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WMO OMM
World Meteorological Organization
Organisation météorologique mondiale
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Всемирная метеорологическая организация
المنظمة العالمية للأرصاد الجوية
世界气象组织

1950-2025
SCIENCE for ACTION

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Our ref.: 06400/2025/S/HWR/SC-HYD-SERCOM 30 May 2025

Annexes: 3

Ref.: 06400/2025-L6 S/HWR

Subject: Support needed for the preparation of WMO Guidelines currently under development by the Standing Committee on Hydrological Services (SC-HYD), Commission for Weather, Climate, Hydrological, Marine and Related Environmental Services and Applications (SERCOM)

Action required:

(1) Identify and share suitable case studies related to the Socioeconomic Benefit Analysis of flood forecasting services

(2) Identify and share suitable case studies related to Impact-Based Forecasting for Floods and Droughts

(3) Nominate a focal point from the Disaster Risk Agency (or the equivalent institution in the country) who would be willing to support the WMO Secretariat's outreach efforts to different users of floods and droughts forecasts, in order to better understand their forecast communication needs for better forecasting services

Dear Sir/Madam,

The Standing Committee on Hydrological Services (SC-HYD) of Commission for Weather, Climate, Hydrological, Marine and Related Environmental Services and Applications (SERCOM) leads the activities of WMO in the services aspects of operational hydrology and water resources management. It supports National Meteorological and Hydrological Services (NMHSs) and National Hydrological Services (NHSs) in enhancing their services. The SC-HYD articulates its workplan in 36 milestones as decided at the third session of SERCOM in March 2024 (Decision 7 (SERCOM-3) – Hydrological Services), including::

- **Milestone 12: Guidelines on socioeconomic benefit analysis of flood forecasting services**
  The purpose of these guidelines is to assist NMHSs and NHSs in assessing the value of flood forecasting and estimating the potentially avoided damages by flood forecasting and early warning systems;

- **Milestone 25: Guidelines on impact-based forecasting (IBF) for hydrology**
  The purpose of these guidelines is to support NMHSs, NHSs, Disaster Risk Reduction entities and their partners in providing IBF for flood and drought early warning services. These guidelines will focus on IBF for hydrology implementation and how to make this operational, taking into consideration that the starting points and priorities are different for each country/service.

- **Milestone 26: Guidelines on enhanced communication between hydrological forecasters**
  The identification of users' needs is a key initial step in the development of the flood and drought forecasting system. Understanding users' requirements helps maximize the benefits of forecasting services and reduces barriers to the effective adoption of forecasts by end users.

To: Permanent Representatives of Members with WMO

cc: Hydrological Advisers

The contributions of WMO Members have been instrumental in the progress made towards the three milestones detailed above. To further advance in their development, WMO Members and partners are now kindly requested to provide the information below. Note that the WMO Secretariat will support Members throughout the preparation process of the requested material.

- Identify and share case studies that showcase the added value of forecast information for decision-making, approaches and methodologies that can be applied in estimating the avoided flood damages (contribution to Milestone 12)

- Identify and share case studies that illustrate impact-based forecasting methods including communication and governance aspects (contribution to Milestone 25)

- Nominate a focal point from the Disaster Risk Agency (or the equivalent institution in your country) who would be willing to support the WMO Secretariat's outreach efforts to different users of floods and droughts forecasts, to better understand their forecast communication needs for better forecasting services (contribution to Milestone 26)

It would be appreciated if you could send the identified case studies and contact information using the forms in the following links: Form Milestone 12 (Annex I); Form Milestone 25 (Annex II); and Form Milestone 26 (Annex III).

The WMO Secretariat will compile the necessary information. Please send the completed forms to Ms Silvana Alcoz (salcoz@wmo.int) and Ms Claire Nakabugo (cnakabugo@wmo.int) with copy to Dr Hwirin Kim (hkim@wmo.int), Chief, Hydrological and Water Resources Section by **13 June 2025.**

I would like to take this opportunity to thank you for your continued support to WMO activities.

Yours faithfully,

Ms Ko Barrett
for the Secretary-General

CASE STUDIES TO SUPPORT THE GUIDELINES ON SOCIOECONOMIC BENEFIT ANALYSIS OF FLOOD FORECASTING SERVICES

MILESTONE 12

Introduction

The purpose of these guidelines is to assist National Meteorological and Hydrological Services (NMHSs) and National Hydrological Services (NHSs) in assessing the value of flood forecasting information and estimating the potential avoided damages brought about by flood forecasting and early warning systems. The guidelines will showcase approaches and methodologies that can be applied in estimating the avoided flood damages and the added value of forecast information in decision-making.

