# New developments in web-based information systems: Real time collaboration

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*Visualisation in Meteorology Week 2015 – ECMWF, Shinfield Park*
*Monday 28 September*

# The project at a glance

| | |
|---|---|
| **Title:** | Global Earth Observation for Integrated Water Resources Assessment |
| **Instrument:** | FP7 Collaborative Project |
| **Total Cost:** | 11,327,917 € |
| **EC Contribution:** | 8,869,787 € |
| **Start Date:** | 01/01/2014 |
| **Duration:** | 48 months |
| **Project Coordinator:** | Stichting Deltares |
| **Consortium:** | 27 partners, from 15 countries and 4 continents<br>Deltares • ECWMF • University Utrecht • METEO-FRANCE • CNR • **KKK ITC** • UNESCO-IHE • NERC • JRC • CNRS • TU-Wien • **PML APPLICATIONS** • **GISAT** • USC • UNI KASSEL • SUR • VU University Amsterdam • **Ambiotek** • Tartu Ülikool • Addis Ababa Institute of Technology • National University of Colombia • **I-MAGE CONSULT** • **SEVEN** • **ESTELLUS**. The project works in close cooperation with CSIRO in Australia and GNS Science in New Zealand |
| **Project Web Site:** | http://www.earth2observe.eu/ |
| **Key Words:** | Water resources, Earth observation, Global hydrological models, Land surface models, Water quality, Water scarcity, Floods, Drought |

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# The Water Cycle Integrator (WCI) Portal
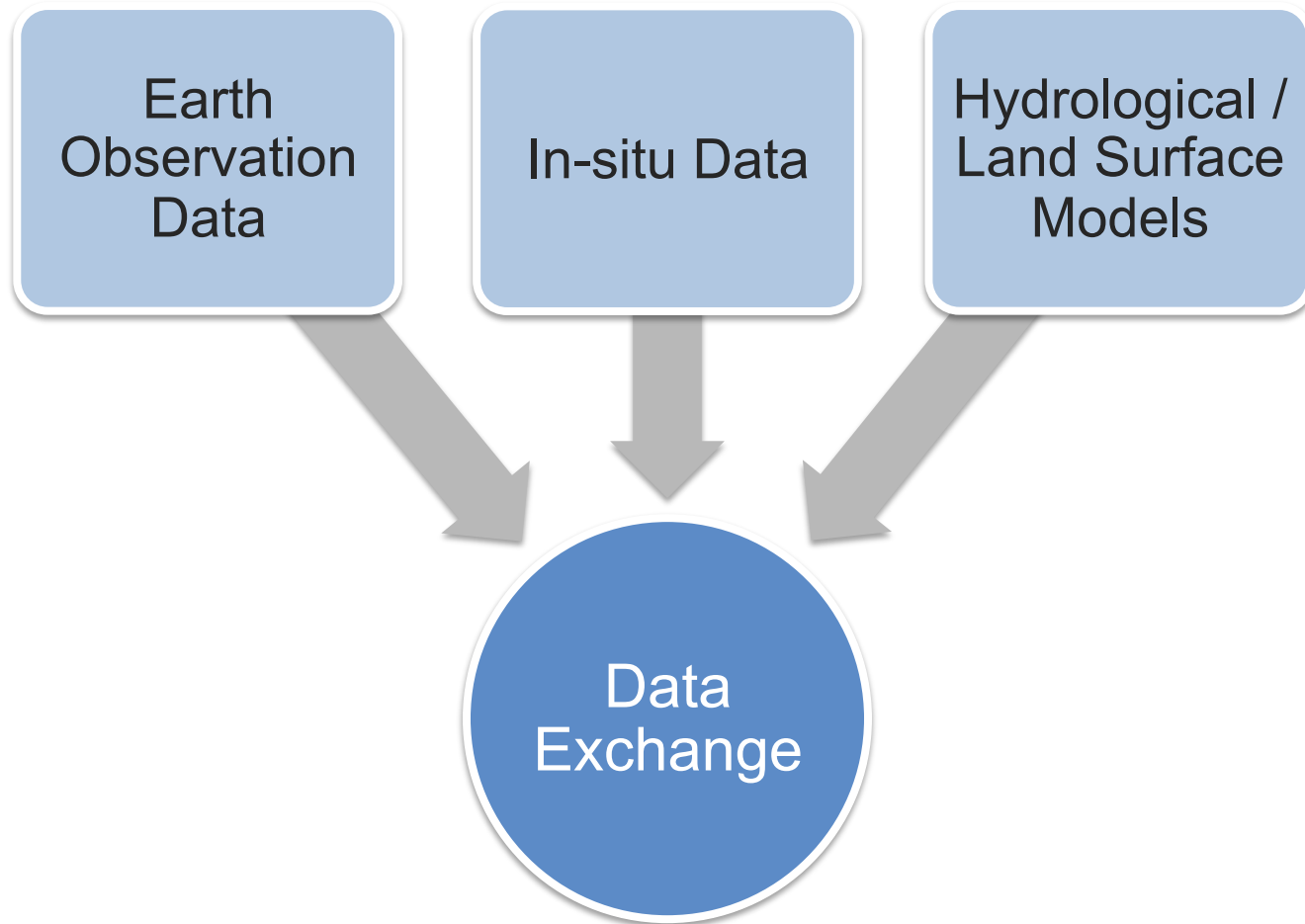
# The Water Cycle Integrator (WCI) Portal

