SHORT-TERM ACTIONS

➢ IMPROVEMENTS TO THE ONLINE DOCUMENTATION

Understanding of GloFAS and GFM protocols and methodology, and awareness of all available opportunities (e.g. data download) are necessary for the adequate use of forecast and monitoring products: providing clear and comprehensive documentation is therefore part of CEMS-Flood service.

The available online documentation includes the GloFAS web page, the GloFAS wiki and User Guide, the CEMS-Flood Data User Guide, the GFM wiki (which also includes the GFM Quick Start User Guide). This richness of online resources has developed over time, and some effort can be required to find the desired information: CEMS-Flood is working to streamline and improve the usability of online documentation.

The identified short-term action entails the revision of selected pages of the online documentation, to incorporate answers to the most frequent questions and doubts raised by users.

The questions collected through the survey are replied to in detail below, but the GFM and GloFAS online documentation will be updated accordingly as well, e.g. the GloFAS User Guide including the FAQ.

➢ PRODUCTS VISUALIZATION AND DATA ACCESS

Some users reported very specific issues they experienced, e.g. that the GFM web-viewer is not loading, or issues with the data download.

In the context of the annual survey it is difficult to provide an exhaustive answer as the necessary details for the specific cases are missing. Should a user experience issues with the service, valid for both GFM and GloFAS, the fastest way to get help is to report the issue using the contact form, which is monitored on working days.

Regarding issues with the GFM data download, the GFM Quick Start Guide provides detailed and step-by-step instructions for the different ways to download and work with GFM data. For GloFAS, the CEMS-Flood Data User Guide collects instructions for the available methods to download GloFAS data.

➢ INTEGRATING LOCAL OBSERVATIONS INTO GLOFAS

Some users requested the possibility to integrate local observations into the modelling system to improve the quality of the forecasts.

GloFAS users are encouraged to share discharge observations that can be used to calibrate and validate the hydrological model OS LISFLOOD, which is used in GloFAS.

Moreover, users can request "fixed reporting points" that allow the monitoring of the forecasted hydrological situation at their points of interest on a daily basis.

The current GloFAS operational protocol does not include post-processed hydrological forecasts using local observations. However, users can integrate the GloFAS real-time forecasts into their own local systems (and set-up their own post-processing protocols). The CEMS-Flood Data User Guide provides the necessary information on how to correctly identify locations on the GloFAS drainage network and retrieve the forecasts.

➢ PROVISION OF RELEVANT INFORMATION TO UNDERSTAND THE HYDROLOGICAL FORECASTS

Some users expressed interest in the provision of more granular information on meteorological conditions in the forecasts

It is assumed the request concerns the layers shown under the Meteorological products menu in the GloFAS Map viewer. Indeed, most of them show the accumulated 10-day precipitation. However, the Rain Animation layer provides an animation of the daily precipitation (mean of the ECMWF ensemble forecast) for the first 10 days of the forecast horizon.

In addition, the pop-up window of the Reporting Points from the Hydrological menu presents the daily evolution of precipitation, snowmelt and temperature as point information for the past 5 days and first 15 days of the forecast.

➢ TUTORIALS ON THE USE OF GLOFAS AND GFM DATA

Users expressed their interest in tutorials or Jupyter Notebook examples for working with GloFAS/GFM data in Python or QGIS.

Both the GloFAS and GFM online documentation contain extensive and detailed descriptions of the different ways of handling and using the data produced. For **GFM**, the Quick Start Guide provides step-by-step instructions as an easy access. The more advanced users can make use of Jupyter notebooks for working with the GFM STAC catalogue. The CEMS-Flood Data User Guide is the primary source for information on **GloFAS** data download and usage. Particularly the section Working with CEMS-Flood Data contains detailed instructions including code snippets that can be used and modified by the GloFAS users. Furthermore, the Early Warning Data Store contains data tutorials and open-source tools simplifying data access (under the tab TRAINING).