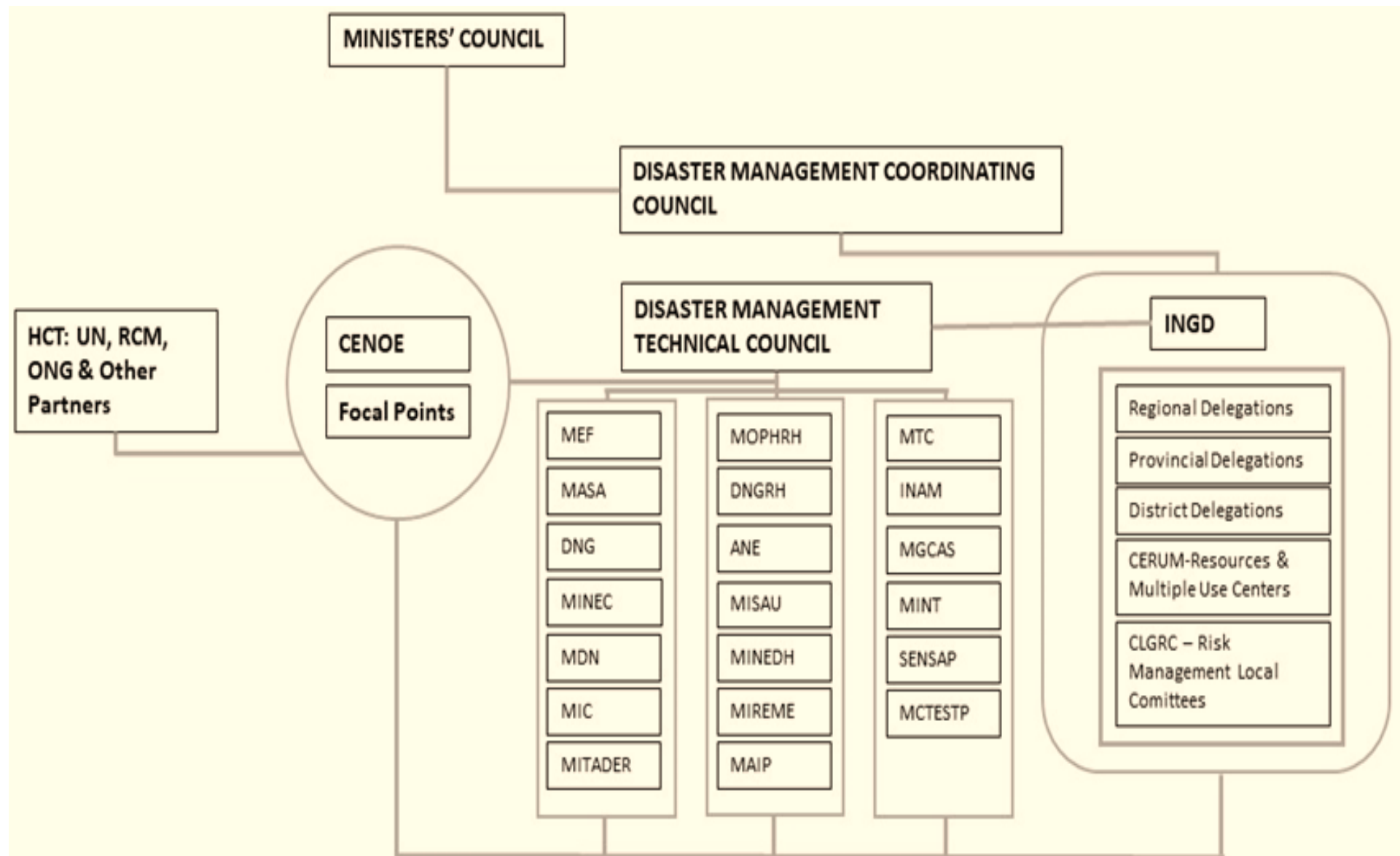
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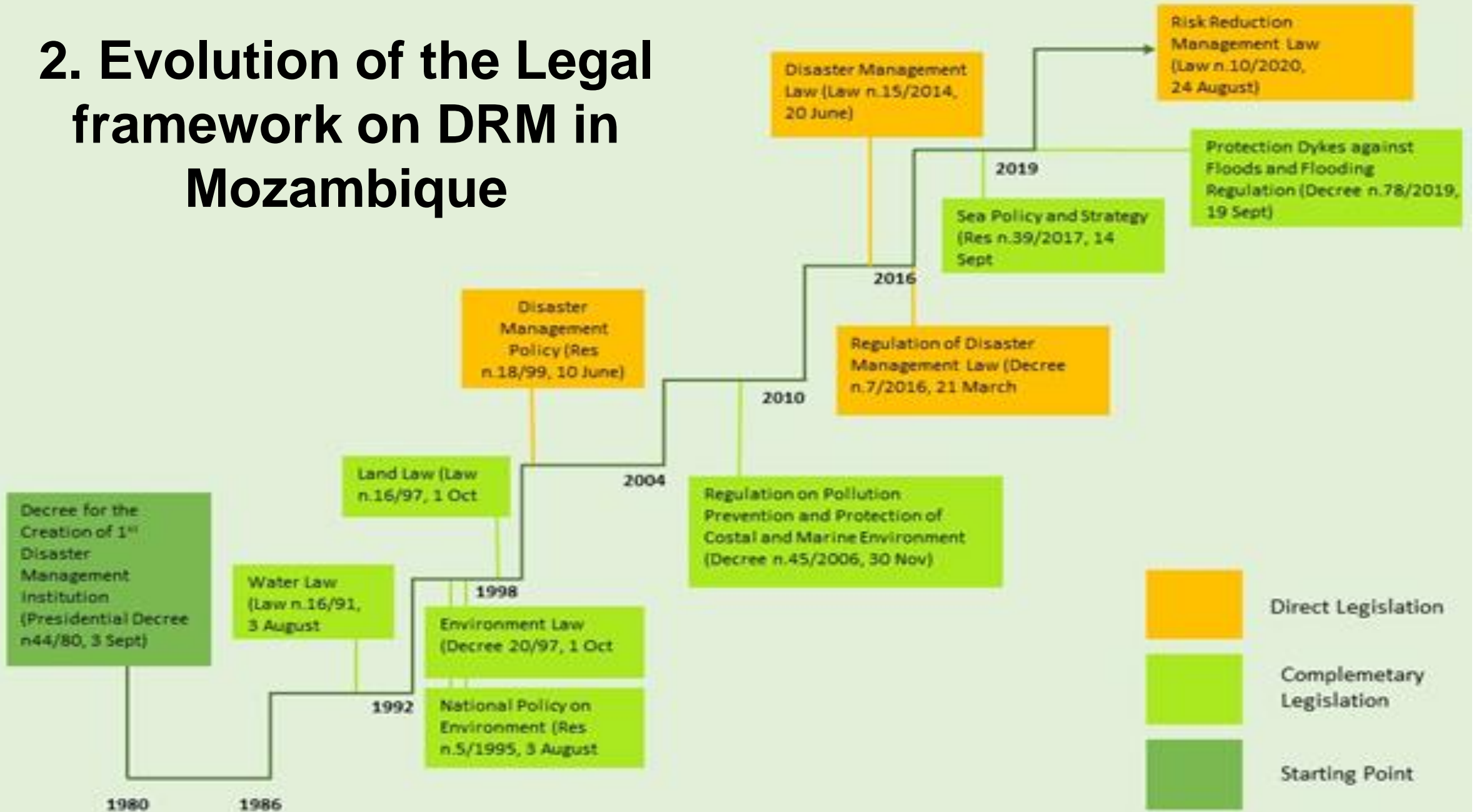
1. National DRM System
2. Evolution of the Legal framework on DRM in Mozambique
3. Contextualization
4. Lesson learned
5. Good practices
6. Main challenges



