



## The EFAS seasonal outlook

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The EFAS (European Flood Awareness System) seasonal outlook became operational in December 2016. It is issued at the beginning of each month and provides an overview of the river flow over Europe, for the following two months. This product is based on an ensemble river flow forecast, produced by forcing the LISFLOOD hydrological model of EFAS with the ECMWF's System 4 seasonal meteorological forecast at daily time steps and on a 5 by 5 km grid. The river flow forecast is subsequently aggregated over 74 regions in Europe and averaged weekly. The EFAS seasonal outlook gives an early indication of flow anomalies on a pan-European scale. The outlook is shared with the EFAS partners, European hydro-meteorological institutes, informing them whether their region might be at risk of high or low river flows in the coming two months.

The EFAS seasonal hydrological forecasting system is one of the key systems of the Horizon 2020 IMPREX (IMproving PRedictions and management of hydrological EXtremes) project. The water sectors of IMPREX include navigation in central Europe, the hydropower industry in Sweden, flood protection activities in the Thames River basin and agriculture and reservoir management in Spain. The EFAS seasonal hydrological forecasts were assessed using a variety of metrics, reflecting key interests of those sectors, such as forecast uncertainty and accuracy, but also low and high flow prediction. More importantly, this forecast skill was translated into an added value for the stakeholders, by giving an interpretation of the impact of the forecast skill on its use within the various sectors. An overestimation of the spring discharge at river stations in Sweden could for example be problematic for the hydropower industry.

This information will feed the risk outlook tool of IMPREX, by complementing the river flow trend with an indication of the confidence in the signal for a range of specific water sectors.