Interreg

Cofinanziato dall'Unione Europea

Italia – Svizzera | Italie – Suisse | Italien – Schweiz

WINCA4TI

Water Interactions *with* Nature, Climate and Agriculture *for* Ticino

Repubblica e Cantone Ticino
Dipartimento del territorio

EST TICINO VILLORESI
CONSORZIO DI BONIFICA

Scuola universitaria professionale della Svizzera italiana
SUPSI

UNIVERSITÀ DI PAVIA

DIPARTIMENTO INGEGNERIA CIVILE ARCHITETTURA
DICAr

IRSA CNR
Istituto di Ricerca sulle Acque
CONSIGLIO NAZIONALE DELLE RICERCHE

Fondazione Patrimonio Ca' Granda

Graziano Maino
WINCA4TI Citizen Science Facilitation Team
www.pares.it

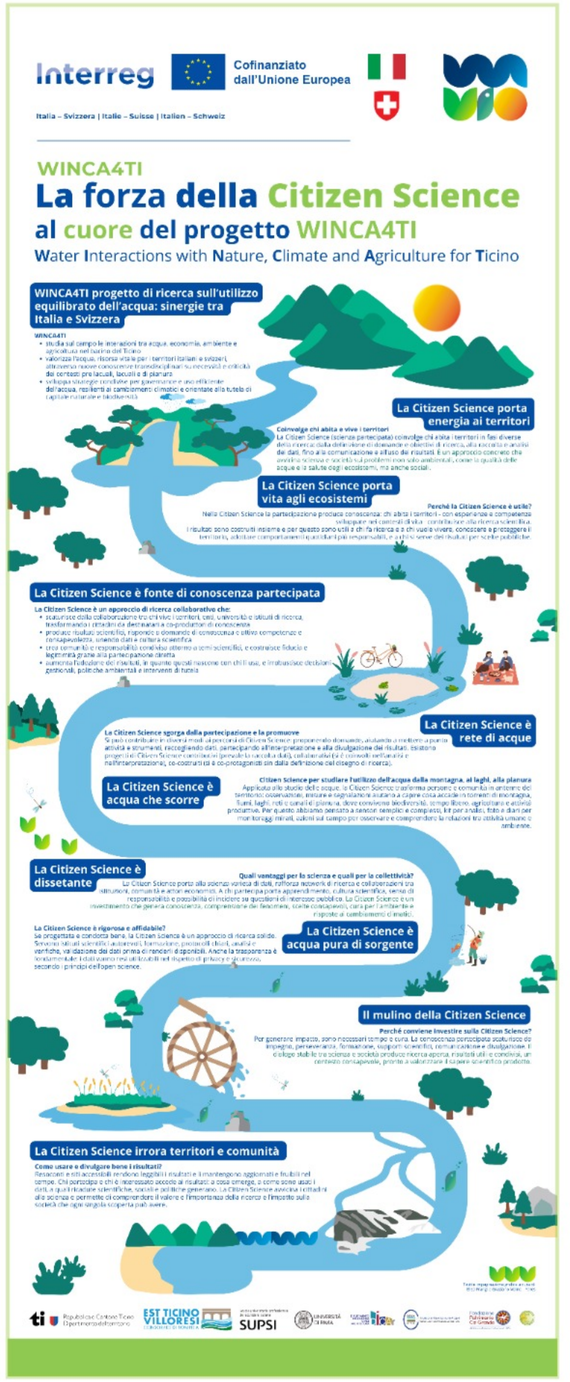
The Power of **Citizen Science (CS)** at the Heart of the **WINCA4TI Project**

Citizen Science to study water use from the mountains to the lakes and the plains

In water research, Citizen Science turns people and communities into local researchers.

Their observations, measurements and reports help to understand what happens in mountain streams, rivers, lakes, canals and lowland water networks. These are places where biodiversity, leisure, agriculture and productive activities exist side by side.

For this reason, we use simple and advanced sensors, testing kits, photos, field diaries and field activities to observe and better understand the relationship between human activities and the environment.



WINCA4TI - Focus

Reinforce the protection and preservation of nature, biodiversity, and green infrastructure, including in urban areas, and reduce all forms of pollution.

