

PRESENTATION

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ANBI presidency's technical staff

To submit your questions, please visit **www.slido.com** and enter **#ADAConf23**

An aerial photograph of a lush green landscape. In the foreground, there are several rows of a vineyard, with the vines planted in neat, parallel lines on a gentle slope. To the left of the vineyard is a flat, green field. In the middle ground, a dense line of trees separates the fields from a body of water, likely a lake or a wide river. In the background, a large, hazy mountain rises against a clear blue sky. The overall scene is peaceful and scenic, typical of a rural Italian landscape.

The work, challenges, and opportunities for Italian Agricultural Water Boards

A. Battilani

One hundred + one years at the service of territories and agriculture



CONGRESSO NAZIONALE DELLE BONIFICHE

100
1922-2022

ROMA - SAN DONÀ DI PIAVE



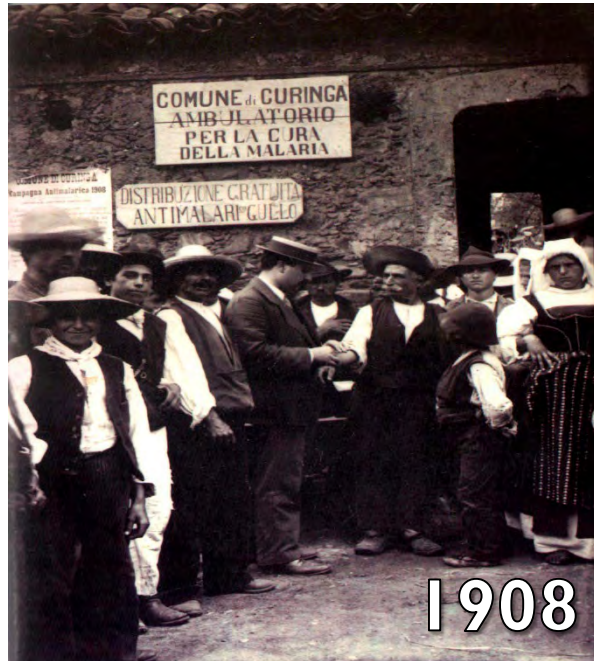
Acqua, risorsa di vita e
di coesione sociale

