



Fifth Meeting of the Pacific Meteorological Council (PMC-5) Working Papers

7-9 August 2019

Apia

Samoa

Agenda Item 14.2: Establishment of Flash Flood Guidance System for Fiji (FijiFFGS)

Purpose:

1. To assist with the enhancement of flash flood forecasting capabilities in Fiji and thereby, mitigate the adverse impacts of flash floods in the country, the Flash Flood Guidance System for Fiji (FijiFFGS) has been envisaged.
2. The Fiji FFGS is aimed at the development and implementation of the FFGS specifically for the Republic of Fiji. The approach will entail development of technology, training, protocols and procedures to address the issues of mitigating the impacts of flash floods and the application of such system allowing the provision of critical and timely information by the Fiji Meteorological Service (FMS)
3. To contribute towards reducing the vulnerability of the country to hydro-meteorological disasters, specifically flash floods, by developing and implementing a flash flood guidance system to strengthen national capacity to develop timely and accurate flash flood warnings.

Background:

1. Recognizing the importance of predicting flash flood events, the Flash Flood Guidance System (FFGS) project with global coverage was approved during the 15th session of the World Meteorological Congress in May 2007.
2. Since its inception and following the implementation of the Central America Flash Flood Guidance System (CAFFGS), the project has expanded to over 64 countries (as of December, 2018), with more to be included in the future.
3. The FijiFFGS is one of the 13 systems developed and implemented so far under this agreement.
4. The FFGS provides coverage to 3 billion people or 40% of the world's population.

5. Funding for the FijiFFGS is provided as part of the Climate Risk and Early Warning System (CREWS) program through an agreement between Environment and Climate Change Canada (ECCC) and WMO for the project entitled Building Resilience to High-Impact Hydrometeorological Events through Strengthening Multi-Hazard Early Warning Systems (MHEWS) in Small Island Developing States (SIDS) and Southeast Asia (SeA). This agreement was signed on 19 February 2017.

Update:

1. The Initial Planning Meeting was held at the Fiji Meteorological Service in Nadi, Fiji on the 12th and 13th of November 2018. This was attended by representatives of the Fiji Meteorological Service (FMS) and National Disaster Management Office (NDMO) as well as the World Meteorological Organization (WMO) and Hydrologic Research Center (HRC). The meeting provided an overview of the components of the FFGS, discussed real-time and historical data requirements and developed a work plan for the implementation of the system (FijiFFGS), provided simulation training for forecasters and disaster managers, and paved the way for close collaboration between the FMS and the National Disaster Management Office for effective flash flood warning and response for the Fiji Islands.
2. Following the initial planning meeting and on the 15th and 16th of November 2018, a session was held for forecasters and disaster managers on the ingestion and use of weather radar data for quantitative flash flood prediction.
3. The FijiFFGS is currently under development and real-time data collection is on-going. The historical data has been provided to the developer (HRC), catchment delineation files were provided to FMS and reviewed by FMS and Department of Lands and Survey (Fiji).
4. The FijiFFGS implementation also provides capacity building and cooperation for effectively mitigating disasters from flash floods. Seven experts (weather forecasting, climate, hydrology, IT, GIS, disaster management) have registered, undertook, and completed online courses in June 2019, which is a prerequisite for the advanced (classroom/face-to-face) training scheduled for October/November 2019. Online courses include: Elements of Meteorology, Elements of Hydrology, Fluvial Geomorphology, GIS basics, FFGS Products, Remote Sensing, NWP models in FFGS, Uncertainty and Early Warning Systems.
5. The FijiFFGS First Steering Committee Meeting will be held in Suva, Fiji from 23rd to 25th of July 2019. The main objectives are as follows: to review project development status and to provide feedback on the system development; review the fundamental concepts and products; illustrate the use of FFGS products; conduct hands-on exercise of a few past flood events; demonstrate the preparation of flash flood bulletins for the issuance of flash flood warnings; pave the way for close collaboration between the FMS, National Disaster Management Agency and relevant stakeholders for effective flash flood warning and response for Fiji.

Recommendations:

The Meeting is invited to:

1. **Note** the implementation of the FFGS is a major step towards mitigating some of the adverse impacts associated with these events and the setting up of dedicated communication channels between the various stakeholders, especially with National Meteorological Agency. There is uniqueness 'in this FFGS project apart from other projects as Flash floods are hydro-meteorological events and require meteorology and hydrology expertise and collaboration with the disaster management office and relevant agencies.
2. **Recognise** the funding for the FijiFFGS as part of the Climate Risk and Early Warning System (CREWS) program through an agreement between Environment and Climate Change Canada (ECCC) and WMO.
3. **Recommend** the availability of various historical and real-time hydro meteorological data and other information to ensure that the FFGS provides the highest quality data and information to forecasters.
4. **Request** the PHS panel to support the existing FFGS project and to work with interested NMHSs on how to extend this FFGS project to the region.

Attachment

- FijiFFGS project Brief

Links

- Flash Flood Guidance System, World Meteorological Organization
http://www.wmo.int/pages/prog/hwrrp/flood/ffgs/index_en.php
- Hydrologic Research Center
<https://www.hrcwater.org/>

[1/8/2019]

Literature

Economic Losses, Poverty & Disasters 1998-2017

(https://www.unisdr.org/2016/iddr/CRED_Economic%20Losses_10oct_final.pdf)

NOAA/COMET, 2010: Flash Flood Early Warning System Reference Guide, University Corporation for Atmospheric Research