



World Meteorological Organization

Weather • Climate • Water



Development and Implementation of the Regional Flash Flood Guidance System for South America

Overview and Purposes of the Meeting

Flash Floods vs River Floods

River Floods:

- ❑ are caused by heavy rain (and snow melt) over long periods e.g., days, leading to rising water levels and flooding as the flood wave takes days to move down river.

Flash Floods:

- ❑ A flood of short duration with a relatively high peak discharge usually having less than 6 hours between the occurrence of the rainfall and the peak



Flash Floods in Perspective

- “Recent findings of the WMO country-level survey where of the 139 countries, 105 indicated that flash floods were among the top two most important hazards around the world and require special attention”.
- “On the average, these events kill more people worldwide than any other [weather-related] natural disaster – in an average year, flash floods kill over 5,000 unsuspecting people and cause millions of dollars of property damage”(WMO 2008).



Background of the FFGS project

- The WMO Congress XV in 2007 approved the implementation of a Flash Flood Guidance System (FFGS) project with global coverage:
 - developed by Commission for Hydrology (CHy) jointly with WMO Commission for Basic System (CBS)
 - in collaboration with the US National Weather Service, the US Hydrologic Research Center and USAID/OFDA.



Goal of the FFGS project with global coverage

- Contribute towards reducing the vulnerability of regions around the World to hydrometeorological hazards, **specifically flash floods**, by:
 - strengthening regional capacity to develop timely and accurate flash flood warnings
 - developing and implementing the Flash Flood Guidance System (FFGS).



Main Objectives of Initial Planning Workshop of the South America FFG Project

- Present and discuss the needs for flash flood forecasting in South America, including flash flood forecasting and early warning system, dissemination procedures, and protocols for warning populations at risk, and coordination among the National Meteorological and Hydrological Services and the Disaster Management Agencies;
- Reach an agreement with countries on their intent to participate in the project, including an understanding of their responsibilities, the determination of Regional Centre(s) for the project, and a path forward.



Expected Outcomes of Initial Planning Workshop of the South America FFG Project

- Understanding of local, regional and international cooperation among related institutions and organizations to reduce the adverse effects of flash floods;
- Understanding of flash flood guidance system concept, its implementation and data requirements among participants;
- Achieve a commitment (or not) by all participants to actively engage in the regional and national implementation of the project for the benefit of the region;
- Basic agreement on path forward for project and its implementation.



Rational for the Selection of HRC Flash Flood Guidance Concept

- Based on the best available scientific and technological background on flash floods,
- Proven concept in many regional implementations,
- Robust and stable system,
- Adaptable to various regional and local conditions (environmental, institutional, technical),
- Dedicated capacity building components.



What is Flash Flood Guidance System?

- The Flash Flood Guidance System is designed to produce flash flood early warning products by using hydro-meteorological, geomorphologic, topographic data as well as quantitative precipitation forecasts (QPF) and temperature from numerical weather prediction model(s) making use of an internet-based user interface.



Collaboration with National Disaster Management Agencies

- The roles of the National Disaster Management Agencies (DMA) are very important to mitigate the adverse effects of flash floods;
- Closer collaboration is needed between NMHSs and DMAs to understand needs of the DMAs and how best to disseminate understandable warning messages to them in a timely manner;
- Training workshops with forecasters and DMA staff;
 - Provide training to understand the warning messages,
 - Develop operational procedures for use by DMAs, and
 - Finalize dissemination and communication procedures.



Items to be Addressed in this Workshop

- Role of various organizations including WMO, HRC, NOAA and USAID/OFDA;
- NMHSs capabilities on flash flood/flood forecasting and early warning system and available infrastructures;
- Introduction to FFGS;
- Overview of FFGS products;
- The Zarmulilla River Basin FFG pilot project in pseudo-real-time;
- QPF requirements for a South America FFGS;
- Data and implementation requirements;
- The Severe Weather Forecast Demonstration Project ;
- Responsibilities of NMHSs;
- Role of the Regional Centre(s);
- Commitment for the project and selection of Regional Centre(s);
- Recommendations and decisions.





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Thank you for your attention

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