3. National DRM System



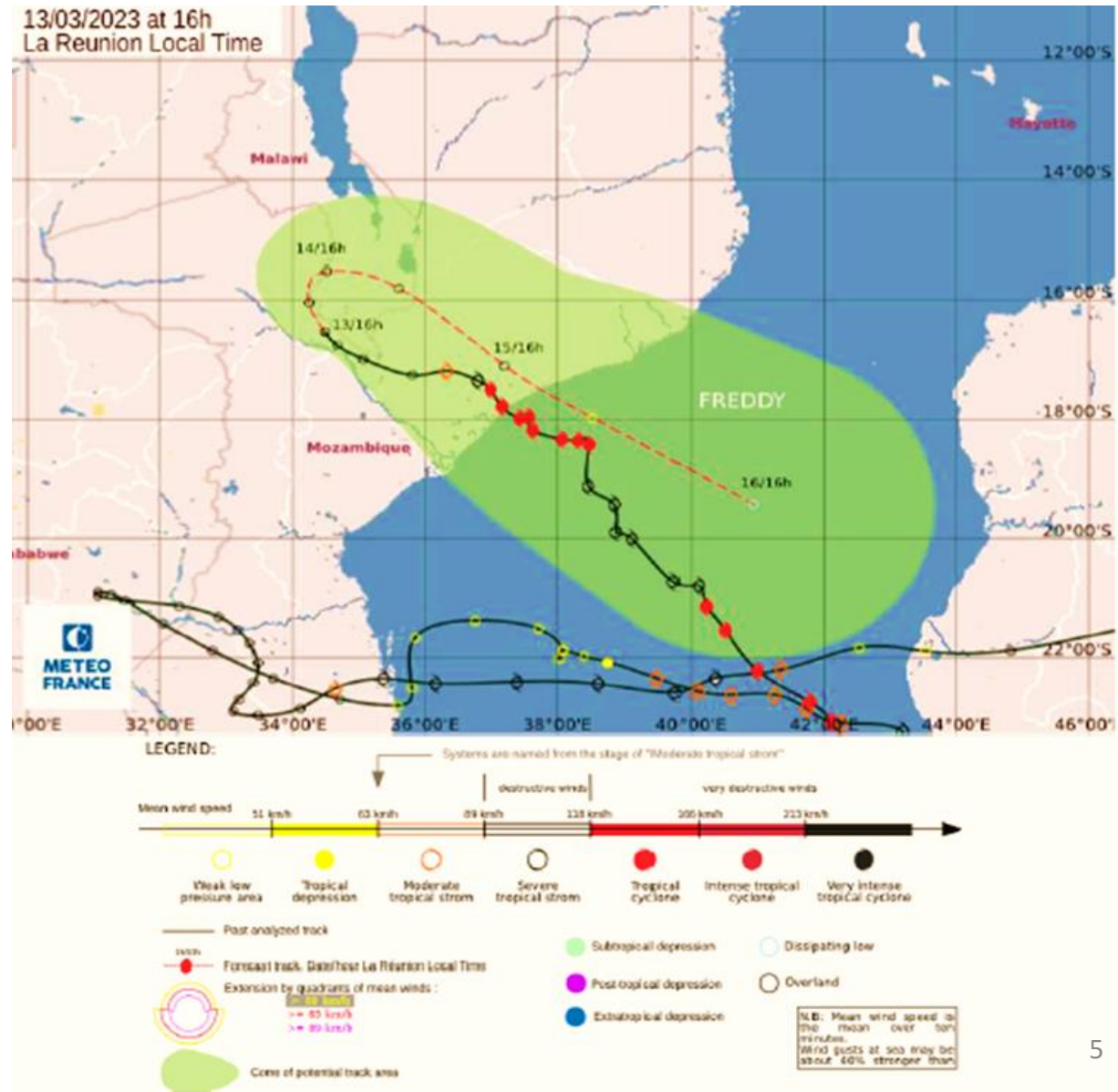
2. Evolution of the Legal framework on DRM in Mozambique



1. Contextualization



- Mozambique has been, cyclically, affected by extreme hydro-meteorological events, which are increasingly intense and frequent, as is the recent case of cyclone Freddy, which is considered the longest cyclone in the world, and that hit the country twice, in central provinces.
- In addition to the high exposure to disasters, the country faces great levels of socioeconomic vulnerability, as more than 60% of the population lives in low-coastal areas, where intense storms and floods occur frequently.



1. Contextualization (cont.)



According to the Inter-Agency Humanitarian Assessment of the response to Cyclone Idai in Mozambique, the GoM accelerated its response even before Cyclone Idai hit the country. Jointed interventions made by the former Institute for Disaster Management (INGC) and Cooperation Partners helped ensure that immediate humanitarian needs were accurately anticipated.



4. Lessons learned



Following successive climate-related extreme weather events, the Government of Mozambique learned key lessons from the following points:

- Disaster Management Framework
- Disaster Risk Management Strategies
- Disaster Risk Financing Opportunities



