

**EDgE:  
End-to-end  
Demonstrator for  
improved decision  
making in the water  
sector in Europe**



- Present the objectives of EDgE
- Present functionalities of the Web application prototype
- Obtain your feedback: indicators and Web application

- Obtain Hydro-Climate impact indicators to be put to the disposal of the water sector
- EDgE will provide **climate change predictions** and **seasonal forecast** at pan-European level
- Based on multiple hydrological models simulations and forcing data on:
  1. River discharge(Q)
  2. soil moisture(SM)
  3. Acquirer recharge(GWR)
  4. Water equivalent of snow(SWE)
  5. Potential evapotranspiration (PET)
  6. Precipitation (P)
  7. Temperature (T)



## Drought

Regional Drought index (RDI)

RDI Frequency

Q90 anomaly

Max drought intensity

Total drought duration

## Flood

Total duration of high flows

Frequency of high flows

Flood magnitude

Specific volume of high flows

## Water availability

Surface water quantity index



- Changes annual high flow (e.g. Q10 – the flow exceeded 10% of the time on average)
- Changes in annual maximum flood
- Changes in annual low flow (Q90 or Q95)
- Changes in seasonal flow
- Changes in mean annual flow
- Probability distributions of future flows, for both seasonal forecasts and for climate change
- Changes in soil moisture
- Changes in groundwater recharge
- Changes in potential and actual evapo-transpiration
- Changes in precipitation
- Changes in snow water equivalent
- Changes in appropriate drought indicators, including drought duration
- Area under drought



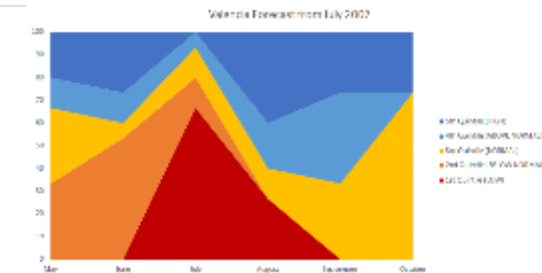
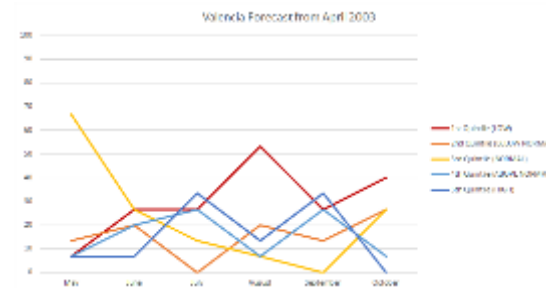
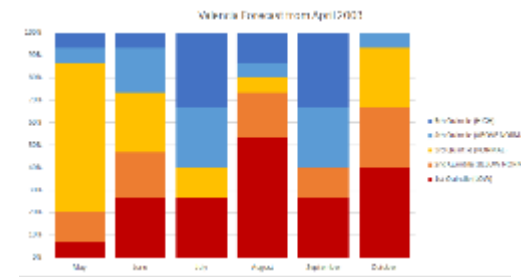
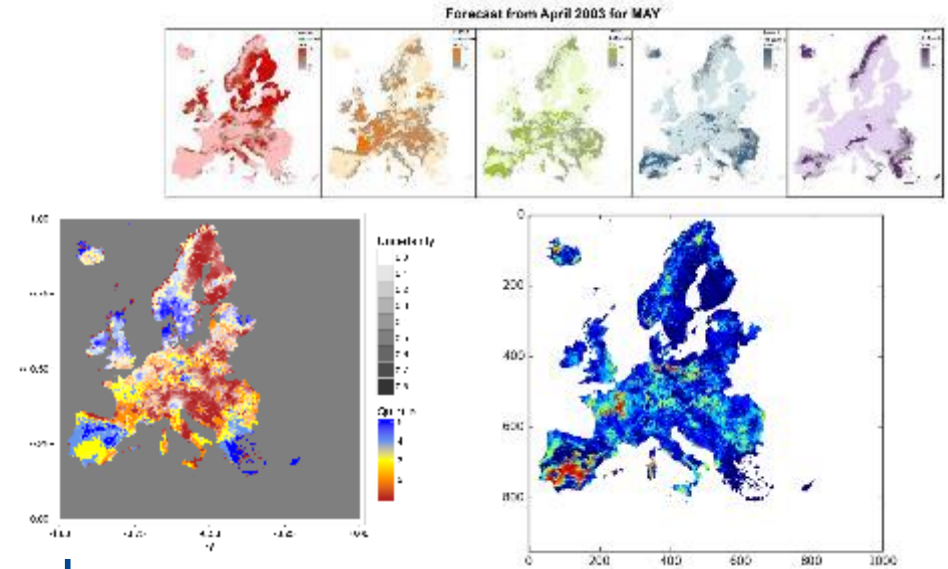
- The EDgE web application (Demonstrator) will be a web-based application to:
  - ✓ Allow different types of users to interact with the data
  - ✓ Allow users to download information (maps, database, etc..)
- Some feedback from previous Focus Groups of users (Spain, UK, Norway):
  - ✓ Simplicity, translation, interactive maps, maps and graphs for download, river basin district scale, 5x5 spatial resolution, ability to chose own CCh scenarios...



