World Meteorological Organization

Weather • Climate • Water

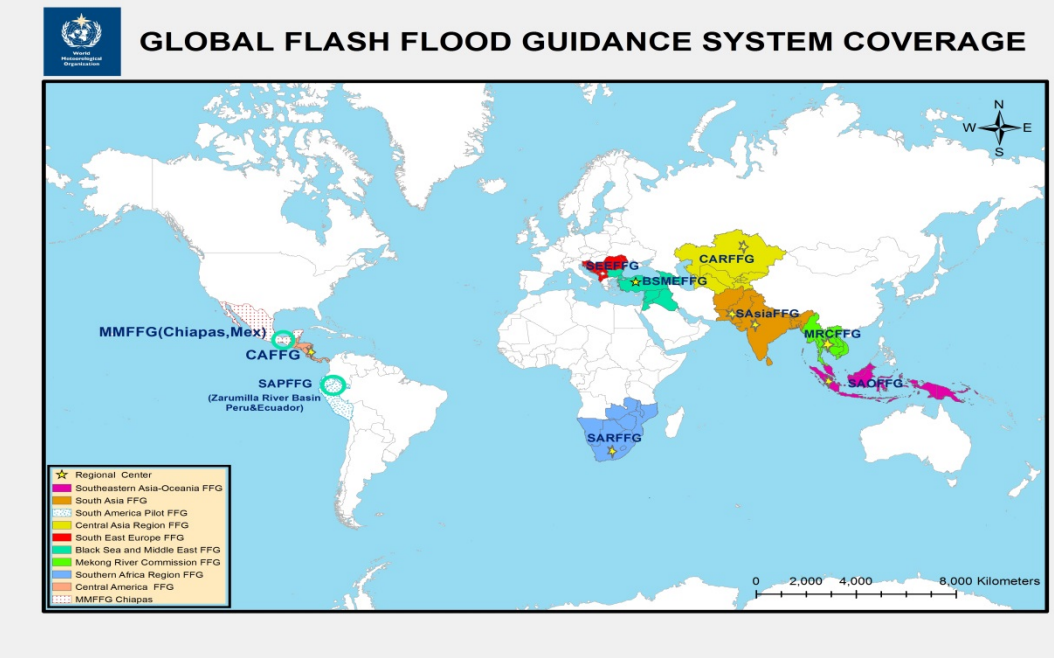
Introduction to the Flash Flood Guidance System and Role of WMO

What is Flash Flood? and Needs

- 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
- Short fuse, hard to predict events

- Lack of flash flood warning capabilities and capacities of NHMSs,
- Lack of local expertise and regional cooperation,
- Ineffectiveness of riverine flood warning systems for flash floods.
- Flash floods causes annually an average of 5,000 deaths and inflict heavy economical losses worldwide,

Flash Flood Guidance System (FFGS)



Flash Flood Guidance System with global coverage enhances early warning capabilities of the NMHSs, currently covers fifty two (52) countries and more than two billion people around the world saving lives and decreasing economic losses.

Objectives

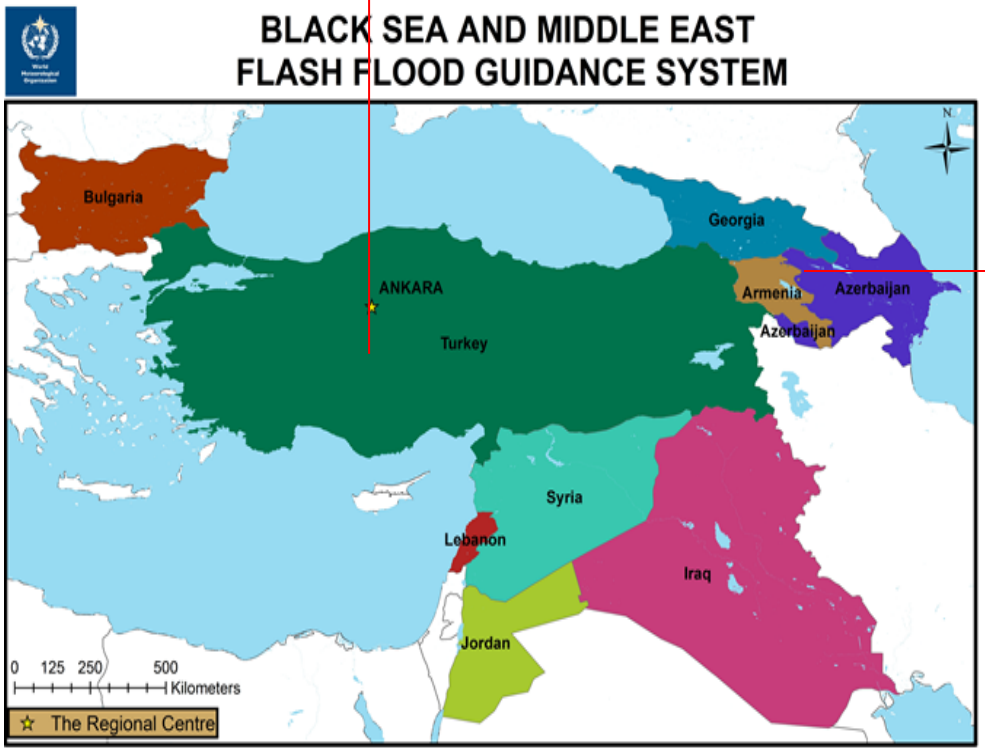
The main objectives of the Flash Flood Guidance System with global coverage are to:

- Enhance NMHSs capacity to issue flash flood warnings and alerts to mitigate the adverse impacts of hydrometeorological hazards, by:
  - Generating flash flood early warning products using state-of-the-art hydrometerological forecasting models;
  - Providing extensive training to the hydrometeorological forecasters;
  - Enhancing collaboration between NMHSs and Emergency Management Agencies;

Regional Components

The Regional Centre:

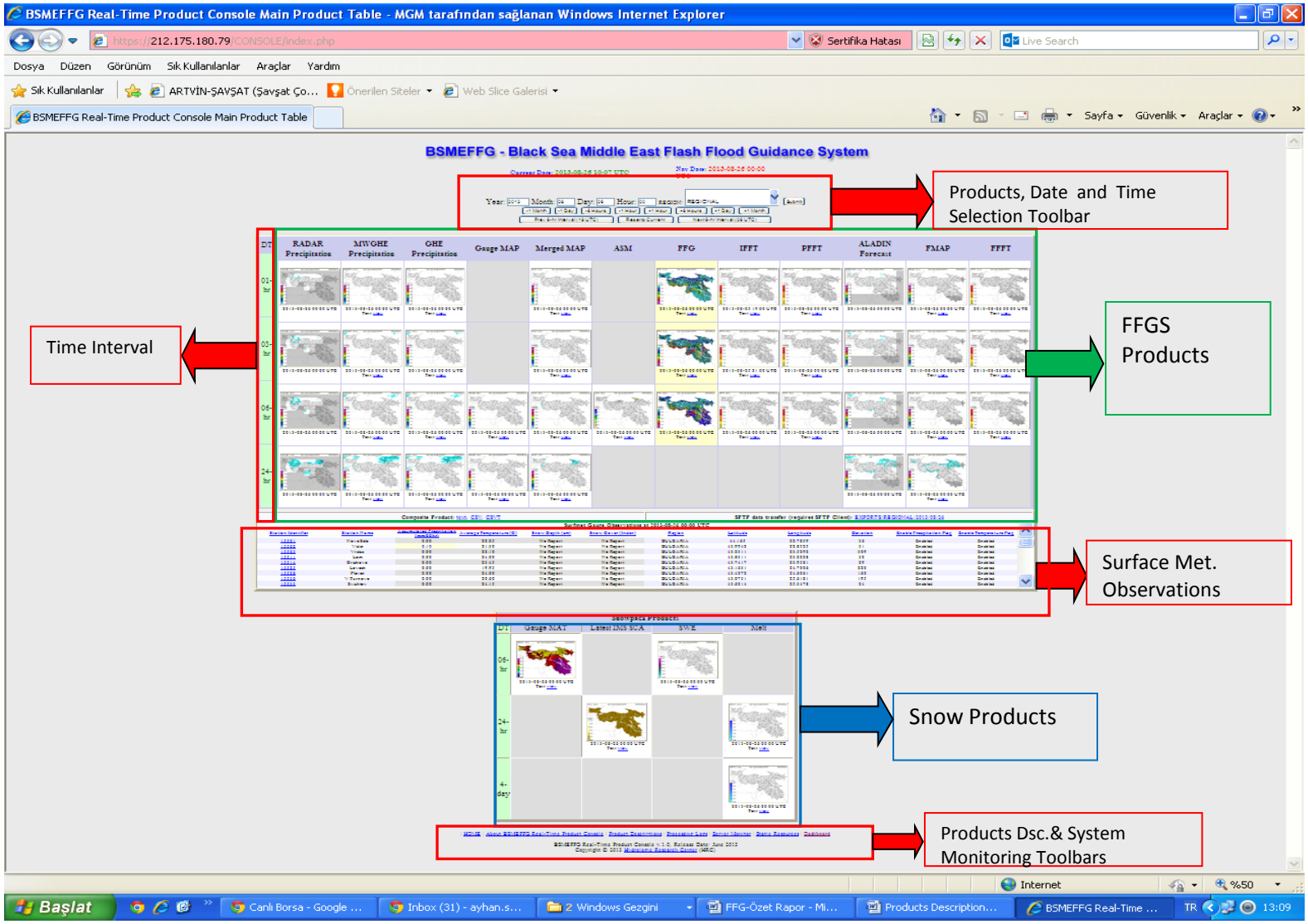
- Provide forecast products and data to the participating countries,
- Collaborate with WMO to implement flash flood hydrometeorologist training programme,
- Evaluate FFG products from the regional perspective and conduct verification study in collaboration with participating countries,
- Have good internet connection to download and exchange data.



