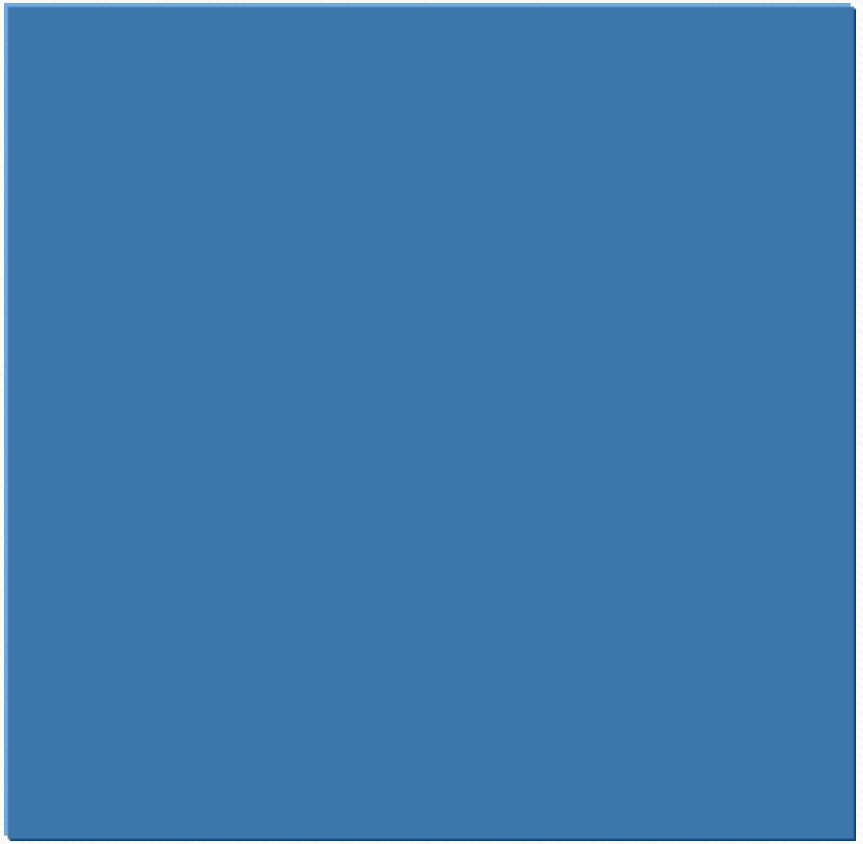
Overview of Early Warning Systems and the Role of NMHS

Republic of Mozambique

Second Expert's Symposium on Multi-Hazard Early Warning Systems with focus on the Role of National Meteorological and Hydrological Services 5 -7 May 2009, Toulouse France

1. Background of the Establishment of EWS in Mozambique

- Location: Southeastern part of the Africa
  - Between the parallels 10.27’ and 26.52’ southern latitude, 30.12’ and 40.51’ eastern longitude
  - Area of 799.380 square kilometres
  - Population: 20 millions



1.1 Major hazards

- Droughts, Floods, tropical cyclones, epidemics, pests, bush fires, and soil erosion.

- Frequency
  - Droughts (3 – 4 years)
  - Floods (1 – 2 years)
  - Tropical Cyclones (1- 3 per year)
  - Epidemics (every years)
  - Pests
  - Bush Fire (every years)

1.2 Chronology of Disaster Management Policies

- 1980 – Establishment of the National Council of Emergency (CNE) and the Department of Prevention and Combat to Naturals Calamities (DPCCN) .

Objective - to coordinate the procurement and distribution of food in collaboration with humanitarian agencies.

- 1999 – Adoption of National Policy for Disaster Management. This provides the strategies and guidelines of what needs to be addressed to mitigate the impacts of disasters.