- What are you most interested in?
  - ✓Climate change projections?
  - ✓**Seasonal forecast?**
  - ✓Which indicators do you use?
  - ✓Which indicators are most useful for you?

## What do you prefer?

- Side-by-side quintile maps
- Dominant quintile maps
- Individual quintile maps
- Maps with pie charts for selected locations
- Stacked bar graphs
- Stacked area graphs
- Line graphs



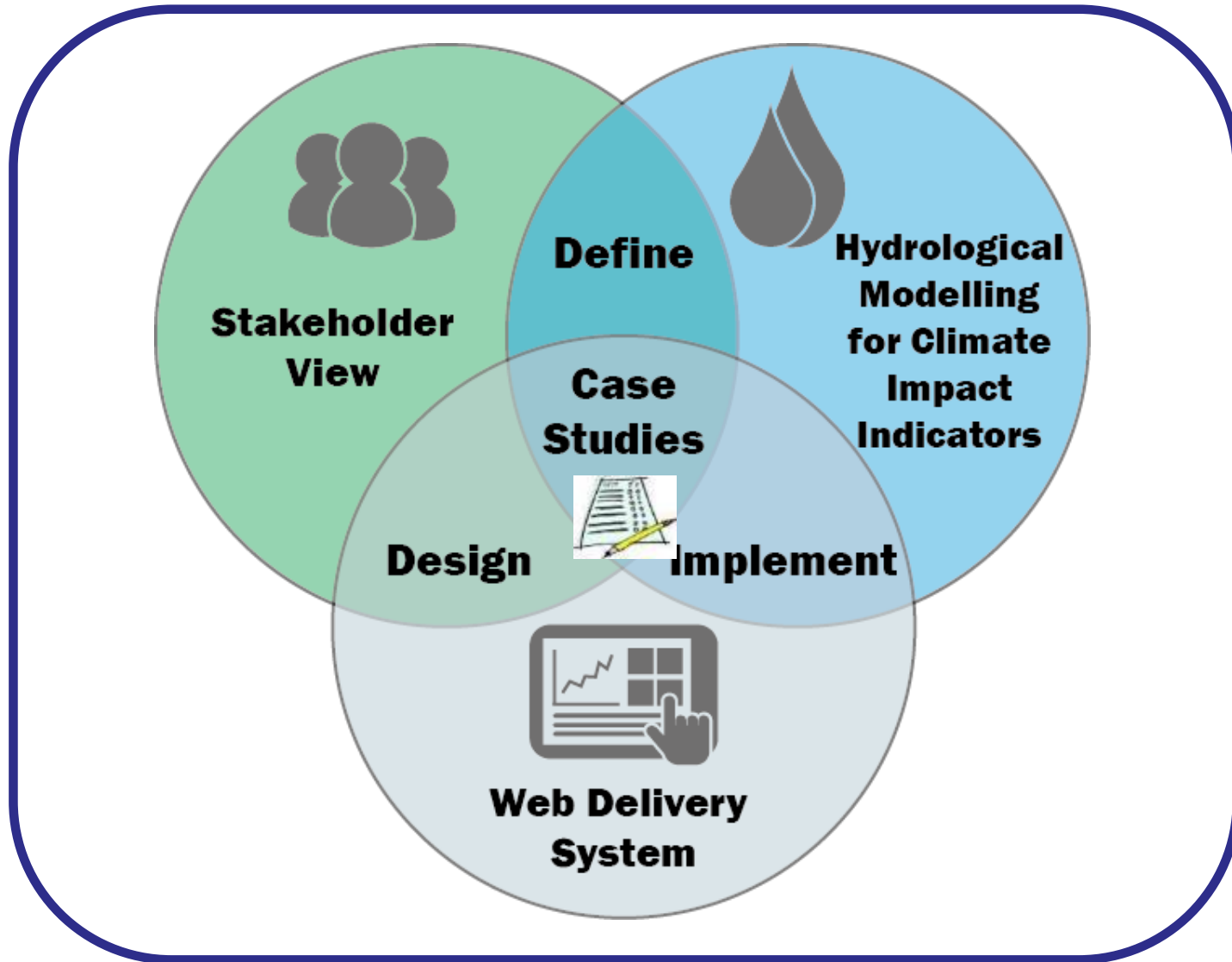




- Please use and test the web application and send us your feedback:
- <https://climate.copernicus.eu/edge-end-end-demonstrator-improved-decision-making-water-sector-europe> (main page of the project)  
<http://192.171.173.135/Apps/#map>  
<http://192.171.173.135/Apps/#climate-change>
- But please BE AWARE that:
  - ✓ EDgE is a proof of concept service, for testing
  - ✓ The data is provisional, and will be replaced with recalibrated model data at a later stage; so
  - ✓ **Do not disseminate the URL more widely yet.**



# CASE STUDIES



## Aims

- ★ To test EDgE products
- ★ To demonstrate how they can be used in decision-making
- ★ To improve the demonstrator
- ★ To gather information for market evaluation (EDgE benefits)
- ★ To inform the user guidance
- ★ Consider the transferability of EDgE
- ★ To communicate and promote EDgE



## Together, the case studies will look at:

- ★ Different types of decisions
- ★ Different decision-making contexts (policy; regulatory; planning; investment; operational)
- ★ Different types of users (simple to sophisticated)
- ★ Different products (maps, data, summarised outputs etc.)
- ★ Decisions on different spatial and temporal resolutions
- ★ Horizons of prediction (from seasonal forecasts to climate change projections)



- ★ A detailed write up
- ★ 2-3 images
- ★ by 15 January 2017

The Environment Agency (UK) will:

- ★ Provide case study template
- ★ Produce summary factsheets for each case study
- ★ Compile a single case study report



<b>Title</b>	<b>Who</b>	<b>Objective</b>	<b>Time horizon</b>
CS1: Climate change adaptation in snow-dominated region	NVE	Long-term water resource planning and adaptation measures	Multi-decadal
CS2: Urban water management	Cetaqua	Operation and planning of water supply	Seasonal to multi-decadal
C3: Water resource planning	EA	Quantify value of European SIS compared with existing national services	Seasonal to medium to long term
C4: Integrated water resource management	MENBO	Evaluate the use of climate-derived water indicators for water resource management	Seasonal to medium term



- ★ Would you like to do a case study?
- ★ What would you do it on?
- ★ What metrics and data would you use?



**THANK YOU FOR YOUR ATTENTION**

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