

ANALYSIS OF TROPICAL CYCLONE IDAI: GAPS & NEEDS

Meteorological Services Department Of Zimbabwe

Ministry of Lands, Agriculture, Water, Climate and

Rural Resettlement

23 OCTOBER 2019

OUTLINE OF PRESENTATION

- **EXTREME WEATHER WARNINGS**
 - **GAPS & NEEDS**
- (TROPICAL CYCLONE IDAI)**



1. WATCH

2. ALERT

3. WARNING

WATCH: TC IDAI – TUESDAY, 12 MARCH 2010

- THE POSITION OF THE CYCLONE (NORTHERN SECTOR OF THE MOZAMBIQUE CHANNEL): BY VIRTUE OF THIS POSITION IT WAS DRYING OUT THE COUNTRY
- TRAJECTORY OF THE CYCLONE (MOVING SOUTH-EASTWARD AT 5 KM/H): EXPECTED TO MOISTEN THE COUNTRY (EASTERN HIGHLANDS) BY THURSDAY, 14 MARCH 2019


**Ministry of Lands, Agriculture,
Water, Climate and Rural Resettlement**
Meteorological Services Department


Telephone: +263 (04) 778 209 Fax: +263 (04) 778 161
 Website: www.weather.co.zw

P.O Box BE 150, Belvedere, Harare, Zimbabwe
All correspondences should be addressed to the Director

Minimizing Risks through Science

DATE: 12 MARCH 2019



**SUBJECT MATTER: MONITORING OF TROPICAL CYCLONE IDAI
(CURRENTLY IN THE NORTHERN SECTOR OF THE MOZAMBIQUE CHANNEL)**

A tropical cyclone named IDAI (*name supplied by Zimbabwe*) is currently in the northern sector of the Mozambique Channel (near 18° south and 42° east) **today, Tuesday 12 March 2019**. In this quasi-stationary position it is drying out the bulk of Zimbabwe while at the same time inducing a steady cool breeze over the eastern and south-eastern parts of the country (namely Manicaland, parts of Masvingo Province into Mashonaland East).

Presently Idai (currently **WATCH GREEN**- category, see table below) is moving south-westwards at a speed of 5 km/h; if this present speed and trajectory is maintained, it is expected to start moistening the country's atmosphere beginning with the **Eastern Highlands** on **Thursday evening, 14 March**. However due to the nature of such systems this path and speed can change drastically. The Meteorological Services Department will continue to monitor intensity and trajectory of Tropical Cyclone Idai and advise the public accordingly.

Issued by Meteorological Services Department

WATCH GREEN	ALERT-ORANGE	WARNING -RED
WIND GUSTS POSSIBLE	 FLOODING IS POSSIBLE	 SERIOUS FLOODING EXPECTED IN LOW LYING AREAS
RESPONSE MONITOR THE WEATHER CONDITION	RESPONSE ALERT FOR POSSIBLE EVACUATION	RESPONSE EVACUATE



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ALERT: TC IDAI – THURSDAY, 14 MARCH 2010

- STARTING EVENING OF **THURSDAY, 14 MARCH 2019**, TC IDAI WAS EXPECTED TO AFFECT THE COUNTRY WITH THE PEAK OF THE EVENT EXPECTED ON **FRIDAY, 15 MARCH 2019** DUE TO ANTICIPATED LANDFALL ON THE SAME DAY
- RAINFALL IN EXCESS OF **50MM** (IN 24HRS) WERE EXPECTED IN PLACES OVER **MANICALAND AND MASVINGO PROVINCES**



DATE: 14 MARCH 2019



SUBJECT MATTER: ANTICIPATED HEAVY RAINS AND STRONG WINDS DUE TO TROPICAL CYCLONE IDAI (CURRENTLY IN THE CENTRAL MOZAMBIQUE CHANNEL).

As a follow up to the **WATCH** that was issued on Tuesday 12 March 2019, tropical cyclone IDAI has taken the south-westward direction as was predicted earlier. By this morning Thursday 14 March 2019, it was located near 19° south and 37°east. It is expected to continue moving towards the Mozambique boarder and is anticipated to make landfall (**Beira, Sofala Province, Mozambique**) in the early morning hours (0200hr) of tomorrow, Friday 15 March 2019.