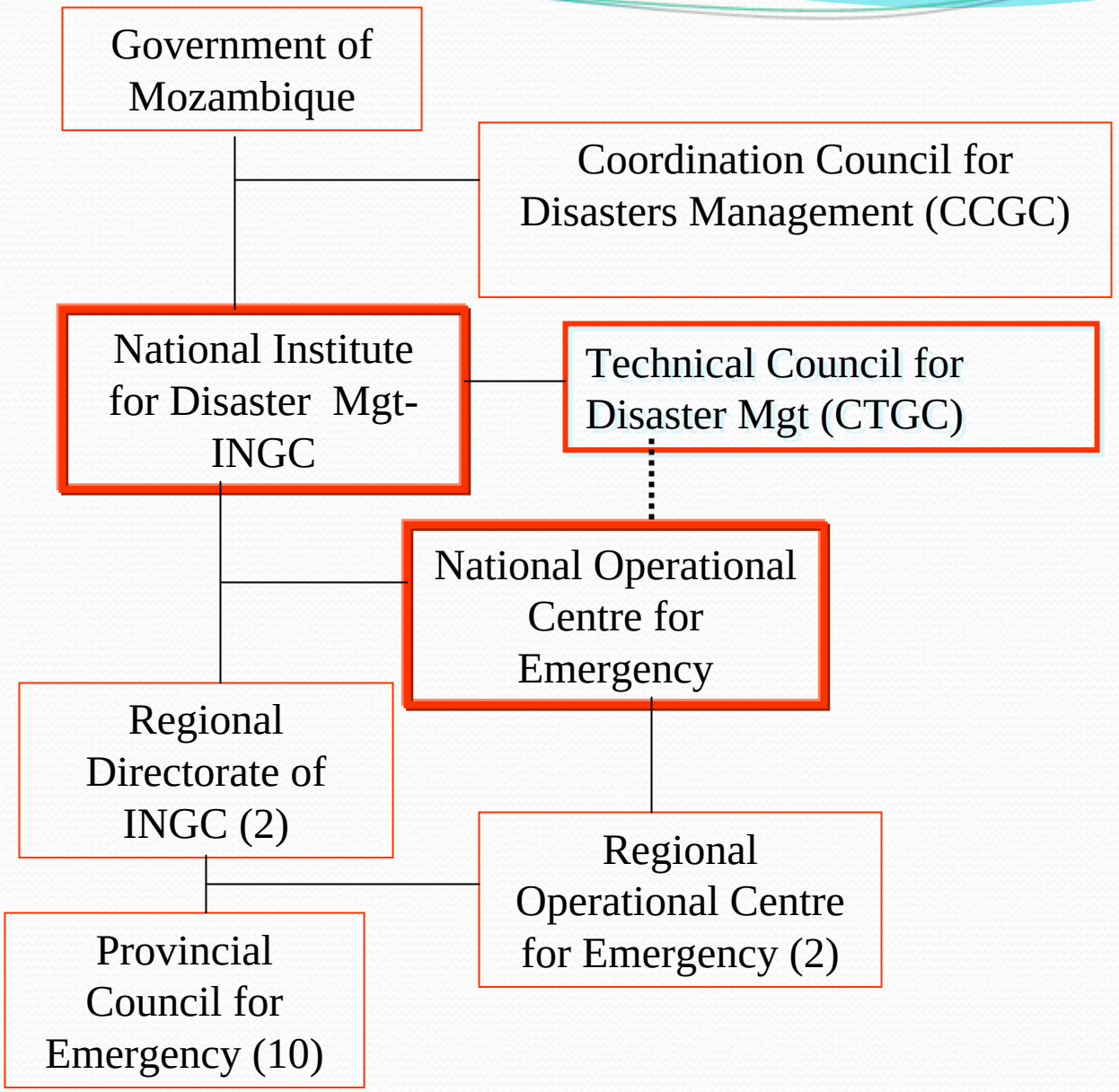
- DPCCN to National Institute of Disaster Management (INGC) under resolution 18/99.

- 1999 - The Government adopted the implementation of the Contingency Plan

- March 2006 The Government issued a master plan for the prevention and mitigation of natural disasters which defines the strategic outline and an action program for a period of 10 years.

- In this context the government has established the National Operational Centre for Emergency (CENOE).

2. Governance and Institutional Arrangements



3. Utilization of risk information in emergency planning and warnings

- Contingency Plan

Based on the Rainfall Seasonal Forecast

- Impact scenarios
- Number of people to be affected in different events, action to be taken and budget.

Actions taken before emergencies planning and preparation

Before rainfall season

- Elaboration and dissemination of Seasonal Rainfall Outlook
- Elaboration and dissemination of Contingency plan
- Training of local committees for risk management
- Simulation Exercises (drills)
- Pre positioning of material and equipment

During emergency

- Activation of Duty Teams in CENOE and other Operational Centres for emergency at provincial / district levels
- Rescue operations
- Elaboration of intervention plans
- Humanitarian assistance
- Monitoring and early warning

4.Hazard monitoring, forecasting and mandates for warning development

- INAM - Warnings related to heavy rains, tropical cyclones, strong winds, and heat waves. It also provides daily rainfall data to the Water Authorities and INGC
- DNA -Water Authorities are responsible for flood forecasting, monitoring and warnings.
- Ministry of Agriculture is responsible for drought related disaster

5. Development of understandable authoritative, recognizable and timely warnings

- The warnings related to tropical cyclones, heavy rains, strong winds, etc are issued by NMHS and sent to CENOE three days in advance and to the media;

- The disaster risk management agencies and other partners meet at INGC and discuss de mechanisms to follow up.