- **DRR policy and legal framework**
 - Law on Disaster risk Reduction and management (10/2020), which in a very forward looking approach has mandated INGD for disaster response and RR
 - DRR Master Plan 2017-2030,
 - Disaster Management Fund
 - Decree on Information flow for integrated cyclone and flood early warning (April 2022)
 - Climate Change Instruments (NDC, NAP, PLA)
 - CLGRD Strategy and Action Plan
 - IDP management policy and strategy
- **Strengthening the Early Warning System**
 - One district one meteorological station
 - Strategy and regulations for the operationalization of the flood and cyclone information dissemination platform
 - Approval of national drought Anticipatory Action SOP
- **Capacity building at local level**
 - Emergency Operating Centres (EOC) and provincial and district Technical Councils for DRM (CTGRD),
 - Local Committees for Disaster Risk Management (CLGRD),
 - Capacity building of local decision-making bodies (Administrators, Permanent Secretaries),
 - Use of local knowledge and cultural context in early warning and emergency messages
- **Understanding the risk and Information assessment**
 - Contingency Plans (District - Provincial - National)
 - Strengthening and adopting innovative approaches for risk assessment and post-disaster evaluation (e.g. use of drones)
 - Regular Risk Assessment and Mapping (cyclones, floods, strong winds, droughts)
 - INGD established Environmental and Social Safeguards Division - safeguards guideline developed
- **DRR Governance and Risk management**
 - PQG2019-2024: Priority 3: Strategic objective: "To reduce the vulnerability of communities, the economy and infrastructure to climate risks and natural and anthropogenic disasters"
 - Establishment of INGD: focus on prevention (INGD responds to the Council of Ministers)
 - National Plan for financial Protection against disasters
 - Economic and Social Plan (specific DRR budget line)
 - Multi-sectoral bodies established by law (CCGD, CTGD, COE, CCGRRD)
 - Launching of the SADC Humanitarian and Emergency Operations Centre (SHOC).

5. Good practices

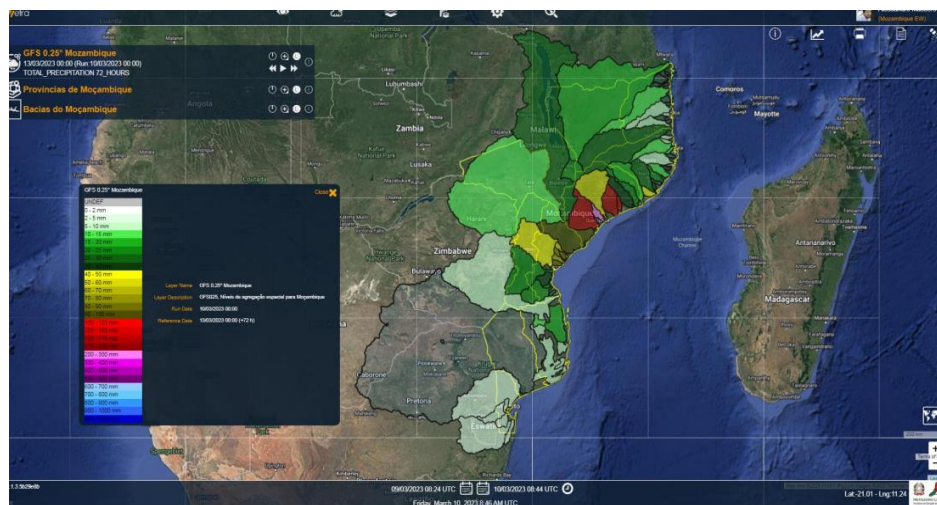
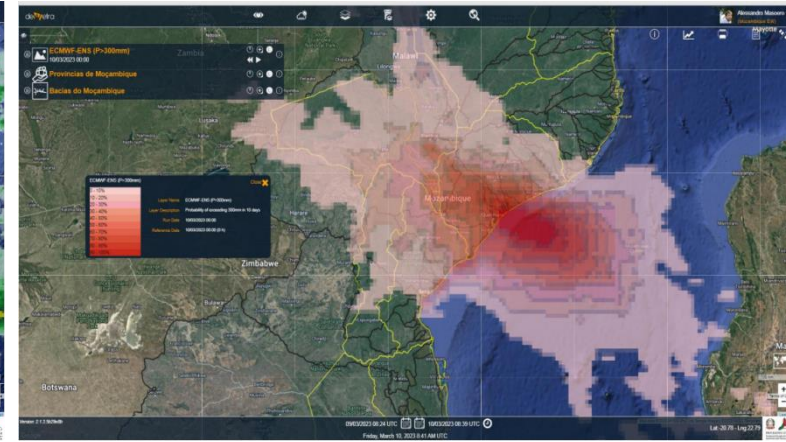
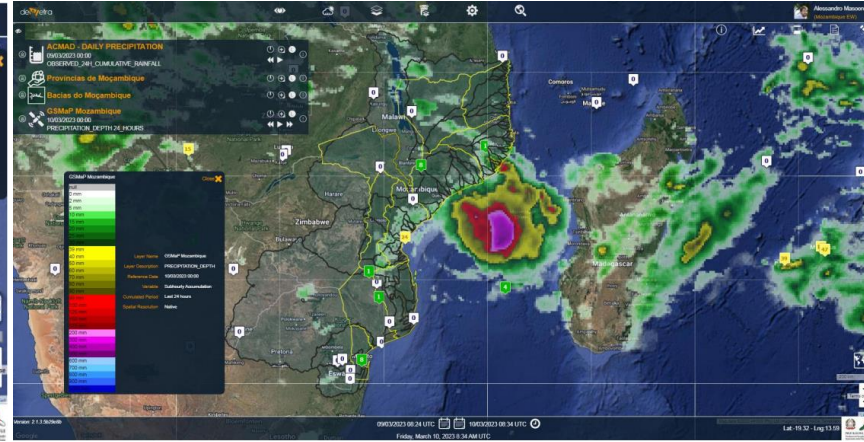
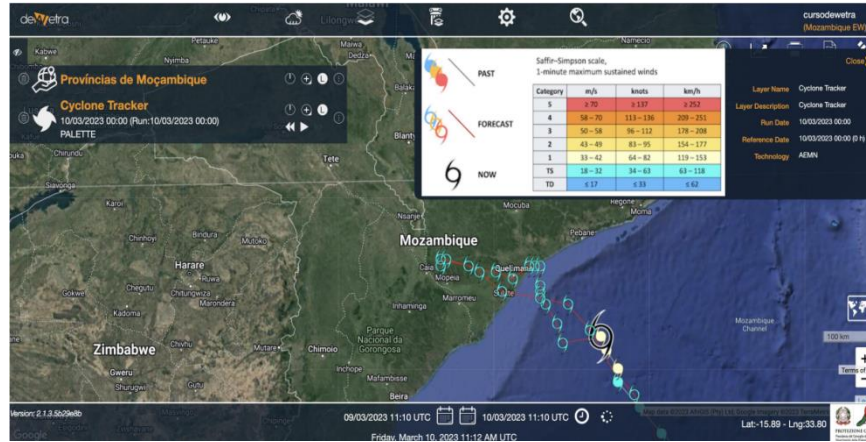


- Elaboration of the **Annual Multi-hazard Contingency Plan**, including COVID-19 and the displaced persons in the Central and Northern Mozambique;
- Establishment of **Integrated Platform for data and Information Management**: myDewetra and ONA
- Ensuring the **coordination of all stakeholders**, including Cooperating Partners, NGOs, Private Sector and Local Communities
- Dissemination of **alert information in local languages** reliable and available in local languages;
- Establishment of the **Local Committees for Disaster Risk Management (CLGRC)** and Promotion of training and simulations exercises for the local communities;
- **Prepositioning of goods**, search and rescue, communication and transportation means in strategic locations;
- **Improving of drought forecast and monitoring** by the Met Services, which already embedding definitions of indicators, thresholds, and triggers for activation of anticipatory actions.