Thus, starting this evening, Thursday 14 March 2019, **Masvingo, Manicaland, Mashonaland East and Central provinces** should start experiencing cloudy and windy conditions with isolated thundershowers. Elsewhere, it should be partly cloudy. However, from Friday 15 March 2019 due to increased moisture after the expected landfall of tropical cyclone IDAI; it should be cloudy across the country with intermitent moderate rainfall over **Masvingo, Manicaland, Mashonaland East and Mashonaland Central**. Rainfall of 50mm in 24hours are expected in some places (localised heavy falls) over these areas accompanied by strong winds. The peak of the rainfalls should be the Friday 15th of March 2019.

Tropical cyclone IDAI, after landfall it is expected to take a north-westerly trajectory moving further inland reaching Zimbabwe by the 17th of March 2019. If the projected movement of the cyclone is maintained, this should continue to bring moisture over most parts of Zimbabwe with significant rainfall (at least 30mm in 24hours) over **Masvingo, Manicaland, Mashonaland East and Mashonaland Central**.

The Meteorological Services Department will continue to monitor intensity and trajectory of Tropical Cyclone Idai and advise the public accordingly.

Issued by Meteorological Services Department

WARNING: TC IDAI – THURSDAY, 14 MARCH 2010

- RAINFALL IN EXCESS OF 50MM (IN 24HRS) WERE EXPECTED IN PLACES OVER MANICALAND AND MASVINGO PROVINCES, WITH EVEN HEAVIER FALLS FORECAST TO AFFECT CHIPINGE AND CHIMANIMANI
- **IMPLICATIONS:** HEAVY DOWNPOURS, DAMAGING WINDS, LIGHTNING, LANDSLIDES AND FLASH FLOODING



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SUBJECT MATTER: RISK OF FLASH AND RIVER FLOODING DUE TO CONTINUED RAINFALL AFTER CYLONE IDAI MAKES LANDFALL TODAY, THURSDAY EVENING 14 TO SUNDAY 17 MARCH 2019

In general, rains are expected over the eastern half of the country from Wednesday 13 until Saturday 16 February 2019, with heavy falls in some places. Of note however, on **Friday 15 and Saturday 16 March, parts of Manicaland, Matabeleland South, Masvingo Provinces, as well as southern areas of Midlands Province** are forecast to receive heavier rains in excess of 50mm in 24 hours, with even heavier falls over in districts such as **Chipinge, Chimanimani, Bikita, Mutare Rural, Buhera** into **Chiredzi**.

Thereafter, the rains should steadily ease off giving way to bright and showery conditions in most areas, and localized heavier falls in places.

Implications and Recommendations

Indications are that these rains may result in **heavy downpours, damaging winds, lightning, hail, landslides, flash flooding**. Uprooting of trees and damage to infrastructure cannot be ruled out with this type of rainfall intensity.

Some of the precautions to be taken onboard are:

- **Avoid crossing flooded rivers and swollen streams** where the depth is unknown.
- **Flash flooding** may occur especially in low laying areas and river planes; where possible move from such areas.
- Try to avoid being caught outdoors or on the road during heavy storms, more so at night when flood dangers are more difficult to perceive.

The Department will continue monitoring the conditions and update the public accordingly. The public is also being requested to provide feedback or information on disasters. We are on twitter, [facebook](#) and [whatsapp](#).

ISSUED BY: **The Meteorological Services Department**

NATIONAL DISASTER MANAGEMENT

GAPS

- SHORTAGE OF OBSERVING AND FORECASTING TOOLS
- LOOSE EARLY WARNING SYSTEM
- POOR COORDINATION BETWEEN AUTHORITIES
- INADEQUATE SKILLSET
- STAFF SHORTAGE

NEEDS

- RADARS, SATELLITE RECEIVERS, DIGITAL THERMOMETERS & BAROMETERS, AWS, AWOS, MESSAGE SWITCHING SYSTEMS, COMPUTERS (LAPTOPS & DESKTOPS)
- NEED FOR AN EFFECTIVE INTEGRATED EWS: ESTABLISHING AN EARLY WARNING UNIT; STANDARD OPERATING PROCEDURES; ESTABLISHING A NATIONAL FRAMEWORK FOR CLIMATE SERVICES
- NEED FOR CRITICAL TECHNICAL COURSES FOR PROFESSIONALS (GIS, MODELLING, COMPUTER PROGRAMMING)

NATIONAL DISASTER MANAGEMENT (CONT.)

