

Zambezi River Basin Flood Forecasting And Early warning



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Department of Civil Protection

Civil Protection Act [Chapter 10:06]

- Disaster management activities are provided for in the Civil Protection Act,
- Nucleus for coordination of all disaster management activities in the country and has established structures in the form of National, Provincial , District and community Civil Protection Committees.
- Committees are made up of key government ministries that mostly deal with emergencies and disasters with NGOs and the UN system representation.
- Civil Protection Act is undergoing revision and is soon to be renamed *Emergency Preparedness and Disaster Management Act* in line with international best practise

Muzarabani



Causes of Floods in the Zambezi Basin

- Backwater effect e.g. Muzarabani due to Kariba and Cabora Bassa dam operations,
- Combination of localised rainfall intensity in low lying areas of Muzarabani, Kanyemba, Mana Pools,
- Blocked river flow channels- siltation in rivers and debris in drainage systems
- Cyclones e.g. Bonita (1996), Lissette (1997), Eline (2000), Japhet (2003)



Stream bank cultivation along Msengezi River



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- Until the devastating floods due to Cyclone Eline in 2000, the country's major natural hazard was mainly drought.
- The Civil Protection Organisation in the country was generally unfamiliar with dealing with serious natural catastrophic events affecting wide geographical areas
- Experiences drawn from Cyclone Eline pointed to the need to improve early warning systems and preparedness for large scale hydro-meteorological hazards,

Cyclone Eline disaster



Gullies caused by Cyclone Eline induced Floods



Cont.

- An operational manual for the management of floods was then developed,
- The manual is derived from the existing National Civil Protection plan and lessons learnt from Cyclone Eline.
- It covers early warning and preparedness issues and is based on the assumption that each sector will actively enforce its regulatory mechanism and maintain high standards to minimize risk and reduce vulnerability in the different spheres of their operations.

Purpose of the Manual

Overall Aim

To ensure effective and efficient management of flooding emergencies.

Objectives

- To outline the management structure for flooding emergencies.
- To delineate roles and functions in a flooding emergency.
- To serve as a point of reference in reviewing management of floods in the country.

Flood Early warning system

Major players	Role
MSD	Responsible for climate and weather forecasts, and advance warnings on weather conditions likely to endanger lives, livelihoods and property
ZINWA	Responsible for the hydrological forecasts, monitoring and issuance of warnings.
DCP	<ul style="list-style-type: none"> ▪ Coordinates early warning systems in collaboration with Met Services, ZINWA/Department of Water , ZRP and Ministry of Information. ▪ Co-ordination and liaison ▪ Secretariat services ▪ Information dissemination (print and electronic media, local government structures, field visits) ▪ International collaboration
Zambezi River Authority	<ul style="list-style-type: none"> • Reservoir Operations, • Advise the Civil Protection Department
Provincial and District Administrators	<ul style="list-style-type: none"> • Effect the provincial and district early warning system by activating the Civil Protection Committees. • Has the responsibility to alert the vulnerable communities through the existing structures at local level (councilors, the clinic, the police, the schools and Agritex)
Local Clinic, school, Police, Agritex	<ul style="list-style-type: none"> • Disseminates the warnings to village leaders (councilors, chief, kraal heads) to the school children
Village leaders	<ul style="list-style-type: none"> • Monitoring of Local Early warning systems • Disseminate the Warnings to vulnerable villagers
School Children	<ul style="list-style-type: none"> • Disseminate the Warnings to their homes

Ref: Y/CP/2

Date: 15th February 2011

TO: *All Provincial Administrators*

RE: WEATHER ADVISORY FROM METEOROLOGICAL SERVICE DEPARTMENT

The above matter refers.

The Meteorological Services Department has issued a weather forecast for the period 14th- 20th February 2011.

We are being advised that the dominant feature during the period under review will be the tropical cyclone. The projections by Met Office indicate that the cyclone will move into the Mozambique Channel by Wednesday, 16 February 2011 and continue tracking southwards.

Additional information from the prediction is as follows;

- If the cyclone continues as indicated above, it should pull some moisture southwards into the northern half of Zimbabwe. This should see an increase in thunderstorm activity in all the Mashonaland, Harare, North Midlands and Matebeleland North. Manicaland is likely to experience windy conditions with light rain or drizzle.
- Masvingo and Matebeleland South on the other hand, will be less cloudy with only light showers at times.
- This situation is probably going to last into the weekend, thereafter chances are that the cyclone will move into higher latitudes and weaken at the same time.

It is against this background that Civil Protection Committees at all levels are being advised to remain vigilant and make efforts to alert vulnerable communities about possible hazards associated with tropical cyclones.

The Meteorological Service Department will continue to monitor the cyclone and issue appropriate updates whenever necessary.

S. Ndlovu
Acting Director Civil Protection

Activities

- Disaster Risk Reduction training including local early warning systems at community level and schools (EPR plans)
- Pre-season public awareness campaigns are conducted in conjunction with Met office and ZINWA and other stakeholders,
- Lobbying for improved network coverage with the Ministry of Information, Postal and Telecommunication Regulatory Authority of Zimbabwe and mobile network providers,
- Collaboration with riparian states (Mozambique and Zambia) on early warning systems

Pre-season public awareness campaigns



Challenges

- Poor communication networks with the vulnerable communities,
- Some community members do not undertake appropriate reaction to warnings,
- The country still require proper inundation maps,
- Poor farming methods eg stream bank cultivation, over stocking of livestock



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- Socio-cultural and religious beliefs
- Resource constraints (financial, equipment, skilled personnel)
- No formal agreements on exchange of flood related information among riparian states,
- Lack of appropriate strategy for flood plain management.

Thank you