Integrated Platform for data and Information Management



“myDEWETRA” PLATAFORM: ANALYSIS OF THE IMPACT OF CYCLONE FREDDY



Flood-Affected Population
09/03/2023 00:00 (Run: 10/03/2023 00:00)

GLOFAS Upstream Area
09/03/2023 00:00

GLOFAS Reporting Points
09/03/2023 00:00

Bacias do Moçambique

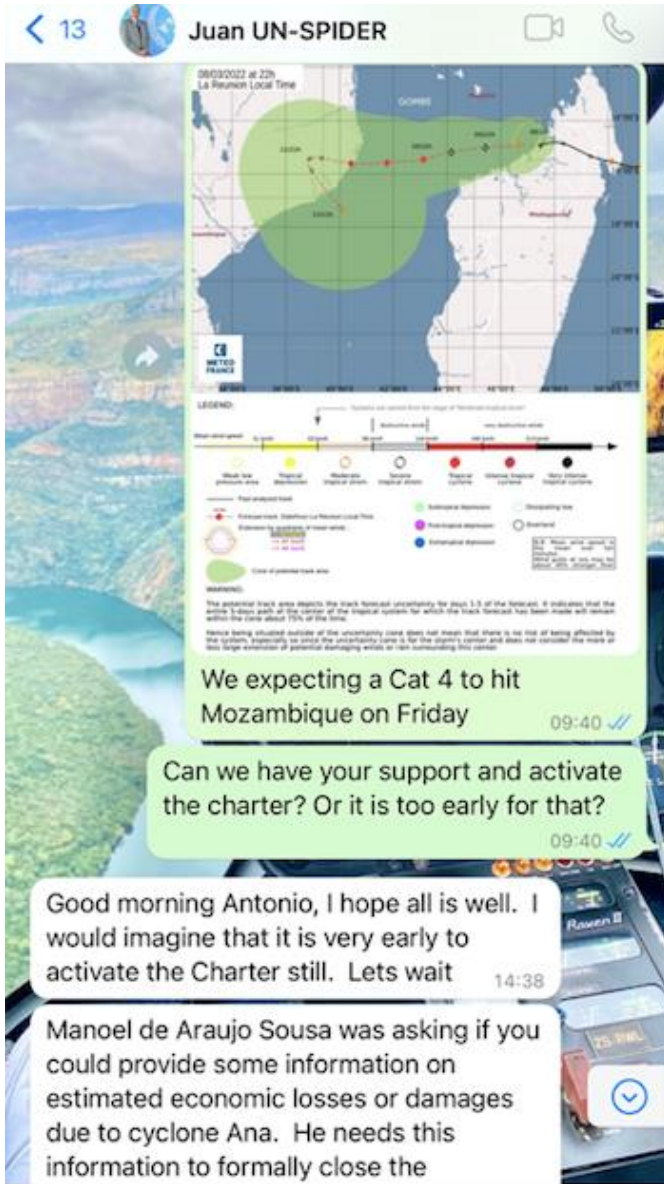
Provincias de Moçambique

CLASS	Distrito	Provincia	Unidade Sanitaria
HIGH	Marromeu	Sofala	HR Marromeu
HIGH	Morrumbala	Zambezia	CS Pieda
HIGH	Luabo	Zambezia	CS Mecaula
HIGH	Caia	Sofala	CS Ilha Chimbazo
HIGH	Caia	Sofala	CS Murrema
HIGH	Mopeia	Zambezia	CS Nzanza
HIGH	Caia	Sofala	CS Murraça
HIGH	Caia	Sofala	CS Nhambalo
HIGH	Marromeu	Sofala	CS Chueza
HIGH	Mutarara	Tete	CS Traquino
MEDIUM	Mopeia	Zambezia	CS. Noere
MEDIUM	Marromeu	Sofala	posto de saude de Bauze
MEDIUM	Marromeu	Sofala	CS Salone
MEDIUM	Mutarara	Tete	CS Jardim

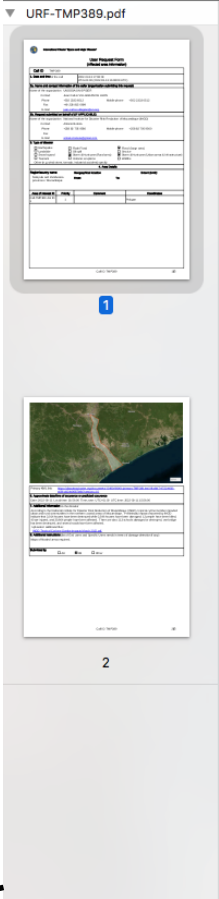
SCHOOLS	HIGH RISK	MEDIUM RISK
509 total	86	30

HOSPITALS	HIGH RISK	MEDIUM RISK
65	9	4

USE CASE: TC "GOMBE" RESPONSE



Following the request of INGD-CENOE to activate **The International Charter for Major Disaster**, with the support of UN-SPIDER (the project Manager for this Charter activation), on the 9th March 2022, UNOSAT has been providing near real time Satellite imagery and preliminary damage analysis of the impacts of the TC Gombe in Northern and Central Mozambique.



International Charter 'Space and Major Disaster'

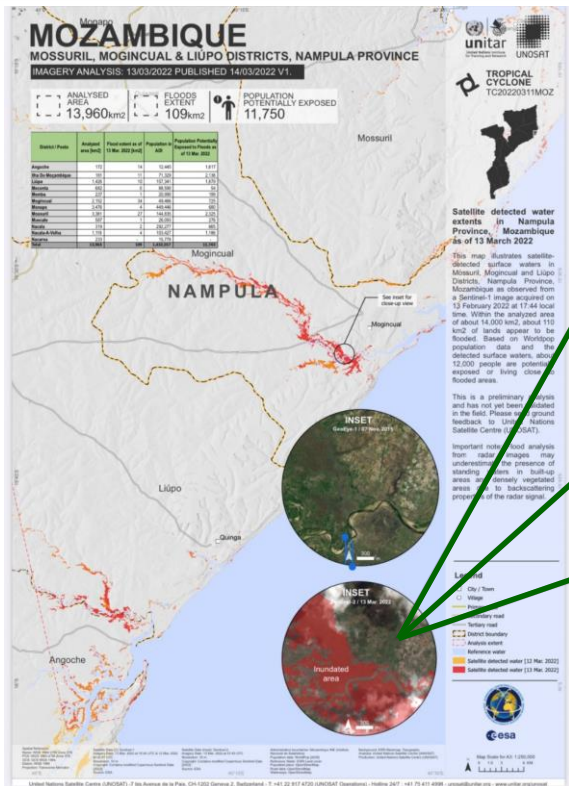
User Request Form (Affected area information)