GAPS

- LOW LEVEL OF SCIENTIFIC RESEARCH
- COURSE RESOLUTION IN STATION NETWORK
- LOW NUMBER OF UPPER AIR STATIONS
- NO DATA ASSIMILATION IN THE LOCAL MODELS, UNDER ESTIMATION OF RAINFALL AMOUNTS
- POOR QUALITY OF OBSERVATION DATA
- REPORTING AND COMMUNICATION OF WEATHER PRODUCTS
- POOR FUNDING FOR EXTREME WEATHER EVENTS

NEEDS

- ESTABLISHMENT OF RESEARCH GRANTS
- RECRUITING ADDITIONAL TECHNICAL STAFF, IMPROVE REMUNERATION TO MATCH REGIONAL SCALE AND STANDARDS
- INCREASE NUMBER OF BOTH MANNED AND AUTOMATIC WEATHER STATIONS
- NEED FOR A SUPERCOMPUTER & CAPACITATE TECHNICAL STAFF IN DATA ASSIMILATION SKILLS
- NEED FOR SOFT SKILLS IN TECHNICAL STAFF
- DEDICATED FUND FOR EXTREME WEATHER EVENTS

NATIONAL DISASTER MANAGEMENT (CONT.)

GAPS

- LACK OF COMPREHENSIVE RISK ASSESSMENT
- NO LOCALISED RISK MAPS E.G. FLOOD MAPS
- COMMUNITY BASED DRM
- LACK HYDROLOGICAL GAUGING SYSTEM ON MAJOR RIVERS E.G. NYAHODE RIVER
- NATIONAL & SUB-NATIONAL EMERGENCY OPERATIONS CENTRE WITH AN INTEGRATED MULTI-HAZARD EARLY WARNING SYSTEM
- REMOTE AREAS WITHOUT RADIO, TV AND MOBILE NETWORK COVERAGE

NEEDS

- UPDATE DISASTER RISK PROFILE
- FUNDING FOR CAPACITY BUILDING
- FUNDING FOR COMMUNITY BASED DRM PROGRAMS
- NEED FOR FUNDING TO PROCURE GAUGING SYSTEM
- CAPACITY DEVELOPMENT AND FUNDING TO PROCURE EARTH OBSERVATION SATELLITE TECHNOLOGY

NATIONAL DISASTER MANAGEMENT (CONT.)

GAPS

- LIMITATIONS IN NATIONAL AND SUB-NATIONAL EMERGENCY COMMUNICATION SYSTEMS
- EQUIPMENT FOR SEARCH AND RESCUE OPERATIONS E.G. HELICOPTERS, OFF ROAD VEHICLES, AMBULANCES, SPECIALISED SUB-AQUA EQUIPMENT
- LACK OF RESOURCES SUPPORTED CONTINGENCY PLANS

NEEDS

- NEED FOR FUNDING IN USING INTERNATIONALLY RECOGNISED NUMBERS E.G. 911 ON LANDLINE AND 112 ON MOBILE PHONES
- NEED FOR FUNDING TO PROCURE SPECIALISED EQUIPMENT
- PREPOSITIONING ADEQUATE RELIEF STOCK

NATIONAL DISASTER MANAGEMENT (CONT.)

GAPS

- LACK OF COMMUNICATION EQUIPMENT E.G. COMMUNITY RADIOS
- LACK OF CLIMATE RESILIENT INFRASTRUCTURE
- LACK OF ROBUST INFORMATION MANAGEMENT SYSTEM
- LEGISLATION AND POLICY DEVELOPMENT

NEEDS

- NEED FOR EXTENSIVE DISTRIBUTION OF COMMUNITY RADIOS
- BUILDING BY-LAWS ENSURE CLIMATE PROOF DESIGNS
- INSTALLATION OF INFORMATION MANAGEMENT SOFTWARE AND SUBSEQUENT TRAINING
- ALIGNING DRM BILL & POLICY WITH EXISTING GLOBAL DISASTER AND DEVELOPMENT FRAMEWORKS E.G. SENDAI FRAMEWORK

NATIONAL DISASTER MANAGEMENT (CONT.)

GAPS

- LACK OF SAFE HAVENS IN CASE OF INTERNAL DISPLACEMENTS
- LACK OF A SPECIALISED CENTRE FOR EXTREME WEATHER EVENTS E.G. TROPICAL CYCLONES

NEEDS

- EVACUATION CENTRES I.E. WEATHER/CYCLONE PROOF EVACUATION CENTRES
- TROPICAL CYCLONE CENTRE (MUTARE, MANICALAND PROVINCE):
 1. FORECASTING AND TRACKING CYCLONES
 2. WITH SATELLITE RECEIVERS



Thank you