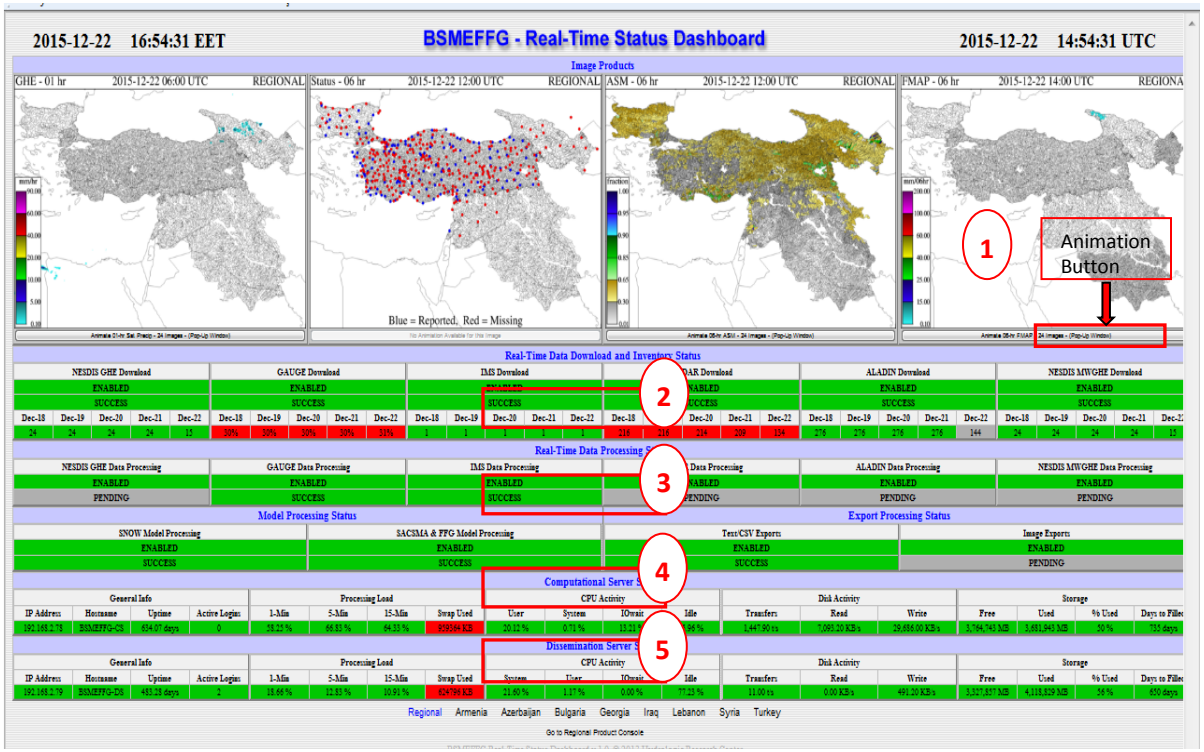
Participating NMHSs:

- Prepare and issue flash flood warnings and alerts to the public and national agencies including Emergency Management Authorities,
- Provide historical and in-situ local data to the FFG system developer through the RC,
- Participate in the Flash Flood Hydrometeorologist Training Programme (Steps 1-5),
- Conduct verification studies.