Call ID	TMP389		
1. Date and time of the call	2022-03-13 17:08:09 UTC+01:00 (2022-03-13 16:08:09 UTC)		
2a. Name and contact information of the caller (organization submitting this request)			
Name of the organization	UNOOSA/UN-SPIDER		
Contact	Juan Carlos VILLAGRAN DE LEON		
Phone	+502 2333 6512	Mobile phone	+502 2333 6512
Fax	+49 228 815 0699		
E-mail	juan-carlos.villagran@un.org		
2b. Request submitted on behalf of (IF APPLICABLE)			
Name of the organization	National Institute for Disaster Risk Reduction of Mozambique (INGD)		
Contact	Antonio Beleza		
Phone	+258 82 705 9560	Mobile phone	+258 82 705 9560
Fax			
E-mail	antonio.beleza@gmail.com		
3. Type of disaster			
<input type="checkbox"/> Earthquake	<input type="checkbox"/> Flash Flood	<input checked="" type="checkbox"/> Flood (large area)	
<input type="checkbox"/> Landslide	<input type="checkbox"/> Oil spill	<input type="checkbox"/> Sea ice	
<input type="checkbox"/> Snow hazard	<input checked="" type="checkbox"/> Storm & Hurricane (Rural area)	<input checked="" type="checkbox"/> Storm & Hurricane (Urban areas & Infrastructure)	
<input type="checkbox"/> Tsunami	<input type="checkbox"/> Volcanic eruptions	<input type="checkbox"/> Wildfire	
Other (e.g. wind storm, tornado, industrial accident) specify:			

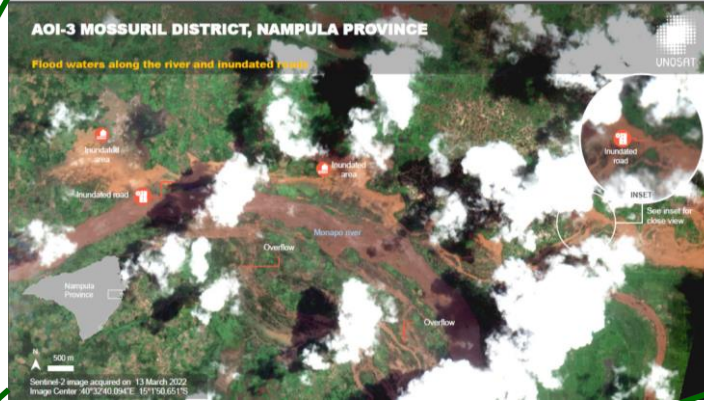
TC "GOMBE" in NAMPULA: Spatial Data analysis and Field Validations



