

## IOC HYDROMET PROJECT & CREWS initiative Coordination & Climate rationale

As per GCF team request, we are pleased to share the following additional information's on:

- (i) the Hydromet Project and the SWIO-CREWS initiative and
- (ii) the key information's and add to be considered from the recent article "Emergence of an equatorial mode of climate variability in the Indian Ocean" published in "Sciences Advances"

### **1- CREWS initiative : “Supporting regional cooperation to strengthen seamless operational forecasting and multi-hazard early warning systems at national level in the South-West Indian Ocean”**

Recently, CREWS initiative have approved an envelope of about USD 4 million to support the implementation of SWIO multi-hazard early warning systems. WMO, WB and UNDRR will implement the project. WMO will be the lead partner and will reporting to CREWS Secretariat. Comoros, Mauritius, Madagascar, Seychelles and Mozambique are the benefitting countries.

In term of calendar, the SWIO-EWS project and the IOC Regional Hydromet project implementation timeline are fitting well with a coordinate inception phase planned to take place from the very early January 2021. On that chapter, AFD and WMO agreed to set a memorandum of understanding describing the task undertaken by WMO, WB, and UNDRR, their calendar, their achievements, and the way they will be incorporated in the IOC -HYDROMET project activities, with a major objectives of avoiding duplications of efforts and give inconsistent guidance and recommendations to national beneficiaries.

The SWIO – EWS program structured around seven major outputs, and sub-activities related to IOC countries or to Mozambique, specifically. The expected outputs and their articulation with IOC Hydromet project are the following:

1. Output0: Institutional and human capacities in regional and intergovernmental organizations to provide regional climate and weather services to LDCs and SIDS increased ( Regional) :
  - R.1 - South West Indian Ocean Climate Outlook Forum (SWIOCOF),
  - R.5 - Tropical cyclone forecasting products
  - R.6 - Flood forecasting tools (urban, coastal, riverine)
  - R.3 - Regional instruments center (RIC)
  - R.7 - Harmonization of indicators for measuring effectiveness for EWS

This output greatly complements the activities proposed under the Hydromet project, as follows:

- Activity 3.3.4 - Support SWIOCOFs to ensure the active participation of climate services users
- Activity 3.1.2 - Set up protocols (standard operating procedures) to strengthen MH-IBF-EWS (including in relation to tropical cyclone forecasting) dissemination for and uptake by key sectors and among the general public
- Activity 2.3.8 - Build the capacity for hydrological modelling for flood forecasting (i.e. flood propagation model)
- Activity 2.2.1 - Establish a maintenance and calibration laboratory (WMO Regional Instrument Centre)
- Activity 3.2.2 - Develop risk matrices for each hazard with agreed risk levels and color-codes, and description of related impacts and response/actions; test and validate them in selected sites in the four countries (first 3 years of the project); expand and roll out nationwide

2. Output 1: NMHSs' service delivery improved, including the development of long-term service delivery strategies and development plans ( National)

- Provision of advisory services and Strengthening the governance of NMHS

- Develop guidance (ToRs) for specific agro-meteorological early warning services building upon the drought monitoring and forecasting capacities developed under the ACP-EU climate services project
- Develop guidance (ToRs) with regards to training of NMHS staff, including joint training with staff of DRM, civil protection and food security institutions

This output greatly complements the activities proposed under the Hydromet project, as follows:

- Activity 3.1.1 - Set up/update protocols (standard operating procedures) to produce and deliver improved daily weather bulletins, multi-hazard impact-based forecasts, seasonal forecasts and agrometeorological advisories at national level
- Activity 3.1.2 - Set up protocols (standard operating procedures) to strengthen MH-IBF-EWS dissemination for and uptake by key sectors and among the general public
- Activity 2.3.6 - Carry out downscaling of global and regional seasonal forecasts to national level, and use them to produce agrometeorological products
- Activity 1.3.2 - Train new and retrain existing staff, in accordance with the WMO Standards for Education and Training in Meteorology and Hydrology<sup>1</sup> (Basic Instruction Packages for meteorologists and meteorological technicians; and for hydrologists and hydrological technicians)
- Activity 3.3.1 Train staff members of NMHS and in the RCC-Network on how to package climate-related information in a user-friendly way
- Activity 3.3.2 Train knowledge brokers – including NGOs, red crescent/cross, local leaders and extension officers – and representatives of sectors in the GFCS areas (public and private organizations) on how to interpret and use CP-CS for decision-making

