The Application of INSPIRE Principles in the LIFE+ Project WIZ

Gaia Checcucci, Bernardo Mazzanti, Isabella Bonamini, Lucia Fiumi
Autorità di Bacino del Fiume Arno

WIZ una scelta comune

LIFE 09 ENV/IT/000056

WIZ - WaterIZe spatial planning

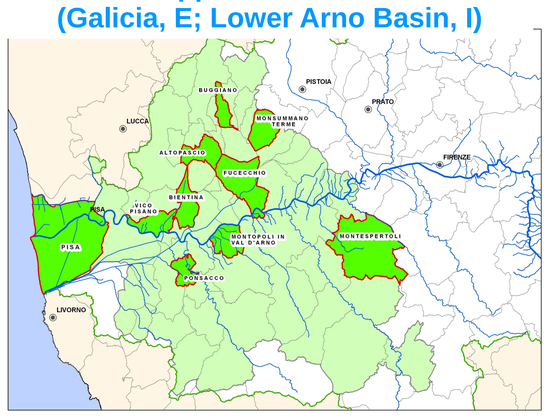
WIZ - **WaterIZe spatial planning: encompass future drinkwater management conditions to adapt to climate change** is the innovative demonstration project that paves the way for including future drinking water availability in today's spatial (and life) planning. It is a vast environmental project, partially funded by the European LIFE+ Programme, to be carried out mainly in Tuscany by Acque Spa, Ingegnerie Toscane Srl and the Autorità di Bacino del Fiume Arno (Fundación Instituto Tecnológico de Galicia will also carried out by WIZ in Spain).

Data needs

Due the need of wide and detailed territorial data analysis, to be developed in a cooperative work between subject with a very different background of knowledge, it has been clear recognized from every partner that the **application of INSPIRE principles** were not only mandatory but a big opportunity in order to achieve the project's goals.

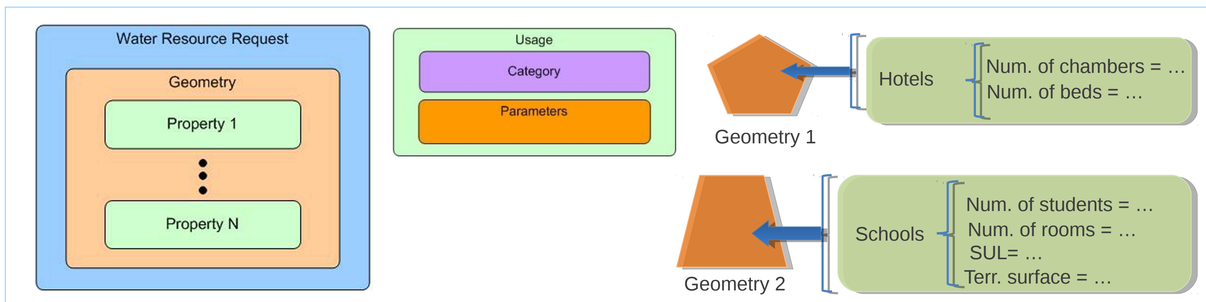
Heterogeneuous data sources
Very different quality levels
Lack of data informations

Application sites
(Galicia, E; Lower Arno Basin, I)



Data typologies

- Available water resources
- Water supply and water distribution networks
- Urban infrstructures
- Forecast of future climate variables, according IPCC scenarios



Data organisation example

Project's goal

The WIZ project specifically addresses the integration of **future water management** conditions with spatial development and planning of the built environment, by taking the impact of climate change into account.
Climate change is expected to increase both the frequency and the severity of extremes of heat and drought, rain and flooding.

Water stress is rising in southern Europe and is expected to continue as a result of climate change, increasing tourism, and irrigation (linked to rising temperatures and droughts).
Indeed, not only climate change, but also urban sprawl is increasing the pressure on ecosystems in surrounding areas.
The aim of WIZ is to achieve the following main targets:

- to incorporate **long-term analysis of drinking water management** into urban spatial planning by creating a platform for local authorities to be involved in decision-making processes and the exchange of information for informed decisions;
- to contribute to the integration of the European Framework for **Adapting to Climate Change** (COM(2009) 147) in other local and EU regulations, particularly in relation to future water management conditions;
- to increase **public participation and awareness** by involving citizens and businesses (particularly SMEs) in water governance;
- to create a **network of European projects** within the Water supply and sanitation Technology Platform (WssTP) and increase transnational co-operation regarding water management.

Finally, WIZ is primarily directed towards **public decision-making processes**, in order to increase both the policy-makers' ability to evaluate the potential impact of their choices, and their responsiveness to citizens. The level of institutionalization of the WIZ method in local policy-planning is the major measure of success.

INSPIRE principles application

According to INSPIRE principles, data analysis efforts took into account the **need of combination of different level and scale**, ranging from global circulation models to local water distribution networks.
Keeping the collected data and information sets **readibily in an easy way** made possibile a deeper involvment of all stakeholders in the analysis and verification phases.
Availability of data, constraints of application related to scale limits, mandatory conditions for their use: all this set of information has been shared between project's partners through the constantly verified creation of **INSPIRE compliance metadata information**.