Near Real time Satellite Imagery



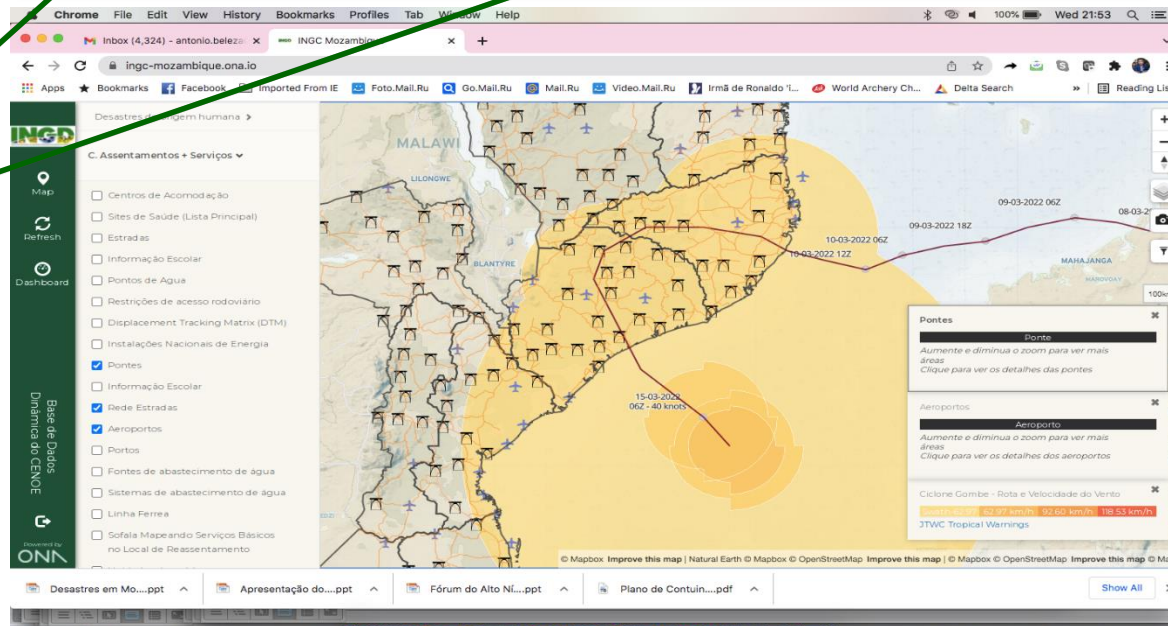
Preliminary Satellite data analysis



Validation process: Joint field and Drone Assessment



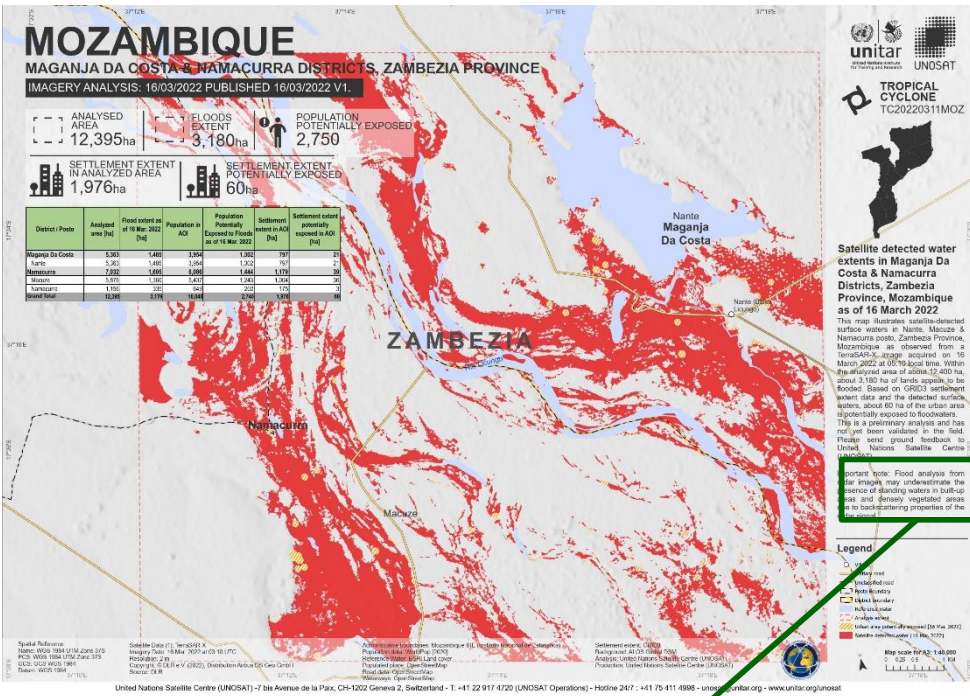
Data analysis process from ONA platform



TC "GOMBE" in ZAMBEZIA: Spatial Data analysis and Field Validations



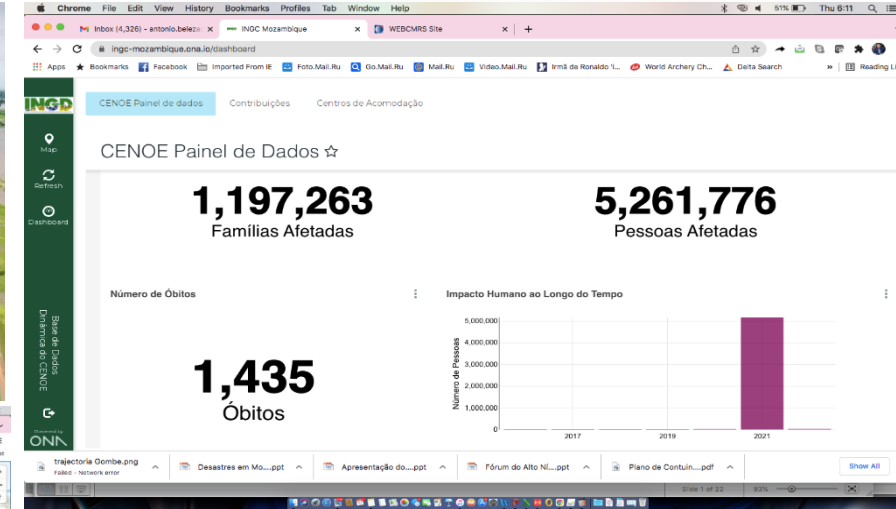
Satellite Imagery from the Charter



Validation process: Drone Assessment



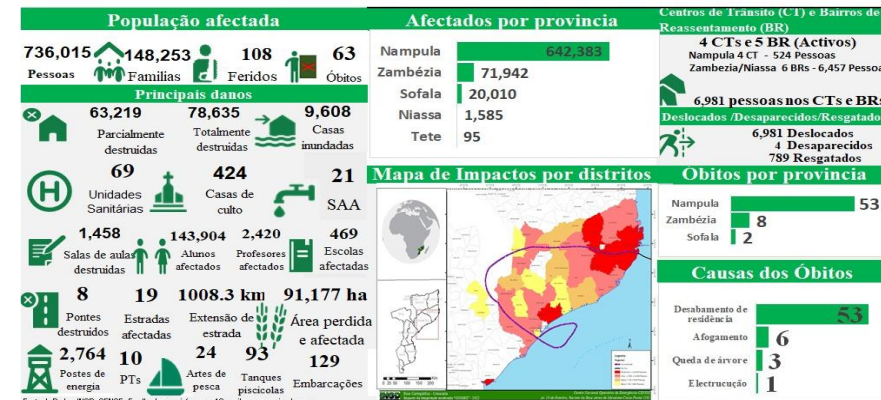
Updating our internal database



Snapshot Production and Info. Sharing

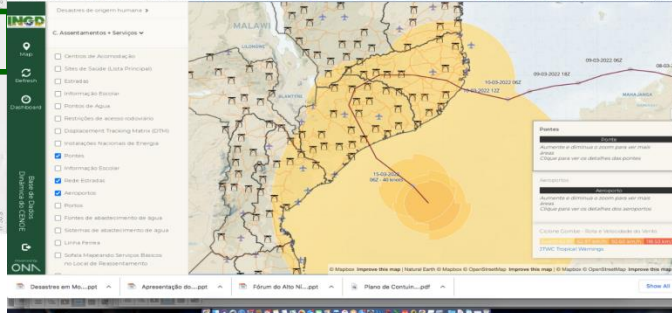
Ponto de Situação: Ciclone Tropical Gombe (27 de Março de 2022) Dados preliminares

O Ciclone Tropical Gombe, entrou em Moçambique no dia 11 de Março com ventos e rajadas de 165 e 230 quilômetros por hora, respectivamente. O ponto de entrada foi Mossuril, província de Nampula, as 02:00 horas, impactando as províncias de Niassa, Nampula, Zambézia, Tete e Sofala.



This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to United Nations Satellite Centre (UNOSAT).

Important note: Flood analysis from radar images may underestimate the presence of standing waters in built-up areas and densely vegetated areas due to backscattering properties of the radar signal.