SETTIMANA NAZIONALE
DELLA BONIFICA E DELLA IRRIGAZIONE

13 - 21 Maggio 2023



TOUCHES OF HISTORY



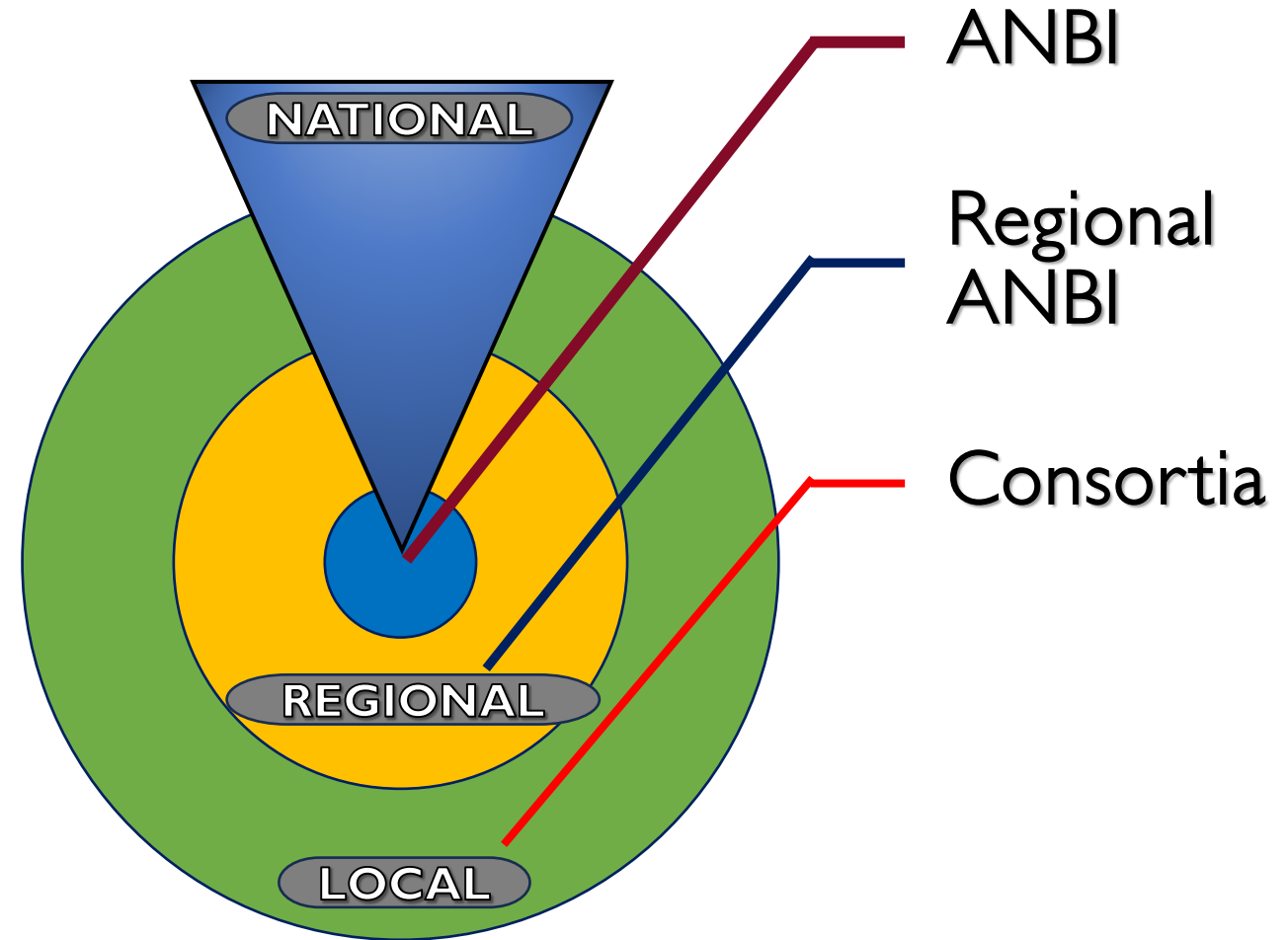
A productive, safe
and sustainable
agroecosystem where
had insisted marshes
and malaric fevers

ANBI STRUCTURE

ANBI is the umbrella association grouping and coordinating 142 Land Reclamation Consortia/Agricultural Water Boards (Consorti di Bonifica).

ANBI members, are public bodies with an associative and self-governing structure, which administrative boards are democratically elected by farmers and citizens.

Regional ANBI are legal entities grouping the Consortia of an administrative region, referring to the same Regional Government.



ANBI INFRASTRUCTURES

ANBI operate over an area of 19.230.649 hectares (about 64 percent of the total national area) involving nearly the totality of the most productive agricultural and industrial areas.

The main water infrastructures are as follows:

- 231.044 km of canals;
- 16.686 km of river and sea banks;
- 22.839 weirs and barrages for flood lamination;
- 960 hydro-geological defense waterworks (with a total flow rate of 4949 mc/sec.)

The drainage area is of 9.592.611 ha (8.094.837 ha gravity; 1.497.774 ha mechanical lift).

- 2,244 irrigation works (576 barrages; 1,668 pumping stations)
- 914 irrigation storage basins and reservoirs
- 54 dams (with a total capacity of about 980,000,000 m³) converted to multipurpose uses (irrigation, civil, industrial, hydroelectric, etc.).
- 161,411 ha irrigated with reclaimed water.

The area served by irrigation works is of 3.500.000 ha (1.741.891 ha open canals; 1.422.033 ha pressurized networks).