## Open Standards, Open Source

### GIS Portal – the user interface

- OpenLayers – JavaScript mapping library
- JQuery
- Custom JavaScript

### Plotting Service – analysis tool

- Node.js – server-side JavaScript
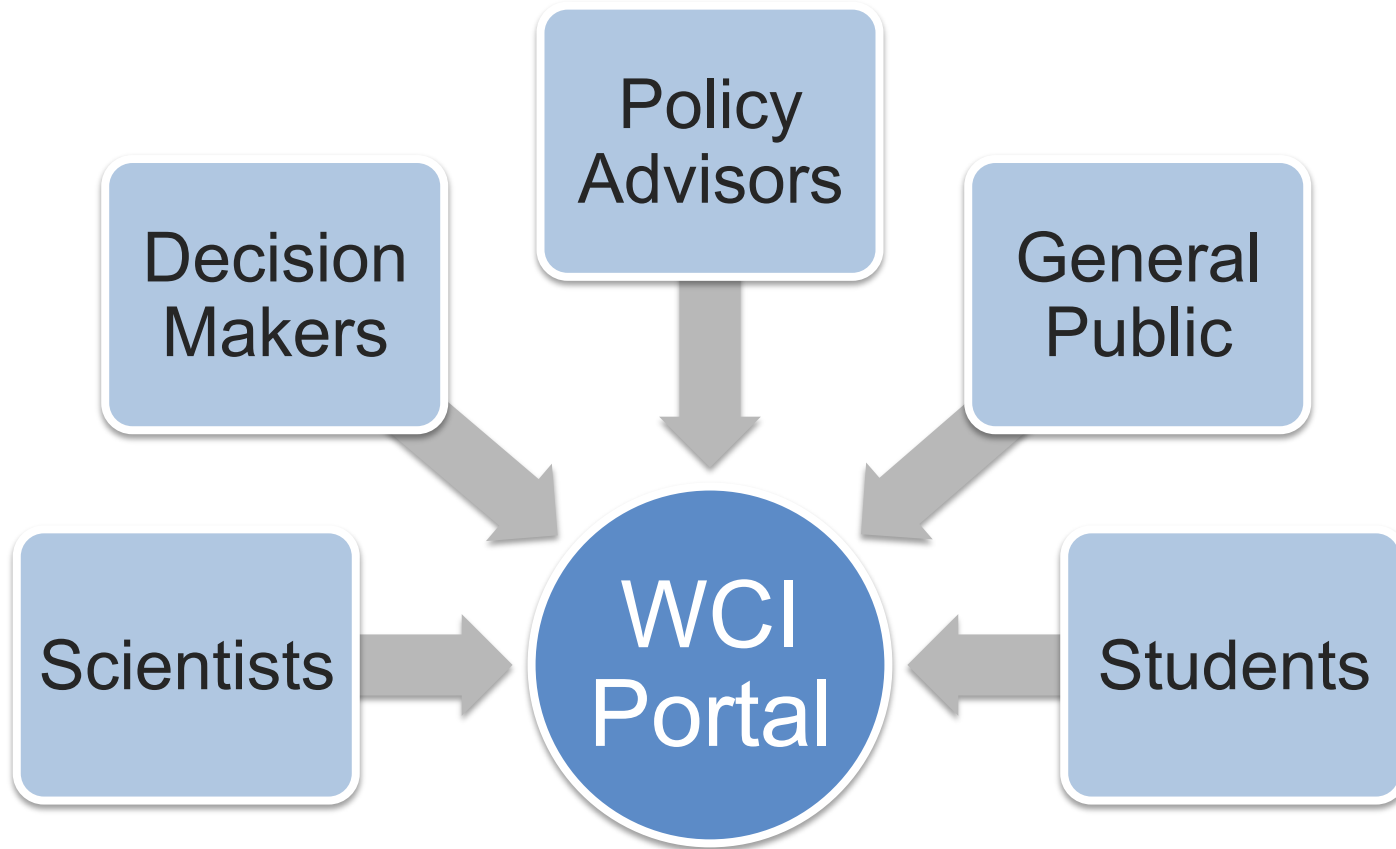- nvd3 – re-usable chart library
- Scalable Vector Graphics (SVG)