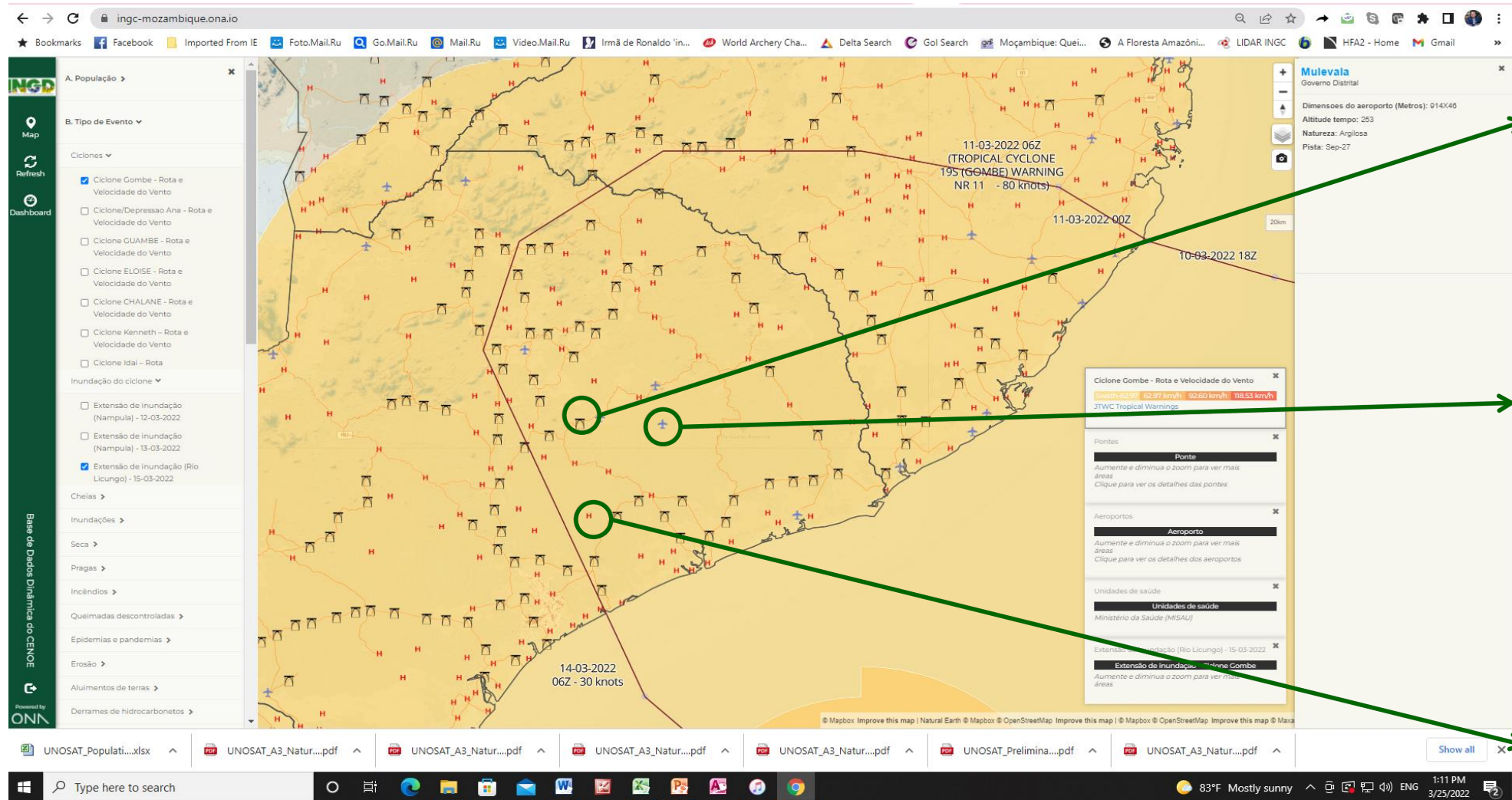
TC "GOMBE" in ZAMBEZIA: Spatial Data analysis and Field Validations



The screenshot shows a web-based GIS application interface. The browser address bar displays 'ingc-mozambique.ona.io'. The left sidebar contains a list of data layers under 'Assentamentos + Serviços', including 'Informação Escolar', 'Pontes', 'Aerportos', and 'Unidades de saúde'. The central map displays a topographic map with red-shaded areas representing flood zones. A green box highlights a specific area on the map, and a green circle highlights a point. The right sidebar shows a metadata panel for 'Escola Secundaria Geral de Nante' with details such as 'Nante Sede', 'Maganha da Costa', 'Baixo Licungo Nante', 'Nante Sede', 'Povoado: Nante Sede', 'Telefone: Nao', 'Tipo de Fonte: Nenhuma Fonte', 'Tipo de Energia: Rede Publica', 'Total de Casas de Banho: 1', 'Total de Latrinas: 1', 'Urinóis?: Sim', 'Total Urinóis: 1', 'Campo Polivalente: Nao', 'Ginásio?: Nao', 'Total de Salas: 2', 'Situacao das Salas: Em uso', and 'Nível Ensino: ESG1'. Below the map, there are several tabs for 'UNOSAT_A3_Natur...pdf' and 'UNOSAT_Prelimina...pdf'. The Windows taskbar at the bottom shows the system tray with the date '3/25/2022' and time '1:15 PM'.



TC "GOMBE" in ZAMBEZIA: Spatial Data analysis and Field Validations



WHERE WE ARE...



So far, we're using the combination of all these tools to support and provide analysis for Informed Decisions

From assessments...

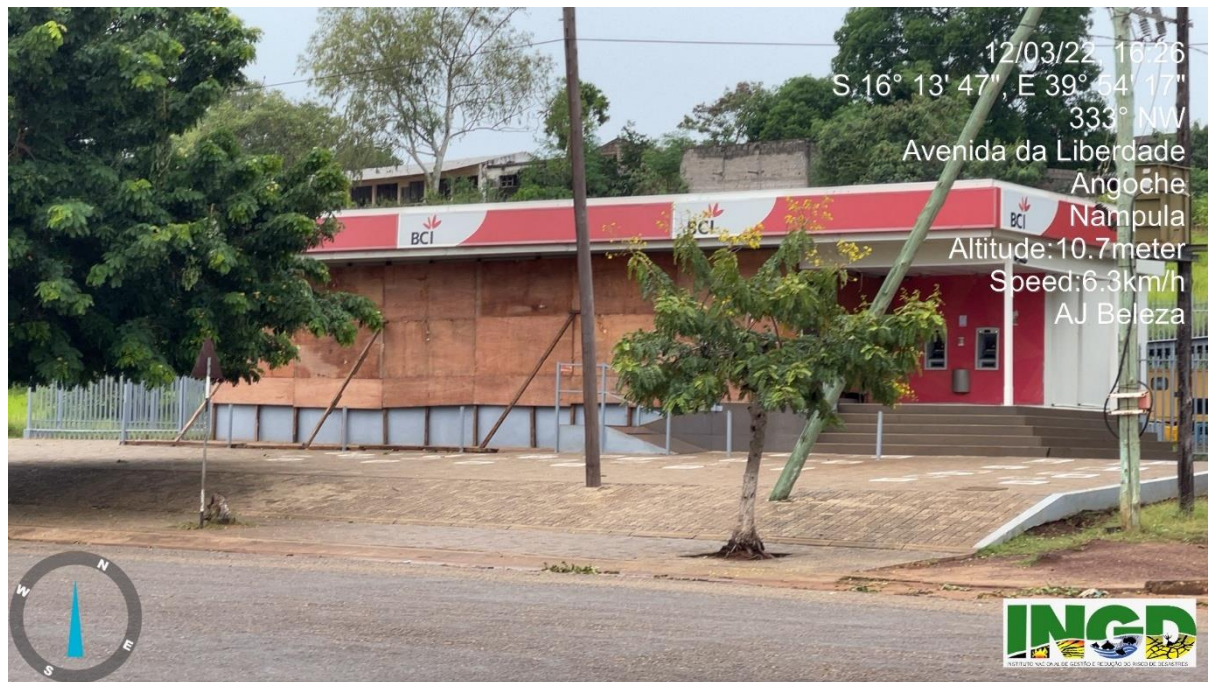


To Interventions: 36-72h after the impacts



Example of Good practices

Casa de material precario protegida contra as chuvas fortes:
Distrito de Angoche, foto tirada no dia 12 de Março 2022



Banco comercial protegido contra os ventos fortes: Distrito de
Angoche, foto tirada no dia 12 de Março 2022