TASKS

The hydraulic and agri-food safety of the territory: a heritage built over centuries that must be defended, maintained, improved



GOVERNANCE OF
AGRICULTURAL WATERS
AND INTERACTION
WITH URBAN
AGGLOMERATIONS



MULTIFUNCTIONAL
CAPITALIZATION OF
RESOURCES



RESPONSIBLE AND
SUSTAINABLE
MANAGEMENT OF
WATER RESOURCES

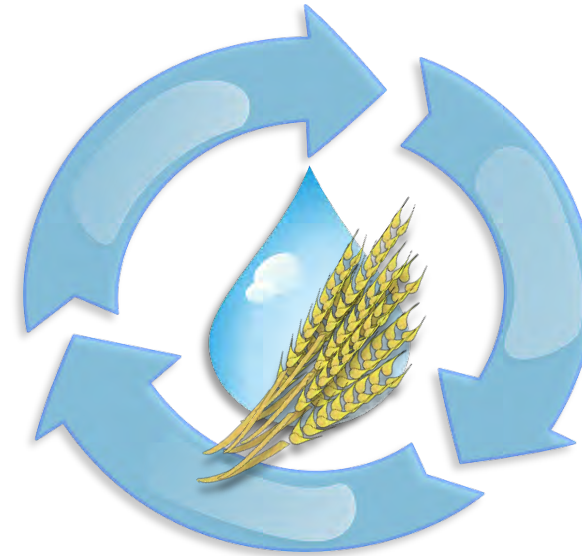


NEW OR ENHANCED
INFRASTRUCTURES FOR
GOVERNANCE AND
AGAINST SALT INTRUSION

TASKS

Water removal of urban and industrial agglomerations and the challenge of reuse

The increasingly close interconnection between cities and countryside stress the hydraulic network created to remove rainwater from the fields and not to dispose continuous flow rates from sealed soils and urban areas.



Network modernization, monitoring and defense against pollution, besides water reuse, are among ANBI' tasks.

TASKS

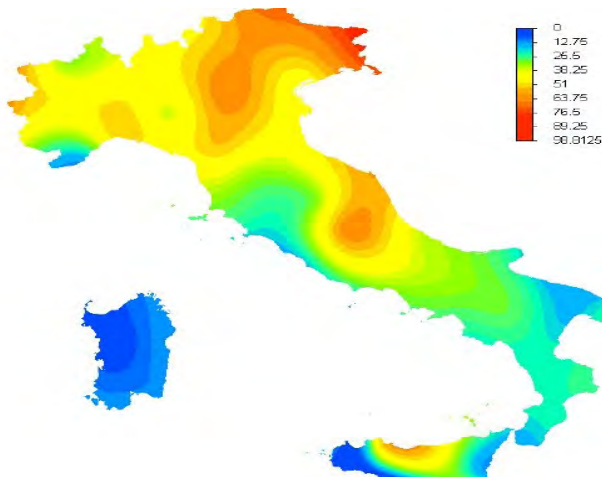
Enhanced hydraulic defense and drainage

Multi-year losses of crops productivity, cropland and essential infrastructures. Impacting on food supply chains and insurances.



TASKS

Soil defense and fight against erosion



“Among European countries, Italy pays the highest bill with an annual loss of **619 million euros and 33% of its total agricultural area affected by serious erosion.** The damage due to the loss of habitats and biodiversity cannot be assessed“

ANBI associates intervene for the defense of the territory with hundreds projects of mountain hydraulic engineering.

