



# Overview of



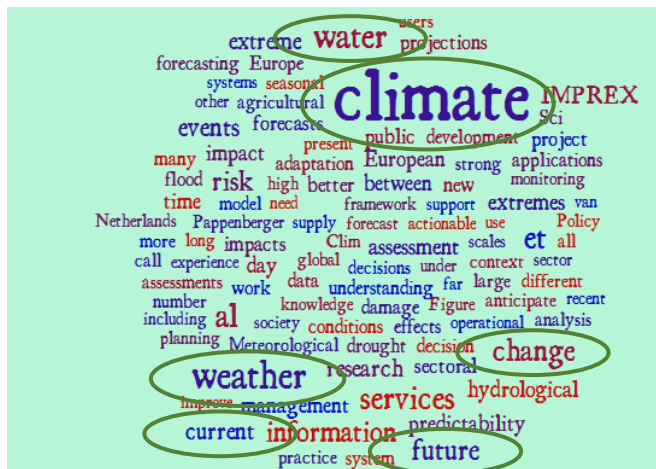
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## Topics of interest

Based on draft paper on IMPREX

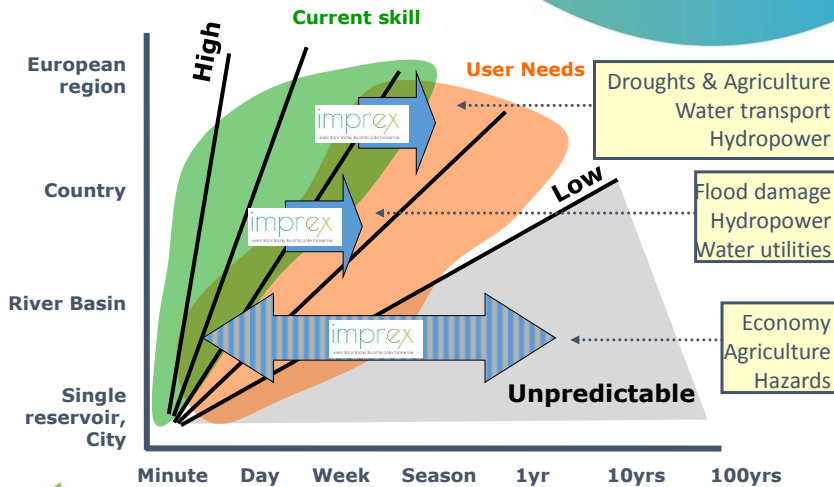


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Funded under the Horizon  
2020 Framework  
Programme of the  
European Union  
Grant Agreement No  
641811

## Weather & Climate Services



## Unique selling points

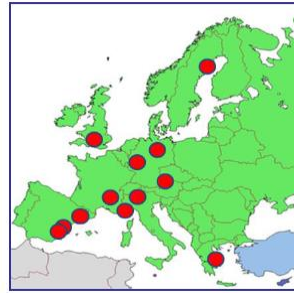
- Reliability of forecasts/projections *and* application oriented research
- *Weather* events in a *climate* context
- Strong team, combining
  - forecasting/climate modelling
  - sectoral experts & SMEs
  - outreach & dissemination
- Well embedded in e.g. Dutch climate action program



## Case studies

Target area	Sector and purpose	Selection of stakeholders
South-western French river basins (IRSTEA) (*)	Hydropower decision support	EDF
WP6: a decision model based on a heuristic optimisation of energy production is used to provide insights on how economic gains may vary according to input variability and reservoir operation constraints.		
UK South-western river basin (UKRAD)	Flood damage modelling	Environment Agency, Association of British Insurers
WP6: improved flood hazard forecasting and risk assessment, including flood damage mapping.		
Lake Como, Italy (POLMI)	Hydropower and irrigated agriculture decision support	AZA, ARPA-Lombardia
WP6: stochastic optimisation and control tools are applied in a snow-dominated river basin, vulnerable to extreme hydrologic events (particularly droughts). Trade-offs between hydropower, agriculture and flood protection are considered. Significant benefits from an efficient trans-sectoral risk management are expected.		
Biagno river basin, Italy (CMA)	Flood damage insurance	Liguria River Basin Authority, Regional Environmental Agency (ARPA-Lombardia)
WP6: High resolution climate change assessments and stochastic downscaling of extreme hydrological events are used to support flood damage assessment and insurance options.		
Júcar river basin, Spain (UPVLC) (*)	Irrigated water resource system management, with emphasis on drought risk management and adaptation	River Basin Authority CHJ, Irrigation District-ARI, Urban Water Services Operator-ADU
WP6: using a stochastic optimisation hydro-economic model (including the economic value of water use), potential strategies of coordinated reservoir operation for future climate scenarios are investigated. Trans-sectoral risk assessment concerns hydropower, agriculture and water economy, and include climate change related risks.		
Llobregat river basin, Spain (CITAqua)	Water quality impacts on drinking water operations	Aigües de Barcelona (water operators)
WP6: Regionalized climate projections affecting water quality, drought occurrences and erosion are evaluated. Risk management and adaptation measures are analysed in terms of impacts on drinking water operations.		
Segura river basin, Spain (FR)	Optimize reservoir operation for water supply, evaluate drought forecasts	Confederación Hidrográfica del Segura, Comissiónd de Regatants del Campo de Cartagena
WP6: Predictions of climatological drought indicators at sub-seasonal to seasonal time scale and future climate are related to the agricultural drought risk, and used in operational drought management systems.		
Messara region, Greece (TUC)	Civil protection and water resources management	Greek government (Civil Protection service, Min.for Env., Energy and Climate Change)
WP6: User specific forecasting needs tailored to support optimal water resources management planning of the already oversupplied natural water system minimizing drought impacts.		
Limehven river, Sweden (SMH)	Hydropower decision support	Vattenfall
WP6: in a typical north European catchment, the impacts of improved seasonal hydrometeorological predictions are evaluated with decision models used by the hydropower companies to plan hydropower production for the current and next winter seasons.		

Target Area	Sector and purpose	Selection of stakeholders
Central European rivers (Rhine and Danube) (RfC) (*)	Mapping flood damage, optimisation of transportation and risk-based decision support for fresh water allocation	Fed. Min. Transp. & Digital Infrastr., Dutch Min. of Infrastructure (RWS), Imperial Shipping Group, Danube Commission, BASF
WP6: i.e. Probabilistic seasonal meteorological forecasts and high resolution climate change assessments are used to assess correlated risks and climate change impacts in a multi-sector framework.		
Pan-European water resources (Deltares) (*)	Flood and drought damage impacts at European scale	EU stakeholders, including the European Commission
WP6: i.e. Multi-model forecasts are used for an improved impact assessment of European wide flood damage. Using the water accounting framework droughts and agriculture impacts under climate change are expressed with the help of risk maps.		



## Climate Services

### Relevant contributions from IMPREX

- Integration between weather time scale and climate change
- Covering entire chain
  - between drivers and impacts
  - between research and application
- Positioning SMEs as intermediate “broker” allowing tailoring to stakeholders needs
  - Example: leverage HKV by involving regional and federal water authorities:
    - bring scenarios in a risk concept
    - >125% of EU contribution to HKV





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## Acknowledgement



IMPRES is a research project supported by the European Commission under the Horizon 2020 Framework Programme

*Grant Agreement No 641811*

Duration: 01/10/15 – 01/10/19



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