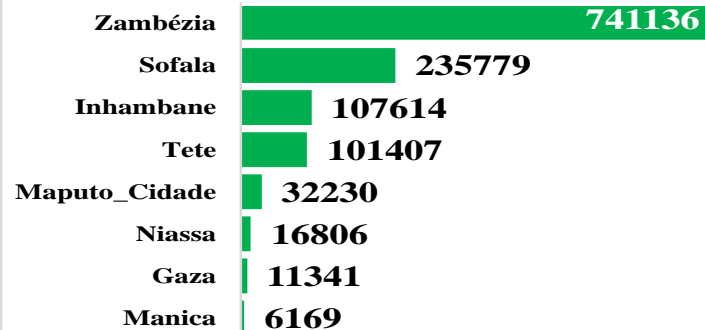
Casa de material convencional protegida contra os ventos fortes:
Distrito da Ilha de Mocambique, foto tirada no dia 12 de Março 2022

A frente fria que afectou a região Centro no dia 22 de Fevereiro, a Tempestade Tropical Moderada Freddy que entrou em Mocimboa do Oswaldo, no dia 24 de Fevereiro, pela parte Sul do distrito de Vilankulo com ventos variando de 50 a 90 Km/h, chuvas associadas e o Ciclone Tropical FREDDY que entrou para a costa Moçambicana no dia 11 de Março pela província da Zambézia no Posto Administrativo de Macuze, distrito Namacurra com ventos de 148km/h e rajadas até 200km/h com chuvas intensas, causou os seguintes impactos nas três regiões do país:

População afectada



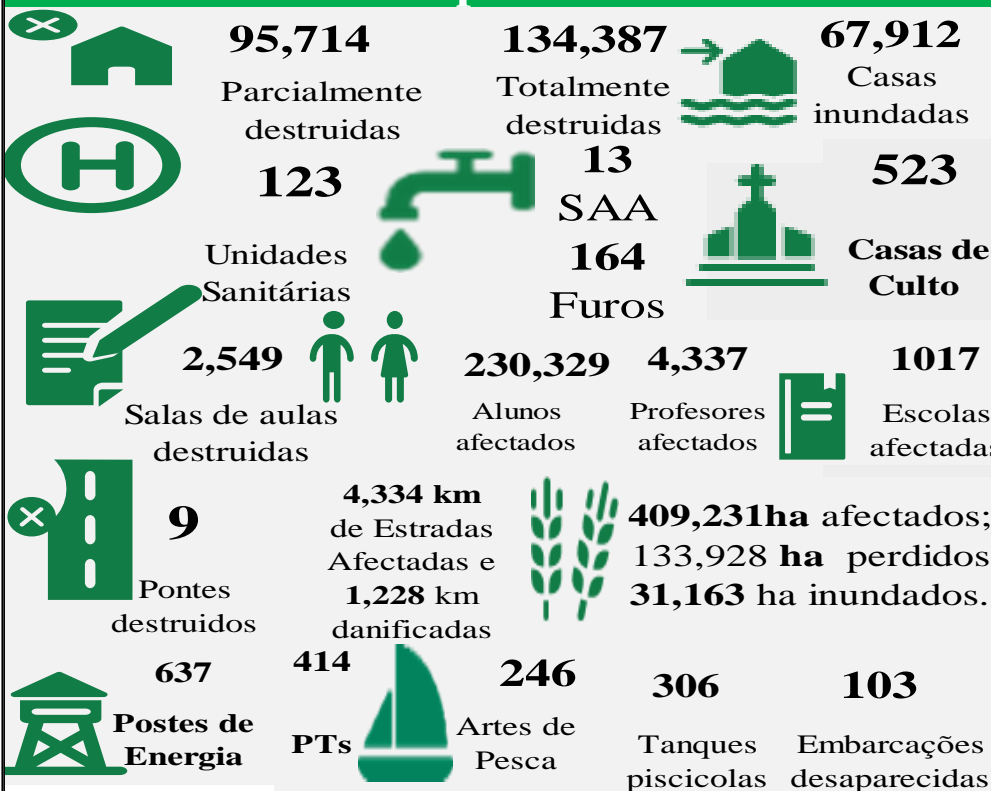
Afectados por provincia



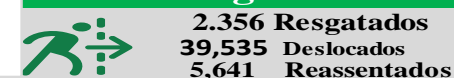
Centros de Acomodacao (CA)



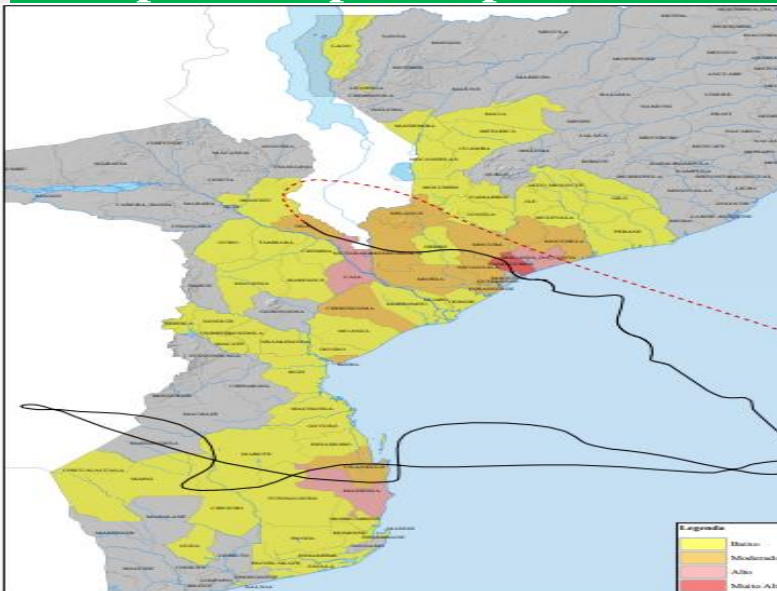
Principais danos



Resgatados/Deslocados



Mapa de Impactos por distritos



Óbitos por provincias



Meios usados



6. Main challenges



- **Strengthen and disseminate**, at all levels, the use of the integrated platform for data and information management already established in CENOE;
- **Strengthen the National Unit for Civil Protection (UNAPROC)** with human and technological resources and knowledge to intervene in the event of multi-hazard disasters;
- Mobilise more **resources for the Disaster Management Fund (FGC)** and capitalise it to create a basis for financing sovereign disaster insurance;
- **Implement in full the Guidelines** on Natural Hazard Resilience, Environmental and Social Safeguards for School Buildings approved by the Ministerial Diploma No 122/2021 of 26 October;
- **Translate the scientific language of Seasonal Climate Forecasts** into a language easily understood by the communities;
- Local communities' **resistance to leave areas at risk of disaster**;
- Conduct detailed **Post Disaster Needs Assessment** evaluations;
- Prevention, Mitigation, Preparedness and Response to a **Disaster in armed conflict contexts**.



THANK YOU!