TASKS

Decarbonize water supply and irrigation

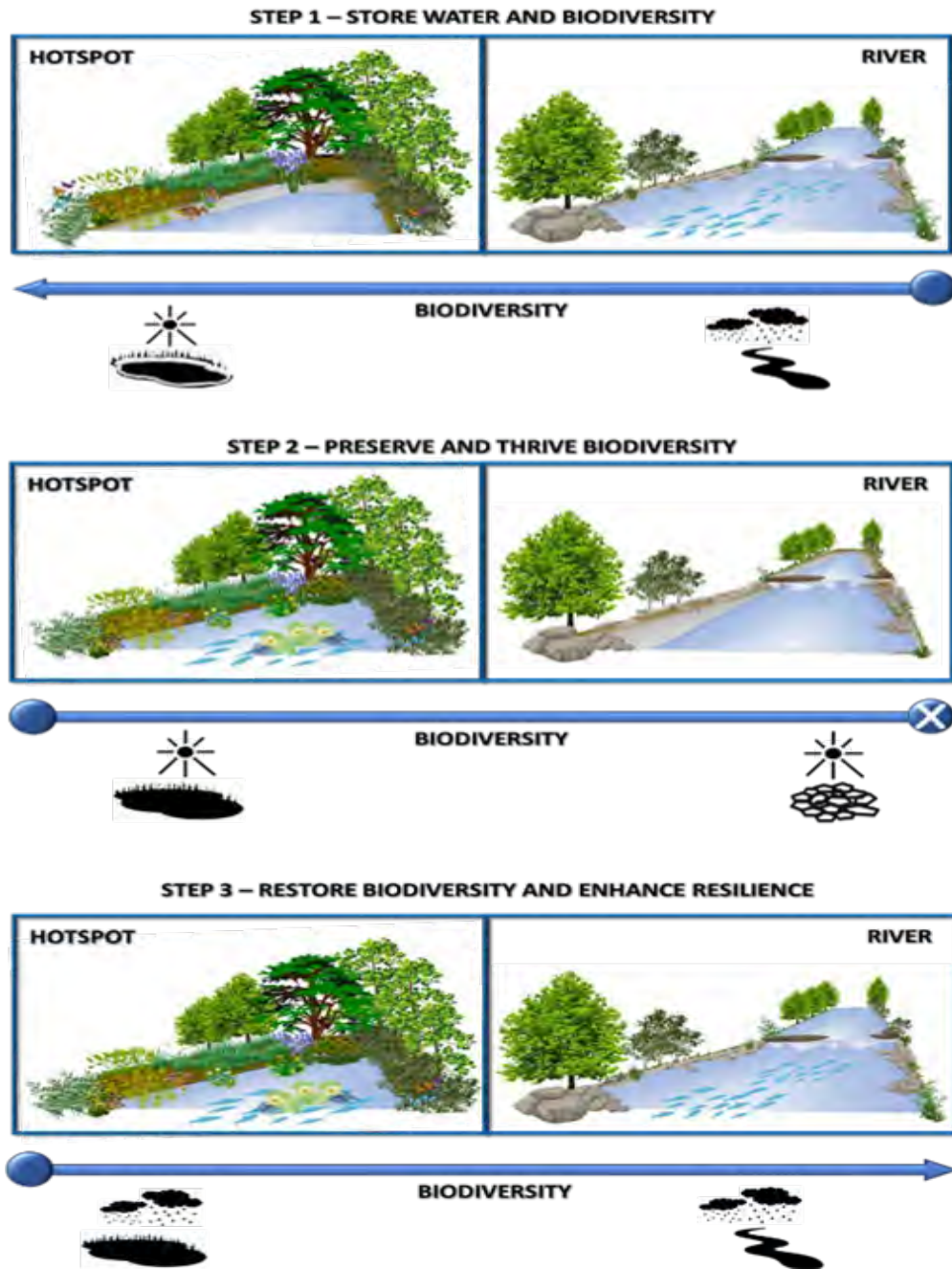


OVER 400 RENEWABLE ENERGY PLANTS

600.000.000 KWh PRODUCED PER YEAR



CARBON FARMING: Hydraulic infrastructures at the core of renewables energy production to offset consumption, and acting as enabler for regenerative irrigated agriculture to produce more biomasses, increase and preserve soil organic matter and the storage of CO₂



TASKS

NBS & BIODIVERSITY HOTSPOTS

Multi-functional water and biodiversity storage through widespread implementation of nature based solutions

Small and Medium Basins

N. 116 existing storage basins for a total volume of 1,095,527,200 m³

n. 245 small/medium basins to be built for a total volume of capacità totale 686,787,021 m³, and an investment of € 3,641,646,916

Job Creation: 17,464 new permanent positions

Preventing hydrogeological risks

Increasing water availability for civil uses

Agriculture

245 new storage basins allow to collect +65% rainwater

+ 452,099 hectares made available to crop high value cash crops (fruits and veggies)

Landscape and biodiversity

Sustainable Tourism

New wetlands

Green Energy:

- Reducing emissions of about 630,000 tonnes/year CO₂ equivalent, comparable to more than 1,300 hectares of forest



Green Energy

FLOATING PHOTOVOLTAIC

n. 361 new installations producing 1,306 mln di MWh with a basin's surface coverage of 30%

HYDROELECTRIC

n. 80 plants producing yearly 7,620 MWh

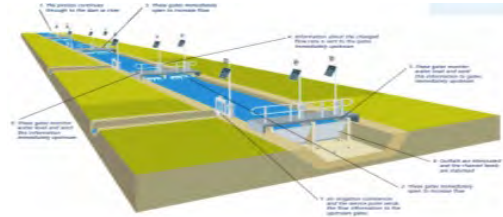
Of about 1,314 mln di MWh/year can be produced per year.