Please provide information on any case study that has been conducted in relation to the socioeconomic benefits of having a flood forecasting and early warning system that could help illustrate the Guidelines under development.

Region/Location/Country:

What approaches were taken in estimating the usefulness of the forecasts, such as the prevented flood damages from flood forecasts and warnings?

☐ Primary data collection through surveys or households or businesses

☐ Focus interviews with small samples of flood specialists or other key stakeholders

☐ Use of flood risk models to assess flood impacts

☐ Benefit transfer approaches to estimate benefits from previous studies to analyse similar situations

Brief Description:

Key results:

Weblinks, reports or contact details for more information:

Photos or images if applicable:

Contact details for communication with the WMO Secretariat:

Name:

Email:

Institution:

Country:

Note: The WMO Secretariat will provide any necessary support to Members in the preparation of the case study.

Please send the completed form to Ms Silvana Alcoz (salcoz@wmo.int) and Ms Claire Nakabugo (cnakabugo@wmo.int) with copy to Dr Hwirin Kim (hkim@wmo.int) by **13 June 2025**.

Ref.: 0640/2025-1.6 S/HWR

CASE STUDIES TO SUPPORT THE GUIDELINES ON IMPACT-BASED FORECASTING FOR HYDROLOGY

FLOODS AND DROUGHTS

MILESTONE 25

Introduction

The purpose of these guidelines is to support NMHSs, NHSs, Disaster Risk Reduction entities and their partners in providing Impact-based Forecasting (IBF) for flood and drought early warning services. These guidelines will focus on IBF-Hydrology implementation and on how to make it operational, while taking into consideration that the starting point and priorities are different for each country/service.

Please provide information on any IBF service that could help illustrate the guidelines under development.

Please see the Table of Contents in the appendix.

Please select the hazard:

☐ Floods

☐ Drought

Audience/sector addressed:

Source of impact data used:

What approach is used to generate IBF?

Have you developed a risk matrix to categorize risk and guide decision-making?

Do you use:

☐ Exposure data

☐ Vulnerability data

☐ Both

Event Description (Describe the situation and context. 100 words)

- What information did your warning include?
- What channels of communication were used?
- Lessons learned and feedback
- Key success
- What would you do differently?
- Did you receive feedback from those who were impacted?

Contact details for communication with the WMO Secretariat:

Name:

Email:

Institution:

Country:

Note: The WMO Secretariat will provide any necessary support to Members in the preparation of the case study.

Please send the completed form to Ms Silvana Alcoz (salcoz@wmo.int) and Ms Claire Nakabugo (cnakabugo@wmo.int) with copy to Dr Hwirin Kim (hkim@wmo.int) by **13 June 2025**.

APPENDIX

GUIDELINES ON IMPACT-BASED FORECASTING FOR HYDROLOGY

FLOODS AND DROUGHTS

TABLE OF CONTENTS

V. Evaluation of the Impact-based Forecasting for the Hydrology Service

V.I Evaluation along the whole chain for effective warning

V.II Feedback and co-development

VI. Governance structures for Impact-based Forecasting

VI.I What is governance and why is it important

VI.II Governance frameworks, models and structures

VI.III Building the capacity

VI.IV Sustainability of the Service

VI.V Insurance and Risk Management

VI.VI Transboundary Risk Management

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GUIDELINES ON ENHANCED COMMUNICATION BETWEEN HYDROLOGICAL FORECASTERS AND USERS

MILESTONE 26

The identification of users' needs is a key initial step in the development of the flood and drought forecasting system. Understanding users' requirements helps maximize the benefits of forecasting services and reduces barriers to the effective adoption of forecasts by end users.

Please provide a **focal point** from the Disaster Risk Agency (or the equivalent institution in your country) who would be willing to support the WMO Secretariat outreach efforts to different users of floods and droughts forecasts, in order to better understand their forecast communication needs and improve forecasting services.

Contact details for communication with the WMO Secretariat:

Name:

Email:

Institution:

Please send the completed form to Ms Silvana Alcoz (salcoz@wmo.int) and Ms Claire Nakabugo (cnakabugo@wmo.int) with copy to Dr Hwirin Kim (hkim@wmo.int) by **13 June 2025**.

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