Water **I**nteractions *with* **N**ature, **C**limate and **A**gricolture *for* **T**icino

WINCA4TI Interreg Project

The Ticino river basin area

WINCA4TI - Issues

- **Less water availability in the coming decades**
- **Climate change: extreme events (floods and droughts)**

- **Water for pre-lakes areas:** ecosystems and local communities, civic uses, and economic activities
- **Water for lakes areas:** ecosystems and local communities, tourism, and leisure
- **Water for the Po Valley:** ecosystems and local communities, civic uses, agriculture, and industry

WINCA4TI - Partners

The Republic and Canton of Ticino is the southernmost canton of the Swiss Confederation and its only Italian-speaking one.
It holds full cantonal sovereignty, with its own Parliament, Government, and judicial system, operating within the federal framework of Switzerland.
Its capital is Bellinzona, and it encompasses a territory of approximately 2,812 km² with a population of around 350,000 inhabitants.

East Ticino Villoresi Consortium (ETVilloresi) is an Italian public body based in Lombardy, tracing its origins to the construction of the Villoresi Canal, inaugurated in 1884. It covers a territory of nearly 4,000 km² across seven provinces — Milan, Monza, Lecco, Como, Varese, Pavia, and Lodi — bounded by the Ticino, Adda, Lambro, and Po rivers. Its responsibilities span irrigation water distribution, land drainage, soil protection, and groundwater recharge, managing a network that includes the Villoresi Canal and the historic Milanese Navigli.

SUPSI – University of Applied Sciences and Arts of Southern Switzerland
SUPSI operates under the supervision of the Canton of Ticino (Italian-speaking part of Switzerland). It offers bachelor's, master's, and continuing education programmes across a range of professional fields, including engineering, architecture, health, social work, arts, and business. SUPSI combines applied research with professional training, maintaining close ties with the regional economy and public institutions.

DICAR – Department of Civil Engineering and Architecture, University of Pavia
It brings together expertise in structural engineering, hydraulics, geotechnics, urban planning, and architectural design, combining teaching and research activities. The department is active in applied research projects, including collaborations with public bodies and territorial institutions on infrastructure, water management, and built environment topics.

IRSA – Water Research Institute (CNR – National Research Council of Italy)
IRSA is a research institute of the Italian National Research Council (CNR), established in 1968. It conducts basic and applied research on water resource management, aquatic ecosystems, and wastewater treatment technologies, operating across multiple sites in northern, central, and southern Italy.

Fondazione Patrimonio Ca' Granda (Ca' Granda Heritage Foundation) is a non-profit foundation established to support the scientific research of the Policlinico di Milano. Its mission is to generate income through the sustainable management of this agri-environmental heritage and channel the proceeds into medical research. The patrimony includes 85 million square metres of land, 100 farmsteads, churches, and an abbey.

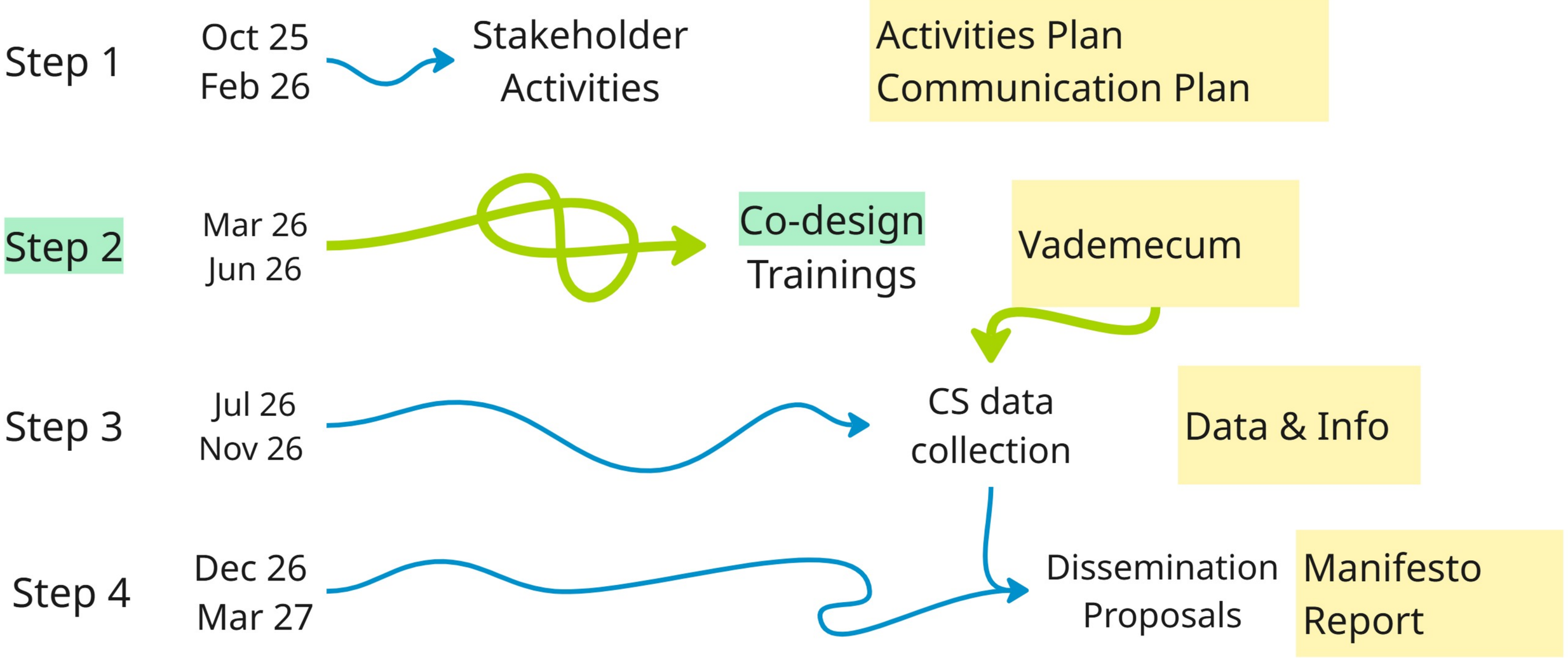
The Fondazione Bolle di Magadino manages the Bolle di Magadino nature reserve.. It brings together the Canton, the Swiss Confederation, Pro Natura, and WWF. Its mandate covers the conservation and enhancement of this internationally recognised wetland, as well as environmental education and the coordination of research and restoration initiatives — including the renaturalisation of the Ticino river delta, completed in 2010.