Satisfying the needs of 1864000 persons, equal to 466.000 families.



TASKS

Tailoring innovation on the territories



SMART GOVERNANCE



GREEN ENGINEERING



BIOREMEDIATION &
FITODEPURATION



HYDROMORPHOLOGY
RESTORATION



SAFEGUARD AND RESTORATION OF
NATURAL AREAS

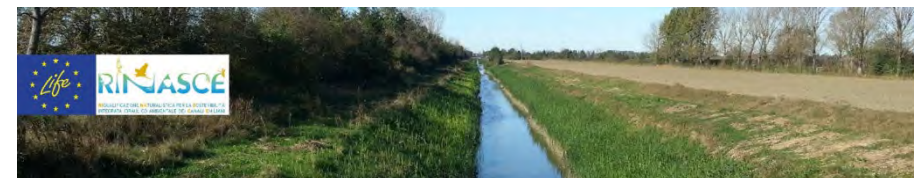


14 EU projects

27 national, regional, etc. Projects

Hundreds of infrastructure
improvement / modernisation
projects

Collaborations with national and
international universities and
research centers





TASKS



WFD, UWWWD, IED, ZPA, Sludges, Biodiversity, Nature Rest.

CAP 2021-27

WATER REUSE

SOIL STRATEGY

CIRCULAR ECONOMY

F2F

Directorate-General for Health and Food Safety (DG SANTE)

HORIZON EUROPE

PPP Rev., Nature Restoration, Water Price
DECOUPLING/DISENTANGLING

FIT for 55

WEFE - WATER/ENERGY/FOOD/ECOSYSTEMS

AGRICULTURE COMPETITIVENESS

PROTECTION OF WATER BODIES
AND SUSTAINABILITY



MANAGE THE TRANSITION



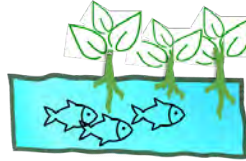
Each action is an essential enabler for the others. When taken individually they can be ineffective or even counterproductive

| ACTION | DIFFICULTY | TIME NEEDED |
|---|-------------|-------------|
| Assess long-term effectiveness of restoration efforts | HIGH | +++ |
| CBA & impact analysis based on extended LCA | HIGH | +++ |
| Assess trade-offs & drawbacks | HIGH | +++ |
| Modernise infrastructures | MEDIUM | ++ |
| Novel infrastructures | HIGH | +++ |
| Novel water governance | MEDIUM | + |
| Drought resistant crops | HIGH | +++ |
| Less water demanding crops | MEDIUM/HIGH | ++ |
| Novel crop husbandry | MEDIUM/HIGH | ++ |
| Land degradation stop | MEDIUM/HIGH | ++ |
| Uptake agroecological practices | MEDIUM/HIGH | ++ |
| Dietary change | HIGH | +++ |
| Food trading systems reform | HIGH | +++ |
| Stop food wastage | MEDIUM | + |

PROVIDE EFFECTIVE SUPPORT TO FARMERS



Compliance with EU and National regulations



Water quality and riverine biodiversity

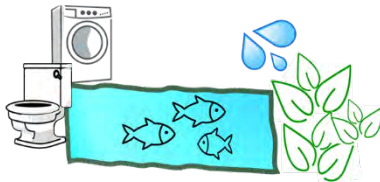
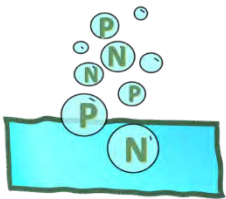


Decarbonisation and creation of new carbon sinks



Biodiversity increase and pollinators safeguard

NUTRIENTS REMOVAL OR RECOVERY



WATER REUSE



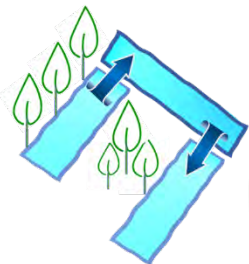
RENATURING AGRICULTURAL LANDSCAPE

NEW REGENERATED SOIL AND SOIL HEALTH ENHANCEMENT



WATER STORAGE, FLOOD BUFFERING, INFILTRATION

INTERCONNECTED NBSS, ECOLOGICAL CORRIDORS




NATURE RESTORATION LAW

A flagship regulation proposal forcing Member States towards a prompt and extensive enforcement of EGD strategies voluntary actions speeding up EGD schedule.

