

## EARLY FLOOD WARNING IN AFRICA: RESULTS OF A FEASIBILITY STUDIES IN THE JUBA, SHABELLE AND ZAMBEZI RIVERS IN AFRICA

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Building on the experiences gained with the European Flood Alert System (EFAS), pilot studies are carried out in three river basins in Africa. The European Flood Alert System, pre-operational since 2003, provides early flood alerts for European rivers. EFAS sends this alerts to National and Regional Hydrological Services, responsible for flood forecasting and warning in their area, as well as to European Commission Services.

EFAS provides flood alerts with early flood warning information based on multiple weather inputs. The system is set up for the whole of Europe on a 5-km grid and produces twice daily medium-range ensemble flood forecasting information with lead times of 3 to 10 days. Medium-range weather forecasts are incorporated from the Deutscher Wetterdienst (DWD) and the European Centre for Medium-Range Weather Forecasts (ECMWF), comprising a full set of 51 members from the Ensemble Prediction System (EPS/VAREPS). In an experimental phase, 16 ensemble weather forecasts from the COSMO-LEPS project, provided by ARPA-SIM (Bologna, Italy) are now also included.

At present, the experiences with the European EFAS system are used to evaluate the feasibility of flood early warning for Africa. Three case studies are carried in the Juba and Shabelle rivers (Somalia and Ethiopia), and in the Zambesi river (Southern Africa). Collaborations exist with the FAO SWALIM project for Somalia, and the University of Washington State for the Zambesi river, as well as with the Global Runoff Data Centre in Koblenz exist for exchanges of data and experiences.

Meteorological and Discharge observations are used to calibrate and test the model, as well as soils, landuse and topographic data available within the JRC African Observatory. ECMWF ERA-40 data and re-forecasts of flood events from January to March 1978, and in March 2001 are evaluated to examine the feasibility for early flood warning. First results will be presented.