WINCA4TI - Citizen Science Approach

There are three main approaches to Citizen Science:

1. **Contributory projects**
   Researchers design the project, and citizens mainly contribute by collecting or submitting data.
2. **Collaborative projects**
   Researchers still lead the project, but citizens also help refine methods, analyze data, or share results.
3. **Co-created projects**
   Researchers and citizens work together from the beginning, jointly shaping the questions, methods, and use of results.

WINCA4TI - Steps



WINCA4TI - CS Locations

6 places to test Citizen Science

- Rold (Milan)
- Unipv (Pavia)
- SUPSI (Mendrisio - CH)
- CNR (Pallanza)
- CNR (Vogogna)
- Laveno (Varese)

WINCA4TI - CS Co-design Activities

Places	Main stakeholders	Activities
Rold (Milan)	**Citizens** and **Farmer**	Complex and simple sensors for soil moisture
Unipv (Pavia)	**Citizens** and **Farmer**	Simple sensors for soil moisture
SUPSI (Mendrisio - CH)	**Sailors** and **Citizens**	Complex sensors and kit water analysis
CNR (Pallanza)	**Sailors** and **Citizens**	Kit water analysis and Secchi disk
CNR (Vogogna)	**Farmer** and **Citizens**	Kit water analysis and Secchi disk
Laveno (Varese)	**Sailors** and **Citizens**	Kit water analysis and Secchi disk

WINCA4TI Interreg Project

WINCA4TI - CS Co-design Activities

On **Friday 17 April 2026**, from **5:00 pm to 6:30 pm**, the WINCA4TI project opens the doors to its first in-person workshop, inviting citizens, technicians, and stakeholders to actively participate in the co-design of Citizen Science initiatives (participatory design of strategies).
The event will take place at **Rold Academy**, in the **MIND** spaces, **viale Decumano 41, Milan**. **MM1 Rho-Fieramilano**.
To register: **https://etvilloresi.it/attivita/progetti/progetto-winca4ti-2/**

"WINCA4TI – The Strength of Citizen Science: Water and Territory"

As part of the Interreg I-Ch WINCA4TI – *Water Interactions with Nature, Climate and Agriculture for Ticino* project, which aims to analyse the interactions between water, nature, climate and agriculture in the Ticino hydrological basin, within a context shaped by climate change, the project partnership has launched a participatory process involving citizens and stakeholders to jointly define strategies for the sustainable use of water resources in the Ticino basin, promoting a paradigm shift in water management: recognising water as a common good, ensuring its availability and quality, preventing scarcity and pollution, and encouraging circular economy models. The sustainable management of water resources therefore becomes a key element in protecting the environment and biodiversity.

From April to July 2026, several in-person co-design workshops on Citizen Science (participatory science) will take place throughout the Ticino area, across Italy and Switzerland. The aim is to identify challenges and opportunities for the transnational territory of the Ticino hydrological basin in relation to shared management policies.

The first workshop will focus in particular on knowledge of the multifunctionality of water, awareness of water use, and plant water requirements.
What is a plant's water requirement? How is it measured? Who can help measure it? Why is it useful to know this information?