IRRIGATION MANAGEMENT DECISION SUPPORT SYSTEM & PLATFORM

CRUSCOTTO IRRIGUO di IrriFrame

Il cruscotto permette di tenere sotto controllo le esigenze irrigue di tutti gli appezzamenti registrati e di accedere con pochi click alle diverse funzionalità del sistema

 Aziende/Appezzamenti

[Creazione guidata nuovo appezzamento/coltura >](#)

 **CONSORZIO BONIFICA RENANA** [Assistenza >](#)

Az. Agr. Bau >

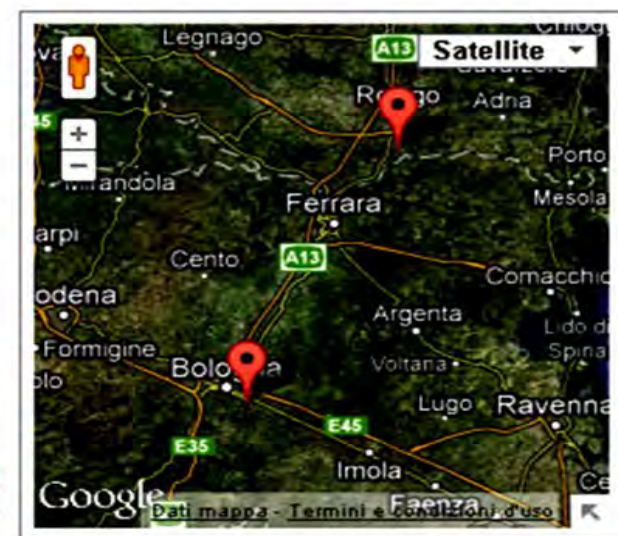
| | Clicca sul link per il menù | Descr | consumo oggi (mm) | data prevista irrigazione | volume irriguo (mm) | durata irrigazione (ore:minuti) | |
|---|-----------------------------|---------|-------------------|---------------------------|---------------------|---------------------------------|---|
| 1 | ALBICOCCO | Cortile | 3,96 | Oggi | 16,2 | 2:02 | Dettaglio > Ho irrigato > |

 **CONSORZIO DI BONIFICA ADIGE PO** [Assistenza >](#)

Azienda non assegnata

| | Clicca sul link per il menù | Descr | consumo oggi (mm) | data prevista irrigazione | volume irriguo (mm) | durata irrigazione (ore:minuti) | |
|---|-----------------------------|-------|-------------------|---------------------------|---------------------|---------------------------------|---|
| 2 | ALBICOCCO | orto | 4,06 | Oggi | 16,3 | 13:00 | Dettaglio > Ho irrigato > |