FFGS Forecaster Console



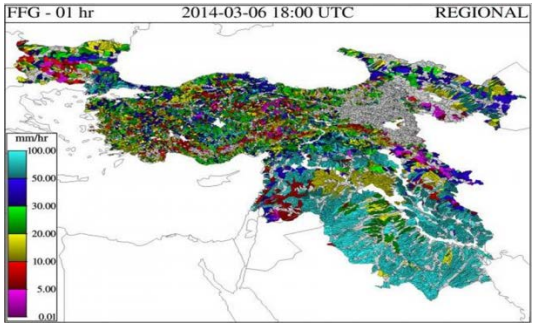
FFGS Dashboard



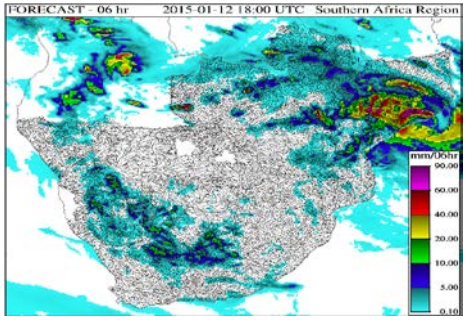
Dashboard is designed to monitor server processes:

- (**1**) Quick-look;
- (**2**) Real-Time data downloads and inventory status;
- (**3**) Real-Time Data processing status;
- (**4**) Computational server status; and
- (**5**) Dissemination server status.

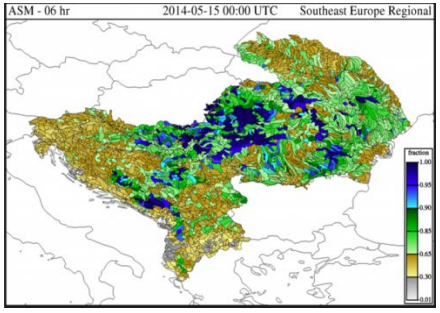
Flash Flood Guidance System (FFGS) Products



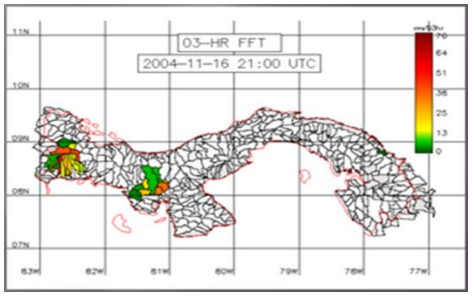
- Flash Flood Guidance for Black Sea and Middle East FFGS.



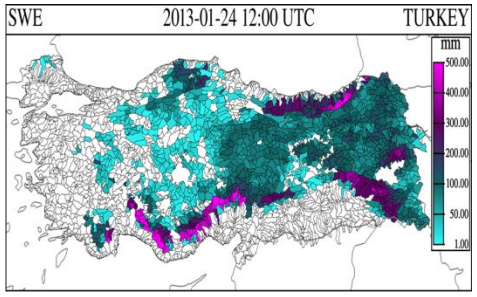
- GHE Satellite precipitation for Southern Africa Region FFGS.



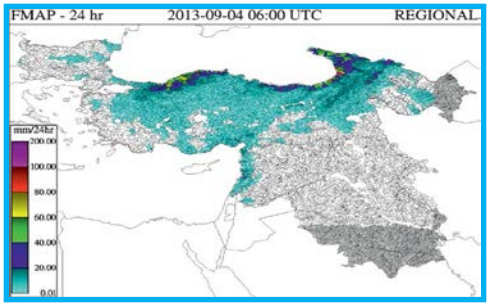
- Average Soil Moisture for South East Europe FFGS.