**Open Geospatial Consortium Standards**
- Web Map Service (WMS)
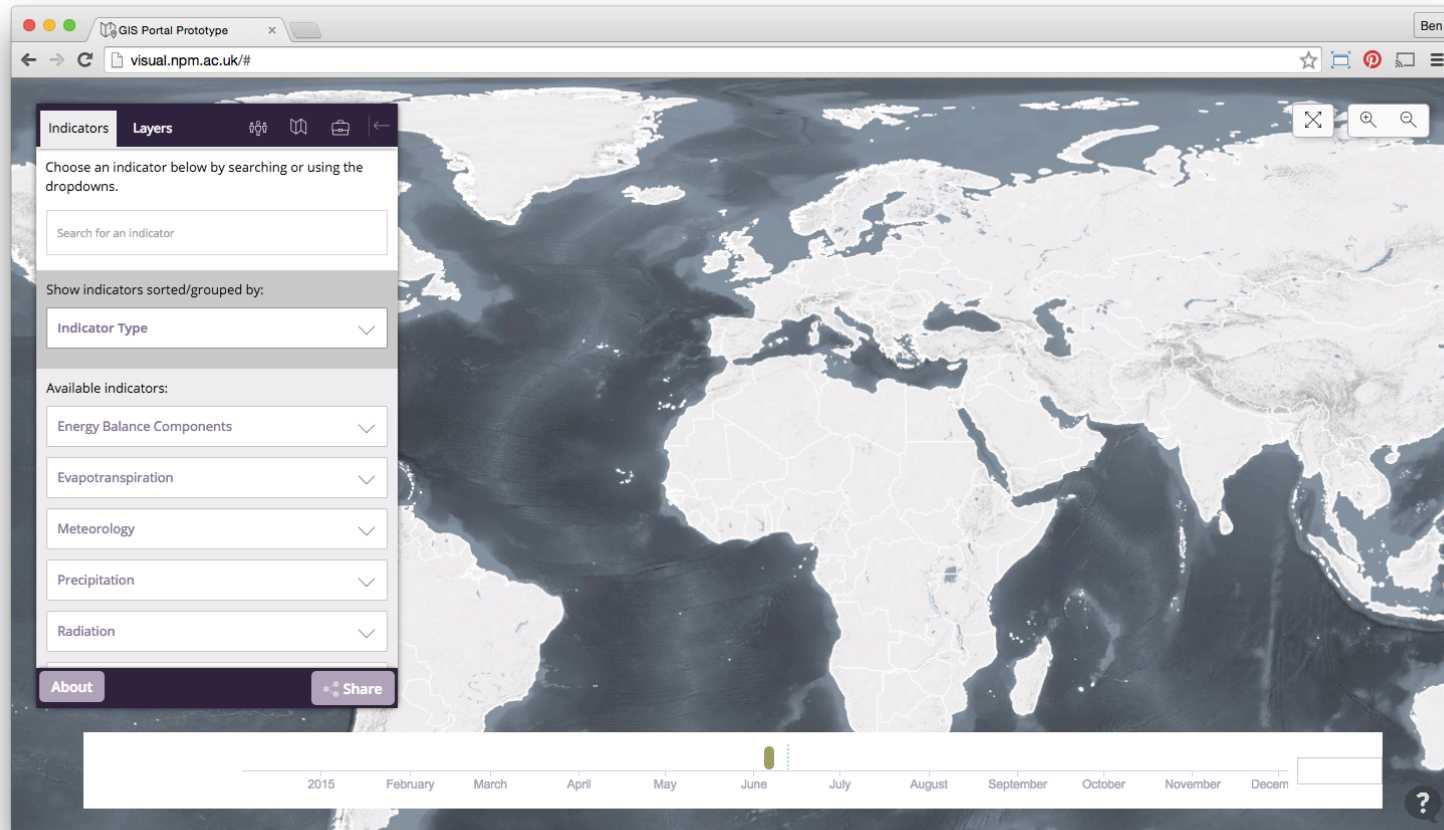- Web Coverage Service (WCS)
- Sensor Observation Service (SOS)