 Localizzazione appezzamenti



CROP

Water irrigation depth

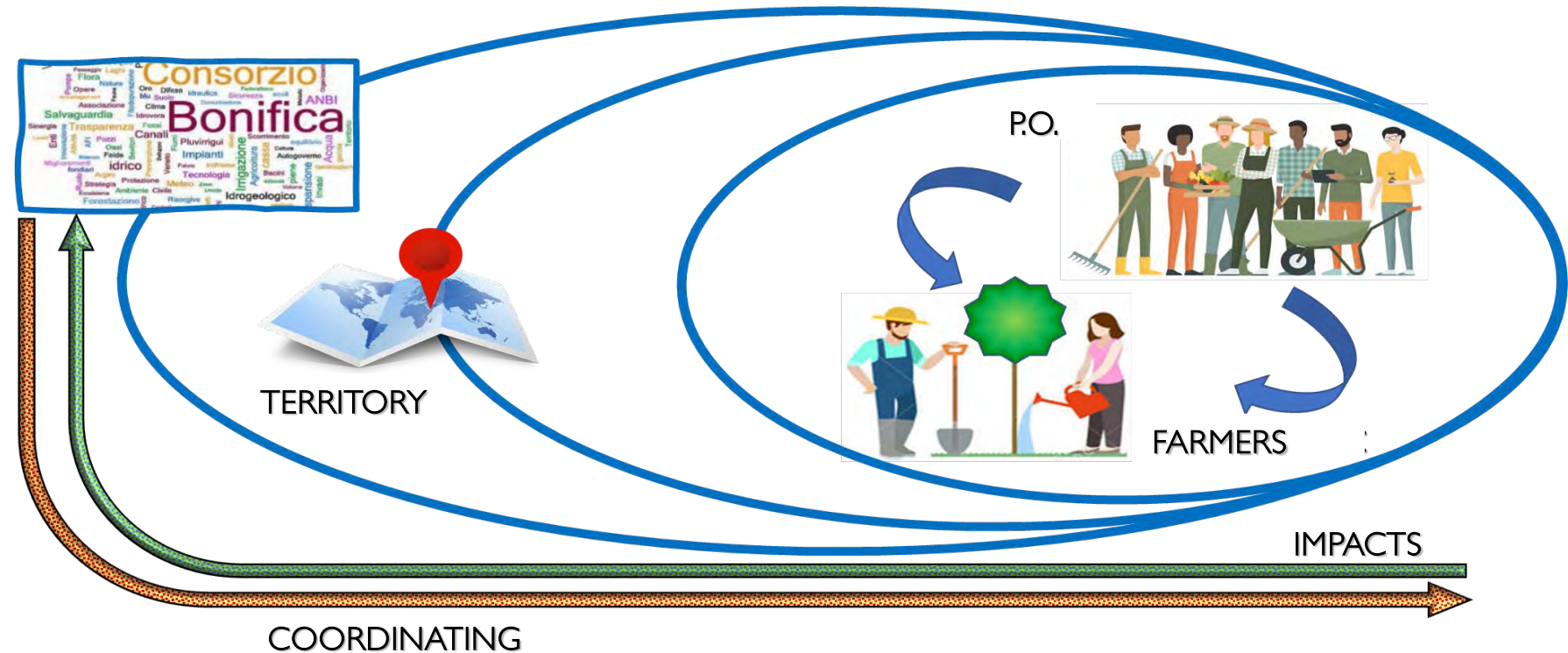
Next irrigation day

Predicted evapotranspiration

CONFIRMATION

CERTIFIED SUSTAINABILITY

Private certification of the sustainable use of water and qualitative and quantitative protection of the water resource.



TASKS

Education, training, capacity building

Thousands of students from Primary Schools to University, Farmers, Practitioners, Decision Makers, are trained, educated and informed every year about the water/energy/food/environment themes



AB
EMILIA ROMAGNA

AB
VENETO
UNIONE REGIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

AB
TOSCANA
UNIONE REGIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

AB
LAZIO
UNIONE REGIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

AB
ABRUZZO

AB
CALABRIA
UNIONE REGIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

AB
PUGLIA
UNIONE REGIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

AB
FVG
ASSOCIAZIONE NAZIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

AB
CAMPANIA

AB
PIEMONTE
ASSOCIAZIONE REGIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

AB
LOMBARDIA
ASSOCIAZIONE REGIONALE CONSORZI GESTIONE
E TUTELA DEL TERRITORIO E ACQUE IRRIGUE

TASKS

Training by demonstration



SOCIOECONOMIC IMPACTS



VALUE OF 1 hm³ FOR THE PRIMARY SECTOR

4.000.000 € AGRICULTURAL PRODUCTION

270 Ha CULTIVATED LAND

56.920.000 CAPITAL LOSS

153 JOB POSITIONS

ITALY 2022 - DROUGHT IMPACTS

Lost 30% of yields – up to 45% of the forages (of about 10% of the National agricultural production)
& multi-year damages to permanent crops

Salinisation of coastal areas (soils and watertables)

Food price for consumers +11% in July (up to +15% on peak periods at the end of the year)

Hydropower production -75% & Stop of energy plants (no cooling)

Public hygiene problems (poor drainage in urban and periurban areas)

Environmental damages (to be assessed)