6. Warning dissemination mechanisms

- The warnings are prepared by the NMHS and INGC disseminated by media (Television, Radio, News Papers, internet (websites);
- The warnings also are disseminate at local level by the local committee for risk management

7. Emergency preparedness and response activities

- Activation of CENOE Maputo and the respective regional centres(Caia, Vilanculos and Nacala)
- Allocation of funds for operationalisation of the master plan
- Intervention of the partner of cooperation in different actions
- Accommodation centres management
- Information management (CTGC and CCGC meetings)

8. Improvement of overall operational framework of EWS

Tropical Cyclone Warning

Atlas for Limpopo Basin

8. Improvement of overall operational framework of EWS

- Establishment of new flood forecasting system
- Establishment of local communities disaster risk management
- Train community members to rescue according to the type of disaster
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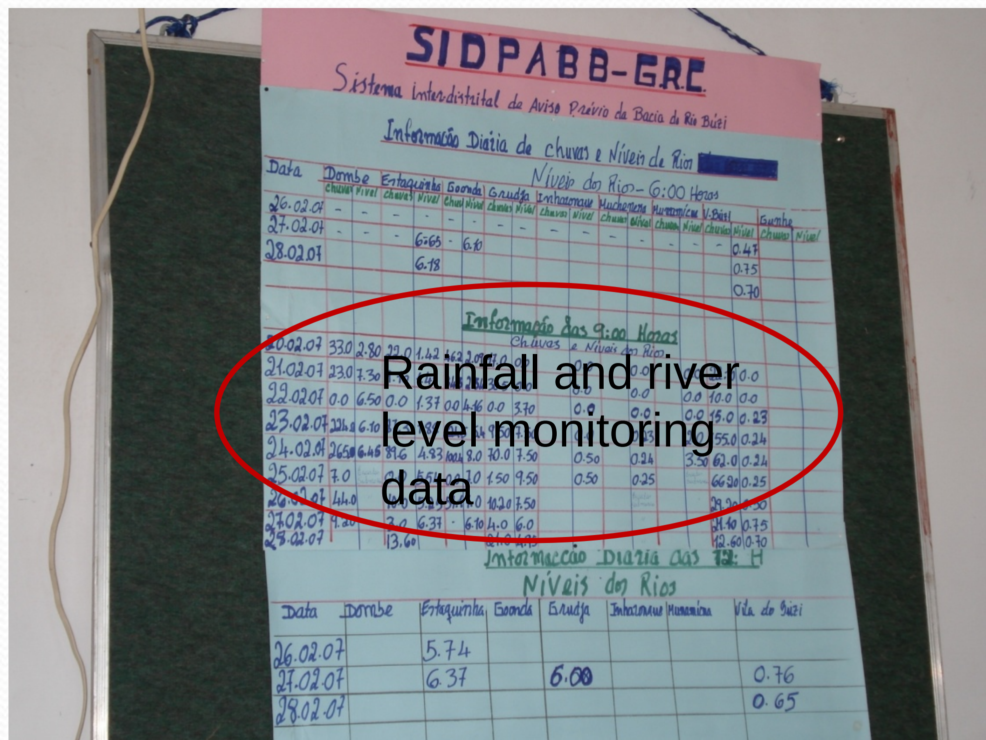
Warning dissemination


Warning dissemination by local community in local language


Impact evaluation


SIDPABB-GRC
Sistema Interdistrital de Aviso Prévio da Bacia do Rio Búzi
Informação Diária de chuvas e Níveis de Rios
Níveis dos Rios – 6:00 Horas
Informação das 9:00 Horas
Rainfall and river level monitoring data
Níveis dos Rios

9. Examples of events where the EWS has led to improvements in preparedness and prevention

Floods of 2000

- Extreme weather event – magnitude not forecasted
- Floods not experienced before;
- Inadequate flood forecasting system
- The refusal of people to abandon their homes and property for never having experienced a similar situation

Floods of 2007/2008

- Efficient early warning system – forecasting and monitoring of the event and multi-sectorial coordination in preparedness , mitigation, and rescue actions
- local communities in the risk management and dissemination of risk information;
- Establishment of accommodation centres;
- distribution of land for construction of houses in safe areas.

10. Role of the NMHS in the EWS

- The NMHS are permanent members of Technical Council for Disaster Management and has appointed two focal points to work jointly at CENOE. CENOE works 24 hours per day. The role of NMHS is to provide data and information related to the evolution of the rainfall seasonal and river basins, issue early warnings and advise CENOE about the appropriate actions to be taken meanly before and during the occurrence of the disaster from hydrometeorological origin

11.Overall lessons learnt and future steps for improving the system

- descentralization of the actions and funds;
- leadership of government at all levels from the Coordinating Council of Disaster Management until district or local authorities;
- greater involvement and coordination of international cooperation partners and civil society in general;
  increasingly on the simulation done before ocurrence of disasters.
- Involvement of communities in the identification of risks and their management
- The importance of political commitment in implementation of actions to reduce risks of disasters
- The importance of contingency plans and simulation exercises that can detect areas that need to be improved before the events
- INAM's involvement in the mechanisms of management of disasters. Also regional coordination for the case of floods
- All the assessments made after the disaster that dwarfs to draw lessons for improving the system

Thank you