

IMPROVING PREDICTIONS AND MANAGEMENT OF HYDROLOGICAL EXTREMES

“ *Experience in managing weather extremes is the best learning school to anticipate consequences of future climate* ”

WHAT IS IMPREX?

IMPRES will improve society's ability to anticipate and respond to future hydrological extreme events in Europe. It will enhance forecast quality of extreme hydro-meteorological conditions and their possible impacts. The knowledge developed by the project partners will support risk management and adaptation planning at European and national levels.

IMPRES focuses on water-related natural hazards events, such as floods and droughts and their consequences.

PROJECT OBJECTIVES?

- Develop methods and tools to improve the **forecasting** of meteorological and hydrological extremes and their impacts.
- Develop **novel risk assessment concepts** for hydrological extremes that respond to limitations of current methods and assessment practices.
- Demonstrate in a set of **case studies** the value of the information on hydrological impacts to relevant stakeholders at regional and European scale.
- Develop a prototype **periodic outlook** of multi-sectoral and trans-regional risks for hydrological hazards.
- Provide **policy recommendations** on risk management and adaptation strategies for future climate conditions.

CHALLENGE

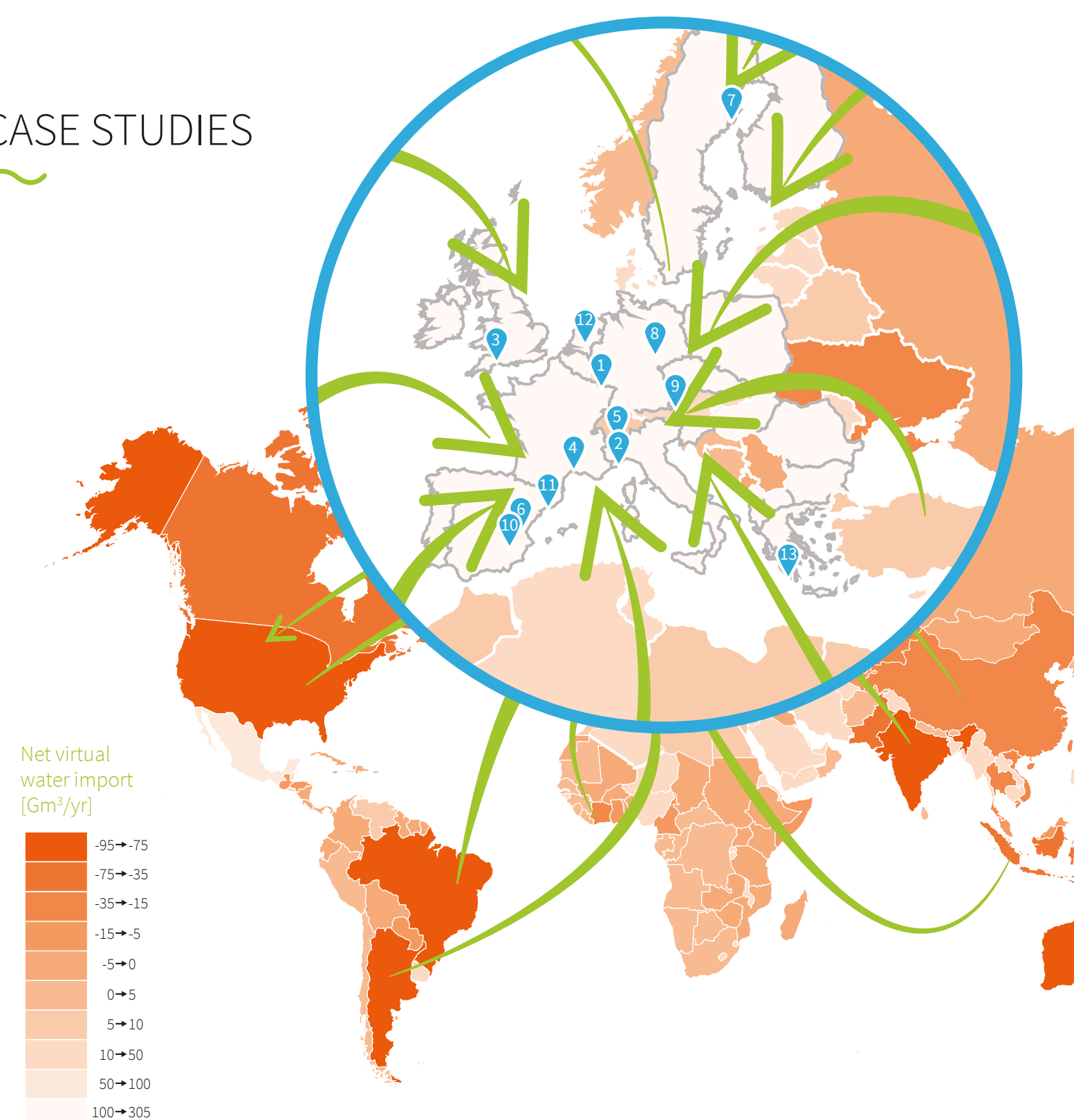
Both floods and droughts cause huge social and economic damage across Europe. For example, the 2013 large-scale floods in Germany caused overall losses of €11.7bn, while the 2014 UK winter floods cost the industry €1.8bn.