- Flash Flood Threat for Central America FFGS

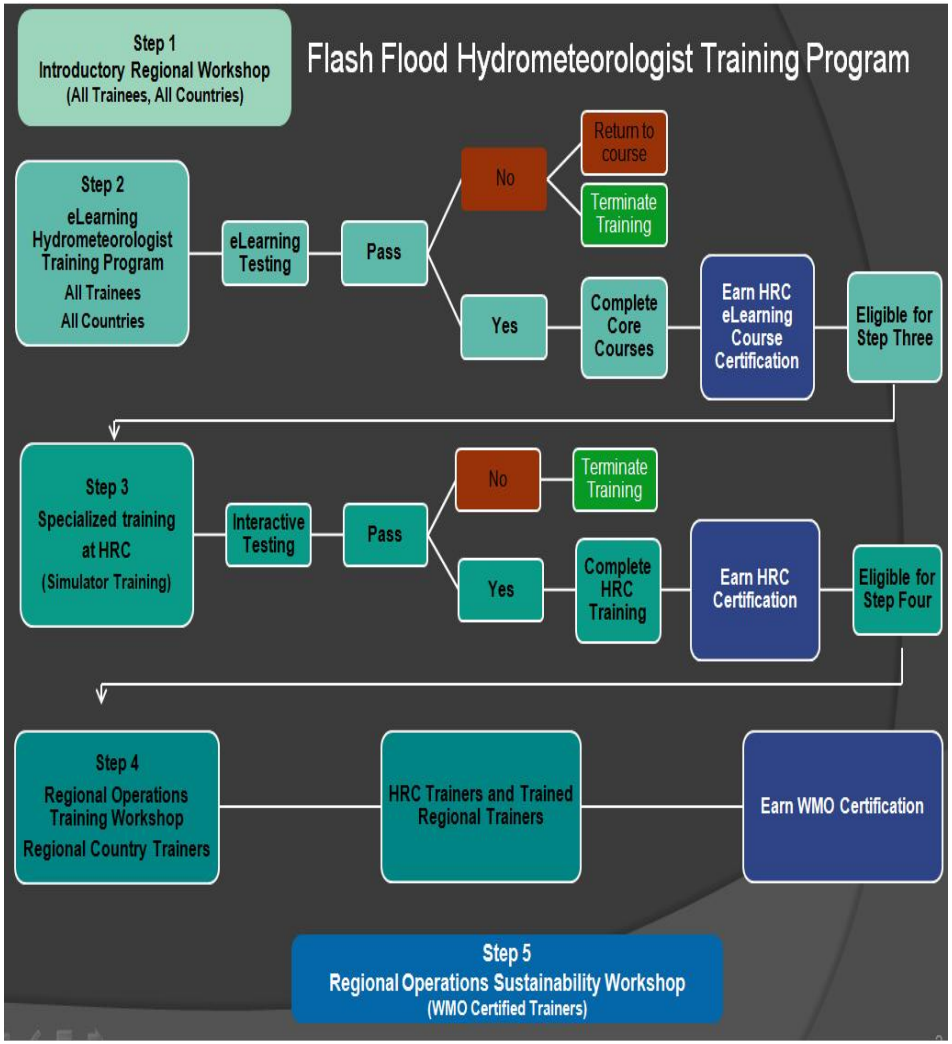


- Snow Water Equivalent (SWE) for Turkey.



- Forecast Mean Aereal Precipitation for Black Sea and Middle East FFGS.

Flash Flood Hydrometeorologist Training Programme



Training is and integral part of regional FFG Systems and consists of five steps:

Step-1: Introductory in-country workshops and meetings such as Steering Committee Meetings;

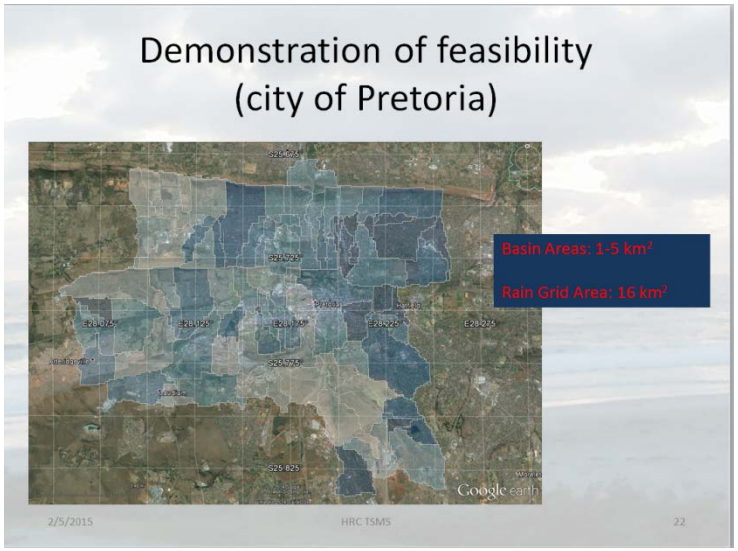
Step-2: On line eLearning comprises elements of meteorology, hydrology, flash flood guidance, GIS, and remote sensing;