This meeting is not a conference: it is an open workshop designed to inform participants and build together strategies for the protection and enhancement of water resources in our area. After an introductory welcome session to break the ice, centred on the theme of Water, the WINCA4TI project and the Citizen Science activities planned will be presented. In particular, during this first workshop, participants will be introduced to the use of smart sensors to measure soil moisture in relation to crop water requirements, for the correct and sustainable use of water resources.

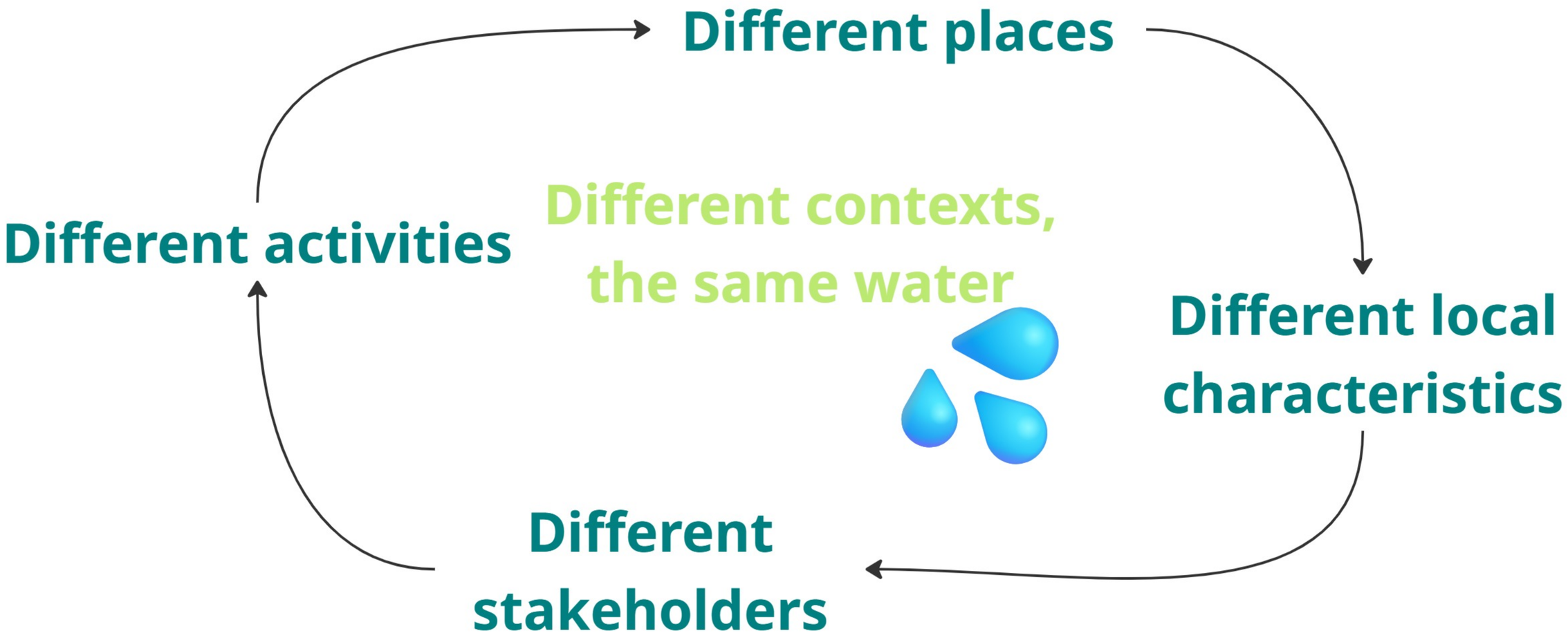
During the workshop, participants will receive free gadgets: smart sensors for measuring soil moisture, which each person will be able to use easily and immediately to measure the water requirements of potted plants, vegetable gardens, home gardens, parks, cultivated fields, and more. By collecting the measured data and sending it to the WINCA4TI project, you will become researchers and an integral part of the project, helping us define shared strategies for the best use of water in order to protect and enhance the area in which we live.

The core of the workshop, which is **free of charge and open to everyone**, will be a collective discussion on water management: a moment in which all participants — citizens, farmers, administrators, researchers, students, and others — will be able to present and share ideas, raise questions, and offer suggestions. At the end, the calendar of upcoming activities will be presented.

WINCA4TI is an **Interreg Italy–Switzerland** project, co-funded by the **European Union**, led by the **Consorzio di Bonifica Est Ticino Villoresi**, and bringing together the **Canton of Ticino – Office for Water Protection and Water Supply**, **SUPSI – University of Applied Sciences and Arts of Southern Switzerland**, the **University of Pavia – Department of Civil Engineering and Architecture (DICAR)**, and **IRSA – Water Research Institute of the National Research Council (CNR)**, as well as the supporting partners **Fondazione Patrimonio Ca' Granda** and **Fondazione Bolle di Magadino**.