### Data Services

- THREDDS Data Server
- CF-Compliant netCDF file format
- High-availability load balanced server cluster
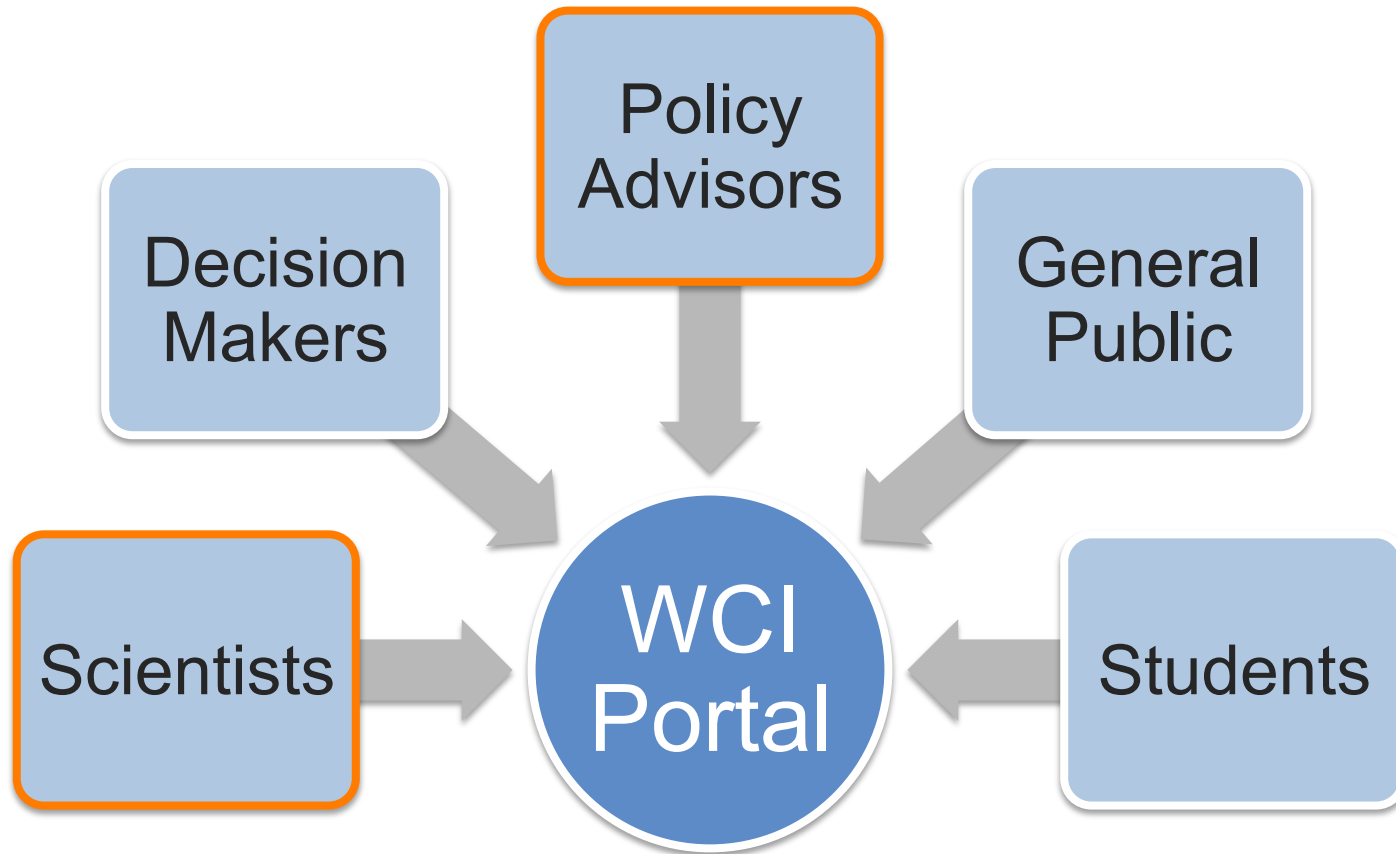
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https://wci.earth2observe.eu