Step-3: Advanced operations and interactive simulator training at the Hydrologic Research Center (HRC), USA;

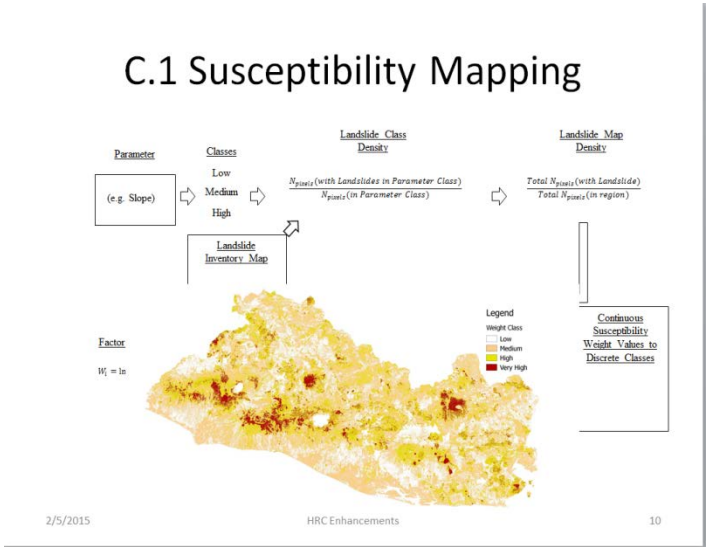
Step-4: Regional operations training workshop toward qualification of WMO flash flood trainer certificate;

Step-5: Regional operation sustainability workshop provided by the WMO certified trainer.

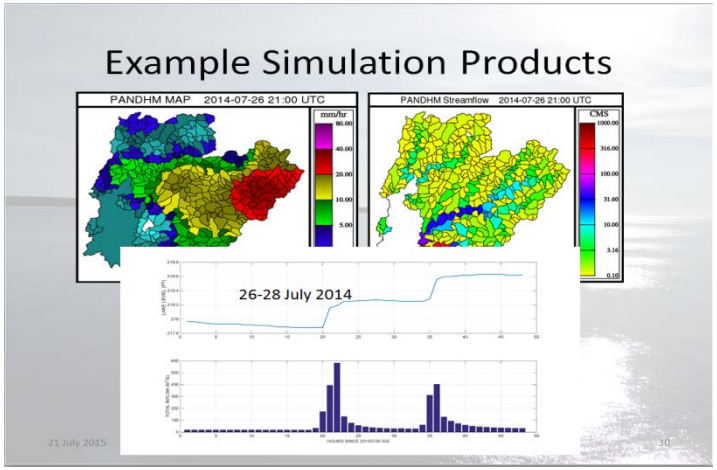
Advances



Urban Flash Flood Early Warning System



Landslide Susceptibility Mapping



Expandable and Scalable Riverine Routing

Role of WMO

WMO will be the primary liaison with its National Meteorological and Hydrological Services and the designated Regional Centre and intends to perform the following activities:

- Provide technical and administrative assistance for the *design, development, implementation* and *operations* of the regional Flash Flood Guidance System as part of the global Flash Flood Guidance System;
- Provide support in the design and implementation of various *training activities* (Step 1-5 training), including the development of on-line training;
- Provide support in the development of *operations concepts* for inclusion of the FFG diagnostic tool into current National Meteorological and Hydrological Services operations;

Role of WMO (continued)

- Provide support in developing *collaborations* between the National Meteorological and Hydrological Services and disaster risk management organizations;

- Provide support in developing regional collaborations and cooperation between the National Meteorological and Hydrological Services and the Regional Centre and in collaborations between regions;

- Provide support in the use of the WMO Global Telecommunications System (GTS) and WMO Information System (WIS) for data access and distribution;

Role of WMO (continued)

- Encourage, where appropriate, cooperation and inter-operability of the South America Flash Flood Guidance project *with other national and regional projects;*
- Ensure integrity of the project with other regional implementations of the Flash Flood Guidance projects;
- Ensure full integration of the Flash Flood Guidance project in the *WMO Flood Forecasting Initiative;*
- Facilitate the use of products and information generated in aggressively reducing exposure to disaster risk and improving disaster risk management in participating countries.

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Thank you for your attention

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