The workshop is **FREE OF CHARGE** and will be facilitated by **Graziano Maino of Pares** (**www.pares.it**).

WINCA4TI - CS Activities

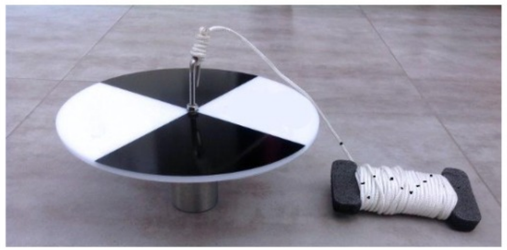


WINCA4TI - CS simple activities

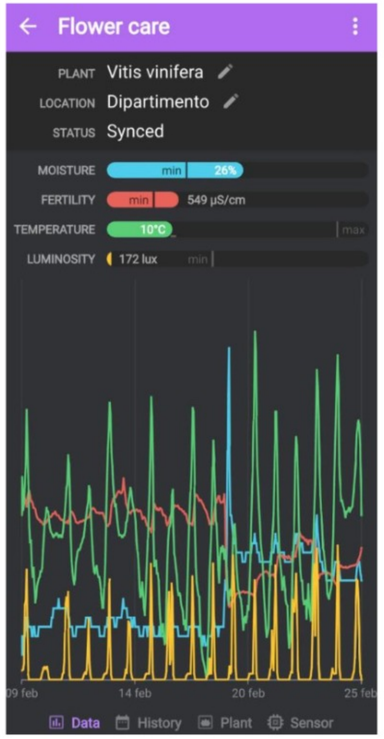
Participatory monitoring, pilot projects, and evaluation processes to develop adaptation strategies

Presence of cyanobacteria in the water
(They are often called blue-green algae)

Small sensors used to monitor temperature, moisture, light levels, and soil fertility, and to collect data and user feedbacks

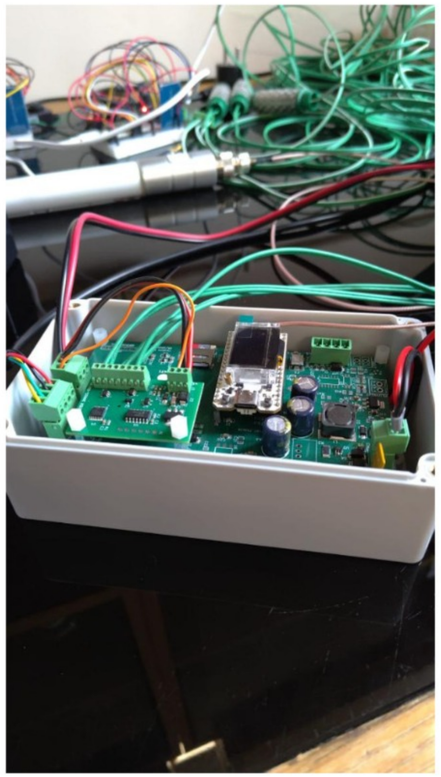


Secchi disk for measuring water transparency



WINCA4TI - Advanced custom-made sensors

Development of a low-cost sensor network for monitoring water flow, soil moisture, and microclimate in agricultural settings



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LoRa™

THE THINGS NETWORK

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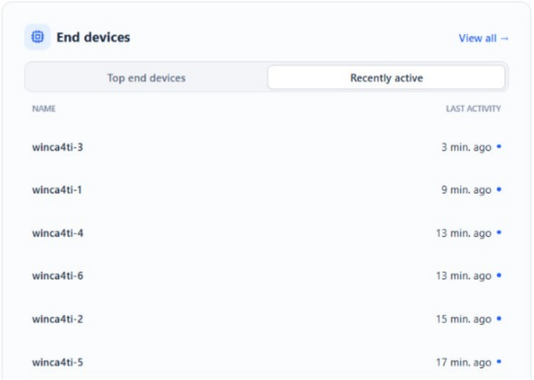
DICAr DIPARTIMENTO INGEGNERIA CIVILE ARCHITETTURA

IRSA CNR



WINCA4TI - CS Learning Focuses

Experiment	Develop practical skills to design and implement Citizen Science initiatives
Engage in dialogue	Interact with key stakeholder groups
Build connections	Build contacts and collaborations Raise visibility
Collect data	Gather data and complementary insights