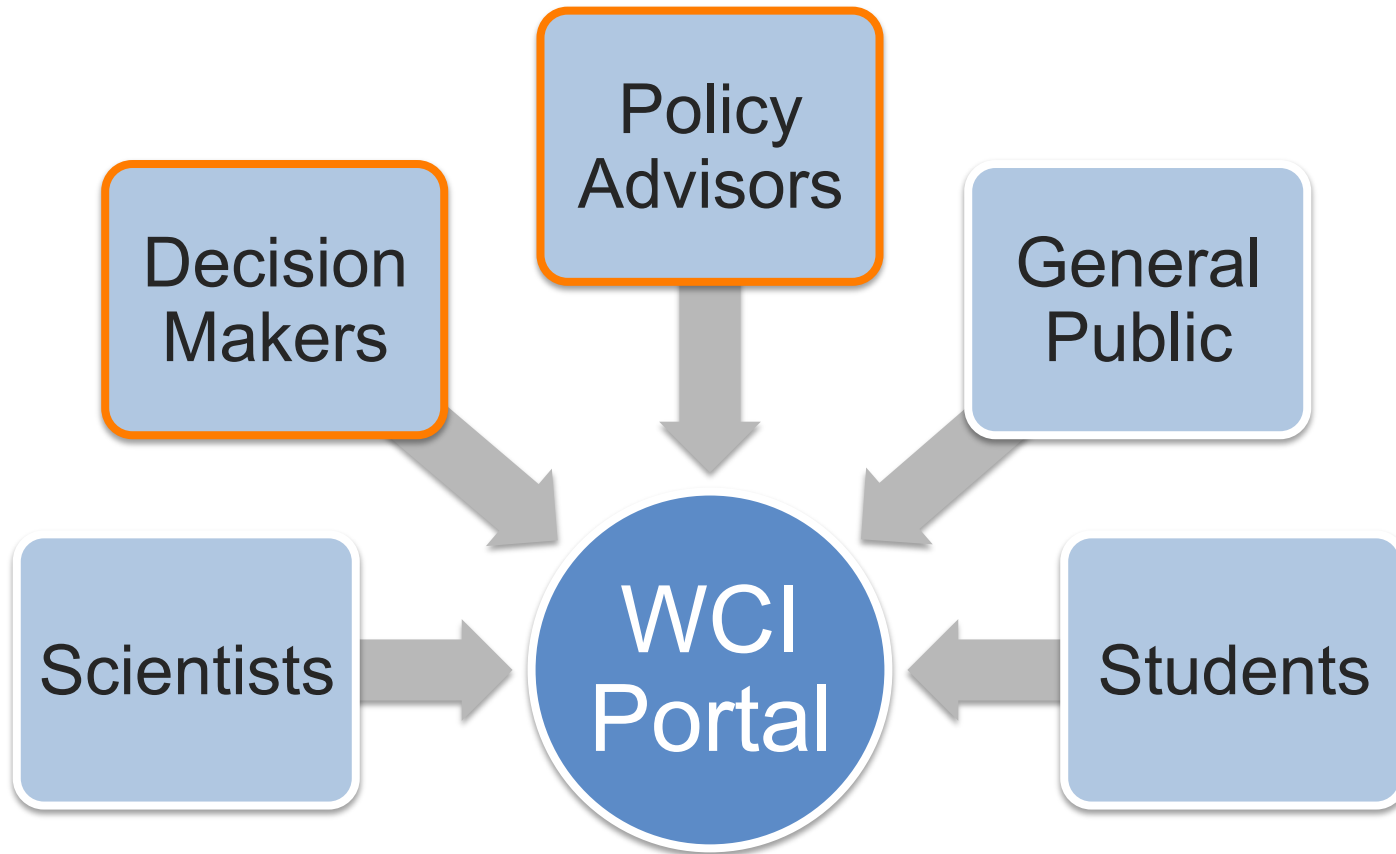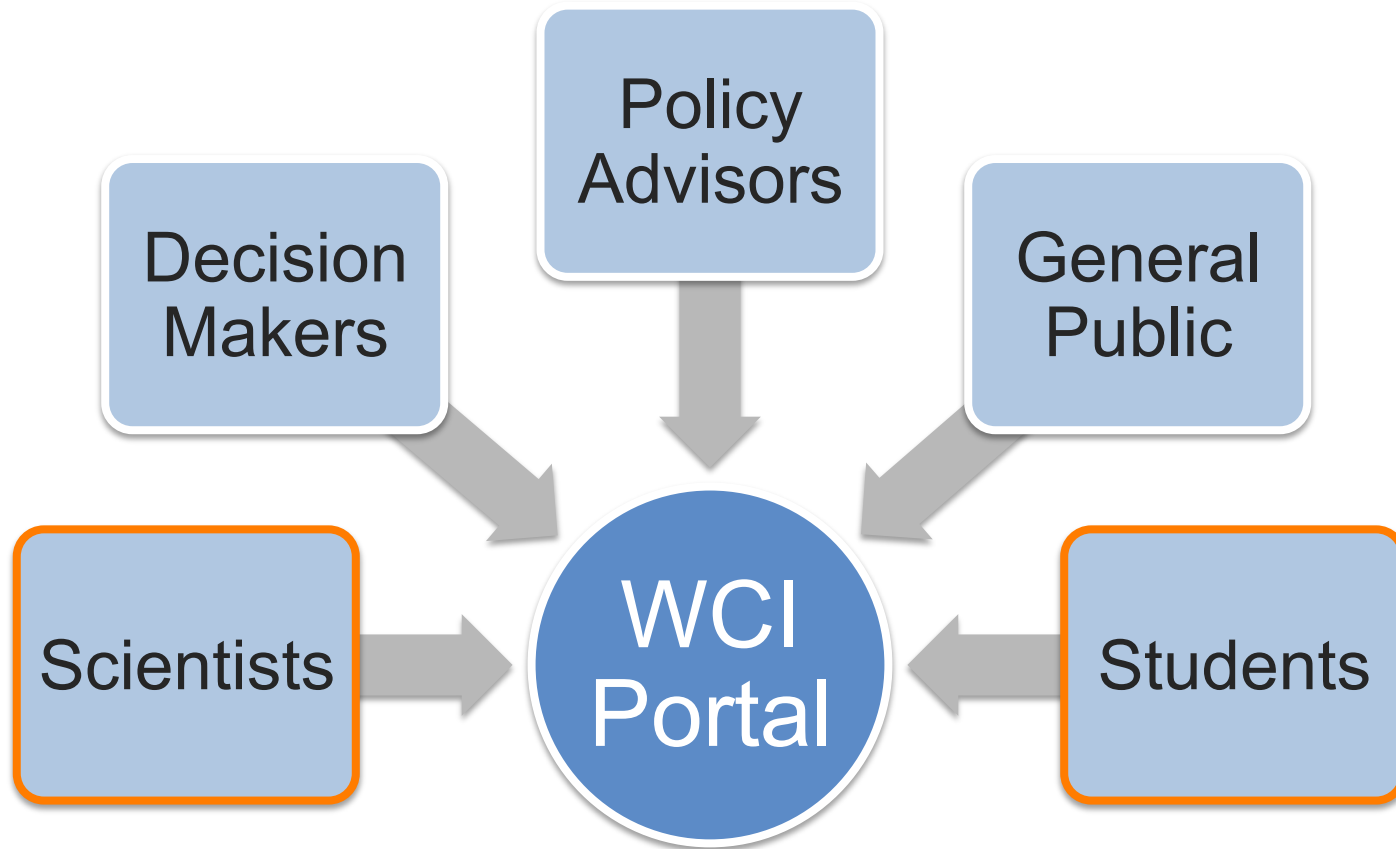
# The Water Cycle Integrator (WCI) Portal