3. Output 2: Risk Information to guide early warning systems and climate and weather service developed and accessible ( National)

- 2.2 - Developing risk information to guide EWS in Comoros, Madagascar, Mauritius, Seychelles by Modeling & alerts: recommendations for priority risk zones for which flood alerts could start being produced

This output greatly complements the activities proposed under the Hydromet project, as follows:

- Activity 2.3.3 - Develop hazard maps
- Activity 2.3.4 - Develop vulnerability maps
- Activity 2.3.5 - Undertake risk analysis incorporating hazard, exposure and vulnerability to identify potential impacts from extreme events
- Activity 3.2.1 - Improve data sharing and coordination with emergency services for on-the-ground interventions at national and local levels

4. Output 3: Information and Communication Technology, including common alerting protocol, strengthened( National)

- Provision and dissemination systems of detailed guidance for common alerting protocol implementation in Develop specific guidance in the four s in Comoros, Madagascar, Mauritius, Seychelles

This output greatly complements the activities proposed under the Hydromet project, as follows:

- Activity 2.1.2 - Modernize/upgrade the information and communication technology systems
- Activity 3.3.3 - Strengthen the User Interface Platform (UIP)

<sup>1</sup> [https://www.wmo.int/pages/prog/dra/etrp/documents/1083\\_Manual\\_on\\_ETS\\_en\\_rev.pdf](https://www.wmo.int/pages/prog/dra/etrp/documents/1083_Manual_on_ETS_en_rev.pdf)

5. **Output 4: Preparedness and response plans with operational procedures that outline early warning dissemination processes developed and accessible( National)**

- Advising Comoros, Madagascar, Mauritius, Seychelles on the development and implementation of integrated early warning systems

This output greatly complements the activities proposed under the Hydromet project, as follows:

- Activity 3.1.1 - Set up/update protocols (standard operating procedures) to produce and deliver improved daily weather bulletins, multi-hazard impact-based forecasts, seasonal forecasts and agrometeorological advisories at national level
- Activity 3.1.2 - Set up protocols (standard operating procedures) to strengthen MH-IBF-EWS dissemination for and uptake by key sectors and among the general public
- Activity 3.2.1 - Improve data sharing and coordination with emergency services for on-the-ground interventions at national and local levels

6. **Output 5: Knowledge products and awareness programmes on early warnings developed( National)**

- Diagnostic and recommendations on multi-hazard early warning operational procedures

This output greatly complements the activities proposed under the Hydromet project, as follows:

- Activity 3.2.2 Develop risk matrices for each hazard with agreed risk levels and color-codes, and description of related impacts and response/actions; test and validate them in selected sites in the four countries (first 3 years of the project); expand and roll out nationwide
- Activity 3.2.3 - Develop a knowledge and decision support system to support the implementation of MH-IBF-EWS at regional, national and local levels (to be part of the UIP – Activity 3.3.3)
- Activity 3.3.2 Train knowledge brokers – including NGOs, red crescent/cross, local leaders and extension officers – and representatives of sectors in the GFCS areas (public and private organisations) on how to interpret and use CP-CS for decision-making

7. **Output 6: Gender-sensitive training, capacity building programmes provided (National)**

- Gender-sensitive programming, implementation and monitoring

This output greatly complements the activities proposed under the Hydromet project. Gender aspects cut across many activities of the Hydromet project, as described in Annex Gender Assessment and Action Plan (GAAP).

**2- Emergence of an equatorial mode of climate variability in the Indian Ocean**

Relevant references and quotes from the article have been integrated in the FP.