

IMDROFLOOD

Improving Drought and Flood Early Warning, Forecasting and Mitigation using real-time hydroclimatic indicators

Strengthen drought and flood forecasting and early warning is essential to improve adaptation to climate change. IMDROFLOOD plans different actions to improve the mitigation of the impact of droughts and floods at the catchment level. All these actions will be implemented in different catchments of Europe and South Africa, covering contrasted environmental conditions and specific problematic. IMDROFLOOD will make use of currently available information sources on meteorological, hydrological and remote sensing data to generate new information relevant for flood and drought risk management. New monitoring networks and Doppler radar images will be tested for the generation of more suitable and operative drought indices and the role of ecosystems and vegetation communities in the mitigation of the impact of floods and droughts will be assessed, while probabilistic flood forecasting systems will be developed, integrating all these tools to implement a powerful Early Warning System. IMDROFLOOD adapts to different research priorities, developing innovative tools, including nature-based solutions and using different sensor technologies monitoring networks with the purpose of mitigating the impact of extreme events. IMDROFLOOD will obtain drought indices for different sectors useful for drought monitoring and early warning and will integrate short and medium term meteorological predictions with eco-hydrological rainfall-runoff models and numerical simulations for better flood prediction. IMDROFLOOD will also assess the role of vegetation communities and ecosystems on drought and flood impacts and it will develop drought vulnerability curves for natural ecosystems. These tasks will allow designing efficient drought and flood early warning and forecasting systems and produce information for helping in planning for risk management at the catchment scale. IMDROFLOOD is organized in eight Work Packages and it uses a transdisciplinary approach that includes innovative in-depth studies that combine drought and flood analyses from local to river basin levels. The outcome of this project will be not only basic research. Besides, the projects aims at putting this knowledge into work and will develop information tools based on server-side technologies that are basic for asound management of flood and drought risk, and will do this in close collaboration with the stakeholders and end-users to ensure an adequate uptake of the new products developed.