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Decision Makers

Policy Advisors

General Public

Scientists

WCI Portal

Students

https://wci.earth2observe.eu

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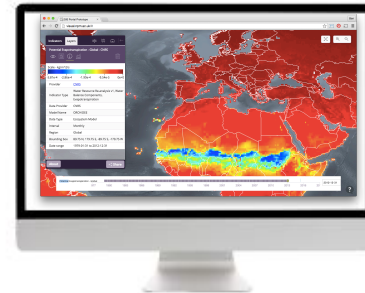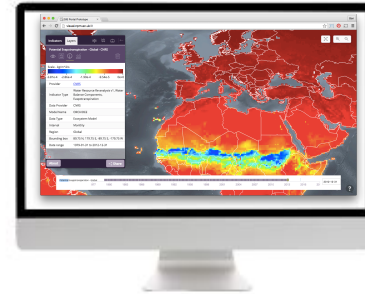# The Water Cycle Integrator (WCI) Portal
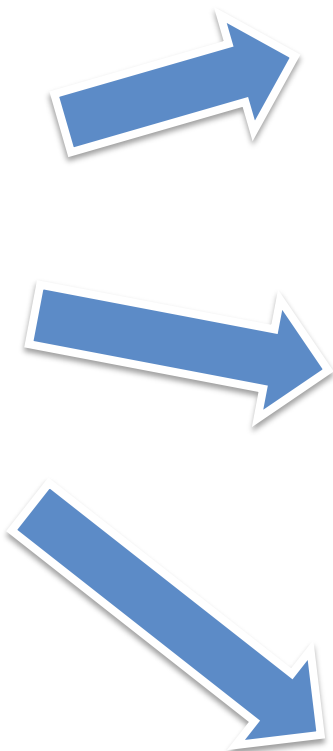


https://wci.earth2observe.eu

# Collaboration Tools

# Collaboration Tools



Meeting Organiser

Meeting Attendees

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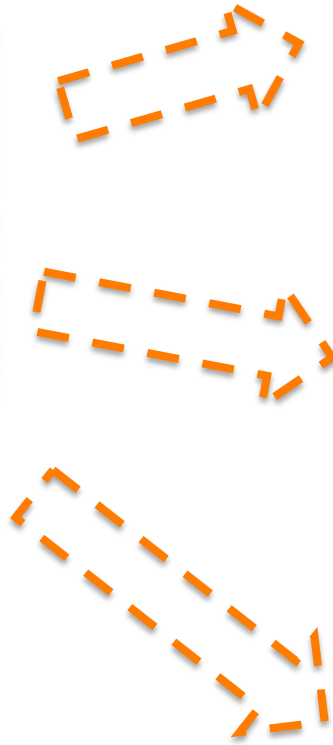
# Collaboration Tools



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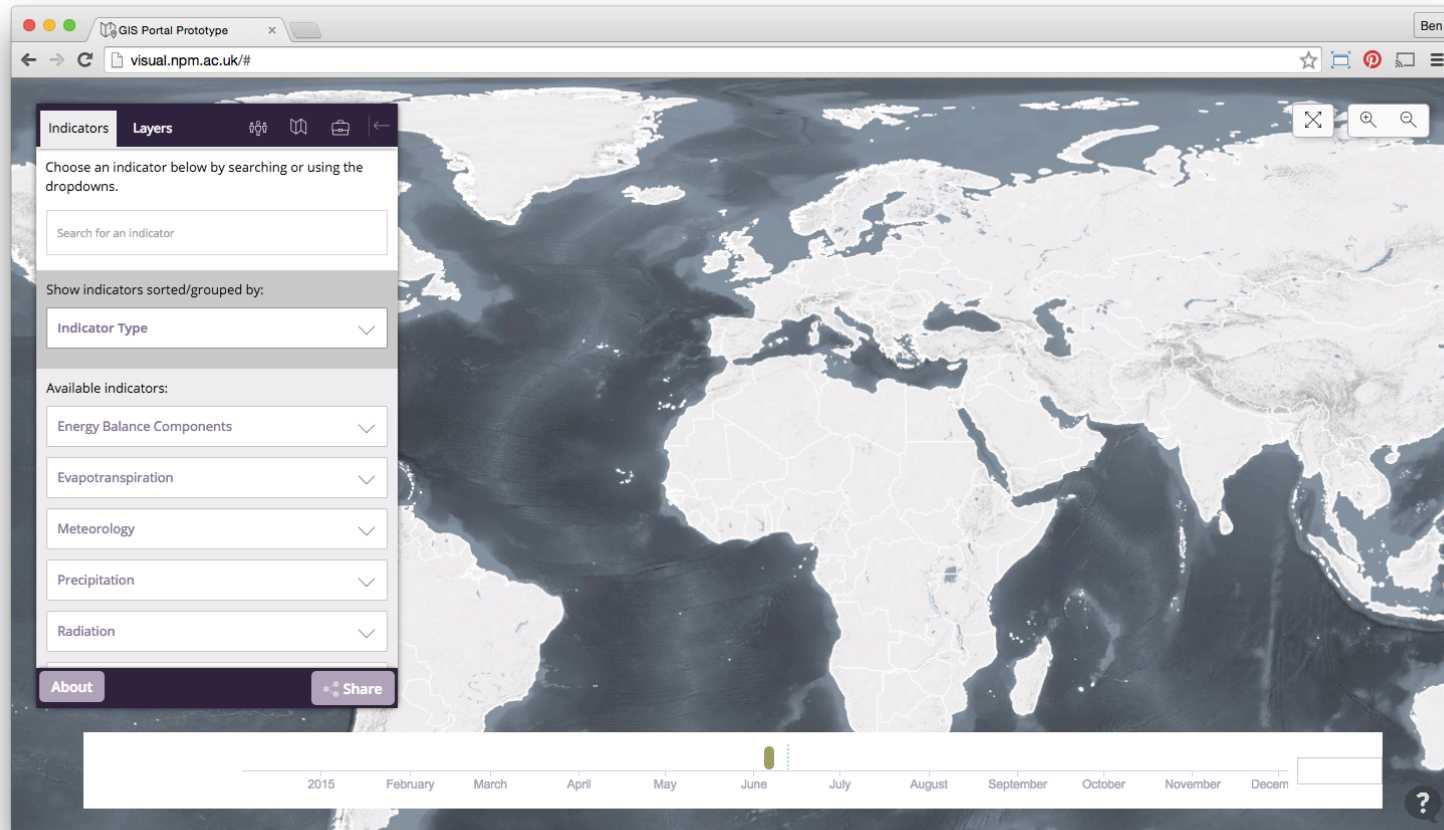eartH2Observe

