

Overview of the WMO Flood Forecasting Initiative and its Framework

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Expected outputs of this meeting

- Agreement on the scope of work and approach to be taken by the FFI-AG, within its ToR;
- Improved understanding of the current initiatives and activities undertaken in the framework of the WMO FFI;
- Agreement on specific actions to be taken and an updated Work Plan associated with these actions;
- Agreement on how the work of the FFI-AG should be undertaken including its outreach to Members, relevant Commissions, Technical Support Partners, and Donors;
- Conclusions and recommendations (including target audience), based on the presentations and discussions.

History of the WMO-FFI

- Started from an Expert Meeting in 2003
- Technical Conference on Improved Meteorological and Hydrological Forecasting, Geneva, November 2006
- On request of CHy, development of an Activity Plan in support of the FFI-Strategy and Action Plan, Geneva, November 2009

History of the WMO-FFI

- In 2011, the World Meteorological Congress (Cg) passed Resolution 15 (Cg-16) establishing the WMO Flood Forecasting Initiative - Advisory Group (FFI-AG) with the objective to provide guidance and advice on the hydrological forecasting elements of a number of flood-related initiatives and programmes in progress under WMO programmes, and to provide broad-based support to improve collaboration between the meteorological and hydrological communities for improved flood forecasting related practices.

Problem Statement

- Many meteorological and hydrological services do not have adequate means or the knowledge to provide forecasting services in flood critical situations and to communicate effectively with disaster management authorities

Current Weaknesses of Forecasting Systems (1)

- Meteorological information and forecasting are often not provided in a form usable for hydrological pre-warnings and forecasting;
- Meteorological forecasts are often qualitative and not quantitative;
- Extreme meteorological and hydrological events are not risk qualified (e.g. what does severe rainfall mean for the input to hydrological forecasting or the general public, and what actions should be taken?)
- Advanced methods and techniques including the use of NWP products and ensemble forecasting techniques are not widely used in the meteorological and hydrological communities;
- Fragmented data holdings, non-standardized data archiving, data formats and transmission protocols severely limit timely access to data and information;



Current Weaknesses of Forecasting Systems (2)

- There is a pronounced “communication gap” between meteorological and hydrological services with regard to forecasting concepts, methods, products and services, outreach to end-users and even the technical language used;
- Forecasting is often not objective-driven; (different users of forecasting information require specific forecasting products)
- Warnings directed to disaster management agencies and the general public use technical vocabulary not easily understood by those who should benefit from the warnings; and
- Public generally not aware of what actions should be taken to reduce exposure to risk.



SCOPE OF THE SAP (1)

- The SAP promotes the preparation of national implementation plans, to be adapted in accordance with current national/regional flood forecasting capabilities, specific requirements and priorities.
- The SAP suggests the implementation of demonstration projects at various levels (country-specific, sub-regional and regional projects), to showcase the value of increased cooperation between NMSs and NHSs in flood forecasting .



SCOPE OF THE SAP (2)

- At the regional level, the SAP advocates the establishment of a framework under which partnerships and development assistance could be provided and coordinated amongst services while taking advantage of existing regional and international arrangements.
- The SAP also addresses requirements of well-established flood forecasting and warning systems for their further improvement through the development and use of new technologies.



SAP's 9 ACTION DOMAINS (1)

- I. Strengthening of Observing and Information Systems
- I. Improvement of Meteorological Forecasting Practices and Products
- I. Improvement of Hydrological Forecasting Practices and Products
- I. Strengthening of Institutional Coordination, Cooperation and Integration between NMSs and NHSs
- I. Strengthening of Cooperation and Coordination between Countries on issues related to Flood Forecasting

SAP's 9 ACTION DOMAINS (2)

- VI. Formulation of Technical Documentation and Guidelines related to Flood Forecasting
- VI. Supporting Disaster Management
- VI. Addressing Climate Variability and Change in Consideration of Extreme Events
- VI. Demonstrating the Value of Meteorological and Hydrological Data, Information and Products

Review of the SAP (2015) - Findings

- Only 1/3 of the NHMSs have well established Flood Forecasting and Warning services
- Terminology within the documents is heavy and confusing
- Need to strengthen FFI focus on forecasting
 - activities are highly spread-out rendering it difficult to implement
 - activities associated with short- to-medium term forecasting should be given highest priority



Review of the SAP (2015) - Conclusions

- Prioritize the SAP actions so that the highest priority actions reflect short- to medium-ranged flood forecasting system development. Develop a generic list of requirements/best practices of flood forecasting taking into account high priority actions.
- Prioritize the SAP actions so that the highest priority actions reflect flood forecasting system development (and not data rescue issues, flood design calculations etc.). Take into account these actions in further FFI documentation (e.g. generic list of requirements/best practices of flood forecasting).
- Ensure that all major demonstration projects and components, including but not limited to CIFDP, SWFDP, FFGS, include the requirements for effective and sustainable flood forecasting in their design and implementation (according to the aforementioned generic list of requirements).



Review of the SAP (2015) –Conclusions (2)

- Avoid current terminological complexity in further FFI guidance documentation (e.g. generic list of requirements/best practices).
- Regarding the Action Plan: Develop a new FFI implementation strategy based on Demonstration projects and other FFI components implementation, guidance material development for different audiences (NMHSs, donors, NGOs etc.), development of training programmes, and effective promotion of the aforementioned items so that they are available to the target audience.
- Regarding the aforementioned promotion activities, that the WMO-GWP APFM Integrated Flood Management (IFM) HelpDesk be used to maximum advantage for this purpose.



Flood-related activities relevant to the WMO FFI (1)

- **FFI-AG reviewed, discussed and acted on:**
 - **CHAMP**
 - Aligned with FFI
 - Illustrate importance and utility of coupled modelling to improve forecast capabilities
 - **SWFDP**
 - Importance of it for flood forecasting
 - Better linkages are needed
 - SWFDP projects should consider needs of hydrology from their on-set (e.g., geographic coverage, resolution, digital products (QPF, T), nowcasting...

Flood-related activities relevant to the WMO FFI (2)

- **CIFDP**

- Noted importance of the coupled modelling structure within its design (atmosphere, ocean, hydrology)
- Will help advance the goal of FFI
- Need for strengthening:
 - Its overland and riverine flood forecasting aspects
 - Strengthening the involvement of NHSs within its initiatives

- **FFGS**

- Noted additional projects under implementation
- Importance of new functionalities



FFI-AG Terms of Reference

- Consider and advise on the concept, objectives, expected benefits/costs, strategy, action plan and future development of the WMO FFI;
- Review and assess the status of the WMO FFI and progress towards its objectives, and propose strategies for any necessary remedial action;
- Review and assess the progress of specific WMO FFI projects on request;
- Advise on standards (including, but not limited to, methodologies, techniques, technologies, etc.) for the robust and sustainable implementation of the WMO FFI;



FFI-AG Terms of Reference (continued)

- Review relations with other international programmes to avoid overlap, proposing necessary actions;
- Identify and evaluate constraints on, and potential risks to, the future implementation of the WMO FFI, and propose strategies to minimize those risks;
- Consider and propose plans for effective advocacy of the WMO FFI, and ways and means to assure its future sustainability and appropriate expansion;
- Promote awareness about raising the social and economic benefits and value of flood forecasting systems, including community development approach;
- Review and advise on its Terms of reference and Composition.



Thank you for your attention



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