Climate change is likely to increase both the frequency and magnitude of these events in the coming years. Future hydrological extremes may be very different from today's reality and difficult to predict. Changed water-related extremes will have important implications on the water sector and the design of water management practices. **There is a need for “actionable research” to guide decisions!**

HOW WE DO IT?

- IMPRES is built on the idea that we can learn from today to anticipate tomorrow. **The project invests in improving current state-of-the-art forecasting systems and puts current experience with extremes in a future context.**
- IMPRES focuses on customising **climate information to stakeholders' needs**. The project is designed around a set of case studies addressing six strategic sectoral applications, which provide guidance on current practices and the information needed in the field.
- The co-creative setting guides the development of new forecasting tools, impact and risk assessment concepts, and management strategies.

CASE STUDIES



SECTORAL APPLICATIONS AND CASE STUDY EXAMPLES

FLOOD INUNDATION PREDICTION AND RISK ASSESSMENTS

- Rhine River Basin (The Netherlands and Germany)
- Bisagno River Basin (Italy)
- Somerset Region (UK)

HYDROPOWER

- South Eastern French Catchments
- Lake Como Basin (Italy)
- Jucar River Basin (Spain)
- Upper part of River Umeälven (Sweden)

TRANSPORT

- Central European River Basins of the Rhine, Elbe and Danube

URBAN WATER

- Segura and Llobregat River Basins (Spain)

AGRICULTURE AND DROUGHT

- Rhine-Meuse Estuary (The Netherlands)
- Segura and Jucar River Basins (Spain)
- Como River Basin (Italy)
- Messara River Basin (Greece)

WATER ECONOMY

- Global Supply Network

IMPRES will improve the quality of forecasts. Working in close collaboration with relevant stakeholders, we will facilitate the uptake of weather and climate information into policy and management.

PARTNERS

	Koninklijk Nederlands Meteorologisch Instituut – NL (project coordinator)		HKV Lijn in Water BV – NL
	Adelphi Research GmbH – GE		Institut national de recherche en sciences et technologies pour l'environnement et l'agriculture – FR
	Arctik – Environmental communication – BE		Met Office – UK
	Barcelona Supercomputing Center - Centro Nacional de Supercomputación – ES		Politecnico di Milano – IT
	Bundesanstalt für Gewässerkunde – GE		Potsdam-Institut für Klimafolgenforschung – GE
	Centro Internazionale in Monitoraggio Ambientale - Fondazione CIMA – IT		Stichting Deltares – NL
	Cetaqua, Centro Tecnológico del Agua, Fundación Privada – ES		Stichting Vu-VUmc – NL
	European Centre for Medium-Range Weather Forecasts – UK		Stichting Water Footprint Network – NL
	FutureWater SL – ES		Sveriges Meteorologiska och Hydrologiska Institutet – SE
	Helmholtz-Zentrum Geesthacht – Zentrum für Material- und Küstenforschung GmbH – GE		The Research Committee of the Technical University of Crete – GR
	Deutsches GeoForschungsZentrum – GE		The University Reading – UK
			Universitat Politècnica de València – ES

AUTHORS

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|------------------------|----------------------|
| ○ Bart van den Hurk | ○ Hans de Moel |
| ○ Albrecht Weerts | ○ Janet Wijngaard |
| ○ Bastian Klein | ○ Johannes Hunink |
| ○ Carlo Buontempo | ○ Laurens Bouwer |
| ○ Cédric Hananel | ○ Laurent Pouget |
| ○ Erik Kjellström | ○ María Máñez |
| ○ Ertug Ercin | ○ Maria-Helena Ramos |
| ○ Florian Pappenberger | |



PROJECT COORDINATION
Royal Netherlands Meteorological Institute (KNMI)
Bart van den Hurk (Coordinator)
Janet Wijngaard (Manager)
janet.wijngaard@knmi.nl

PROJECT COMMUNICATION
Arctik - Environmental communication
Riikka Pohjankoski
riikka.pohjankoski@arctik.eu



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