# Collaboration Tools

The GIS Portal Collaboration Tools is intended to solve this issue

- Each attendee at a collaboration session has their own instance of the GIS portal

- Attendees connect to a virtual room

- Every user interaction the presenter has with the portal is replicated in the attendees' browser

- Event details and essential data are sent to the server

- The server broadcasts the event details to the attendees

- The attendees browser performs the same event mirroring the presenter
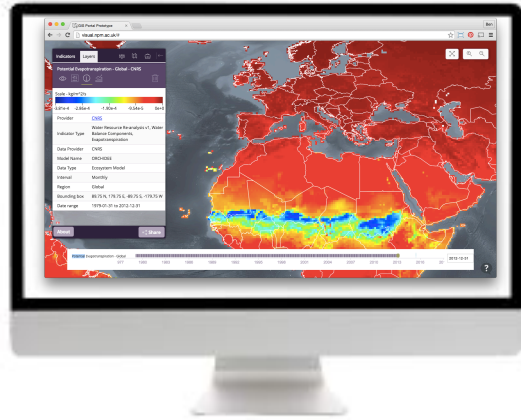
## Websockets
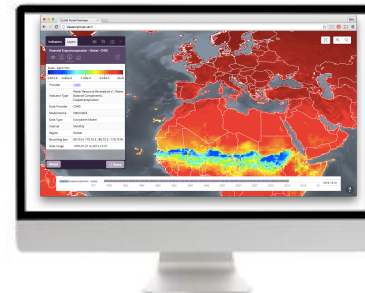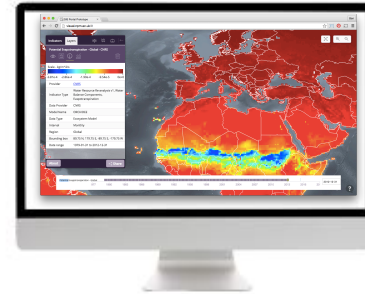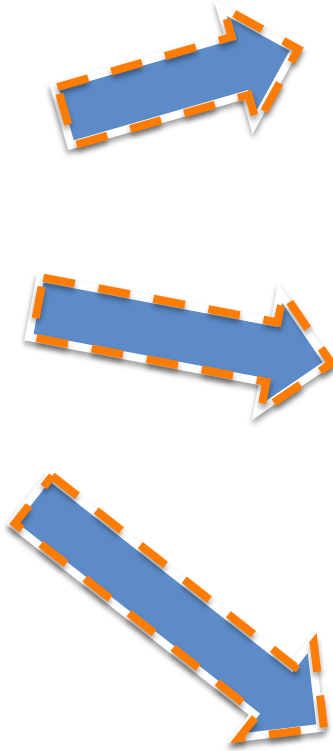Two way communication over a single connection

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# Collaboration Tools

Current Developments & Future Plans

- WIP at present, so extend it to cover every single event that happens

- Make it possible to record sessions, and replay the recording

- Add text chat

- Add voice and video chat using WebRTC

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# Thank you

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