Impact on Spatial Data Infrastructure

Challenging items

- Database architecture choice
- Tools for easily and effective information sharing
- Choice of solutions for web services and data dissemination

Use of standardized data formats

Production of INSPIRE compliant metadata

Use of different networks for information sharing
Inclusion of a vast stakeholders' community

Use of Open Source GIS tools
OGC compliant Web mapping service

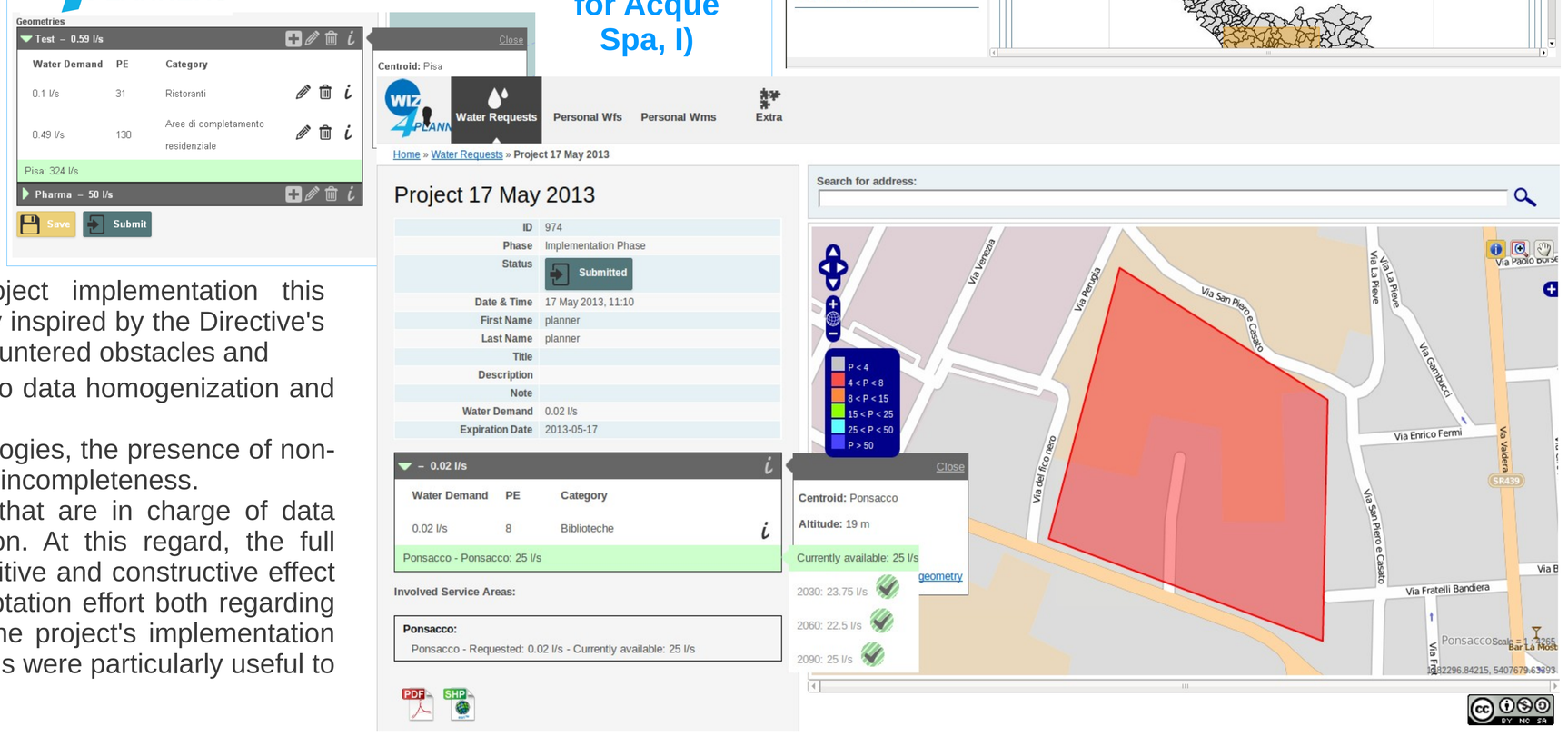
WIZ 4ALL

Mobile application for data dissemination (implemented in Galicia, E)

Conoce tu disponibilidad de agua

WIZ 4PLANNERS

Web platform (implemented for Acque Spa, I)



Open problems

During the project implementation this approach, totally inspired by the Directive's provisions, encountered obstacles and delays that were mainly due to a diffused resistance to data homogenization and data sharing practices.
It was above all, caused by the use of existing technologies, the presence of non-comliant or unshared data formats and by data lack or incompleteness.
It is often the case that the technical departments that are in charge of data supply and processing have a very small dimension. At this regard, the full implementation of the Directive's principles had a positive and constructive effect in the long run, even if it implied a considerable adaptation effort both regarding tools updating and general comprehension. During the project's implementation phases the meetings with the municipalities' technicians were particularly useful to underline this positive aspect.