

Dams & Territories

Chambery
26 January 2023



Socio-environmental survey for the evaluation of the relationship between dam owners and host territories

ITCOLD WG

Benefits and problems associated with the presence of artificial reservoirs in the territories

Guido Mazzà
Antonella Frigerio



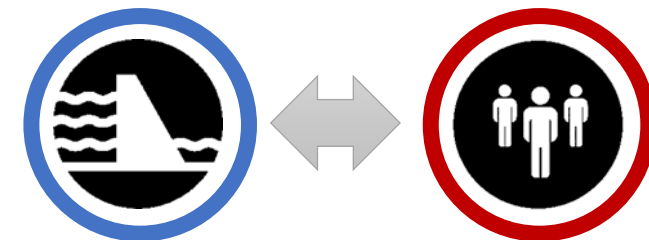
- **Introduction**
- **The activities of the ITCOLD WG**
- **Pro-activity of Dam Owners:
survey at national level**
- **The *Stakeholders'* point of view**
- **Final remarks**



World Commission on Dams (WCD)

***Dams and Development:
a New framework for decision-making***
(Report, 2000)

- ❑ First attempt to carry out a critical analysis on the relationship between dams and territory
- ❑ Main objectives:
 - ✓ **Mitigate** the socio-economic and environmental impact of dams
 - ✓ **Propose** global and integrated strategies based on technical and scientific information, considering the perception of stakeholders on the role played by large dams



DAMS AND DEVELOPMENT

A New Framework for Decision-Making



THE REPORT OF THE WORLD COMMISSION ON DAMS



earthscan
from Routledge

❑ Controversial conclusions of the WCD Report

- ✓ Has the balance between costs and benefits been assessed by the WCD without any bias?
- ✓ Has an objective assessment been made on the proactivity of the dam concessionaires and on the perception of stakeholders affected by the presence of the dams?
- ✓ Were the WCD conclusions applicable to countries with mature technologies?

PROACTIVE



STAKEHOLDER

Survey carried out
at national level to
assess ...



... the **proactivity of dam owners** in promoting the local development of the territory where the infrastructures are present



... the **perception of stakeholders** on the sustainable role (social, economic and environmental) played by dams

ITCOLD WG «Benefits and problems associated with the presence of artificial reservoirs on the territories»

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- ✓ Luigi Doria, Luca Fantacci, Michele Fanelli (consultants)
- ✓ Sara Golessi, Iulca Collevicchio (APER)
- ✓ Giuseppe Donghi (EDISON)
- ✓ Massimiliano Spinato (ENEL)
- ✓ Carlo Malerba (Hydrodata)
- ✓ Cristina Cavicchioli, Elisabetta Garofalo, Antonella Frigerio, Massimo Meghella (RSE)

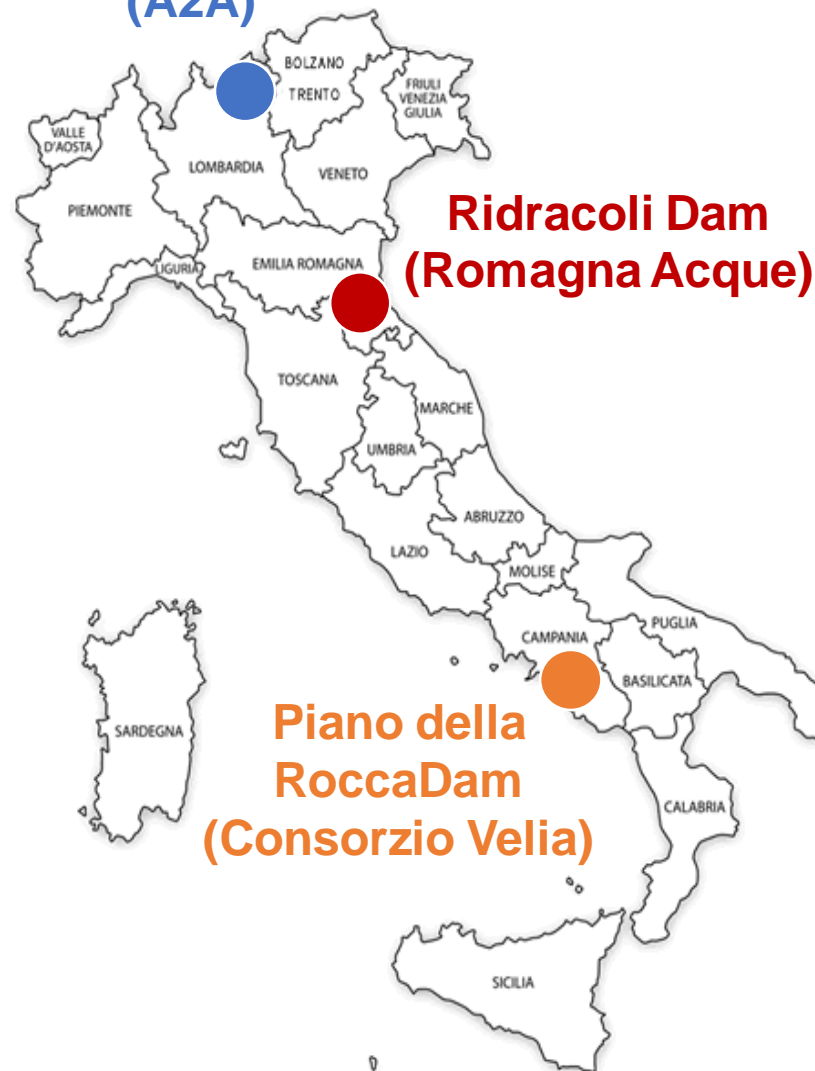


Study of three dam management best practices

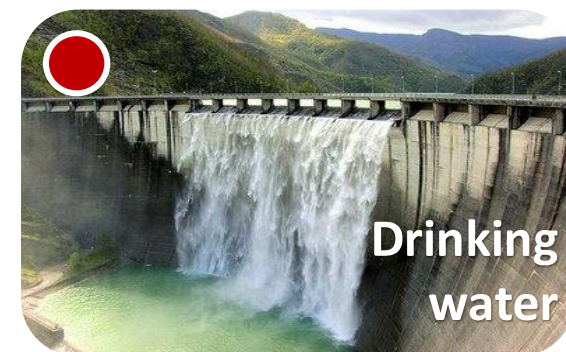


Ministero dello Sviluppo Economico

San Giacomo Dam (A2A)



Ridracoli Dam (Romagna Acque)

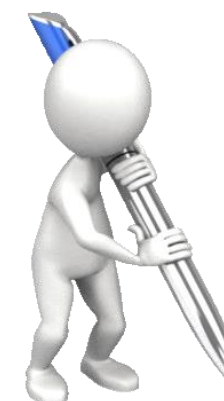




- ❑ The analysis of the three Best Practices made it possible to develop hypotheses on the proactivity of dam owners that needed to be verified at a national level



- ❑ Survey carried out using a questionnaire to measure the pro-activity of dam owners
- ❑ (dam owners model: **9 hydroelectric operators** and **8 water plant operators** were interviewed)



- ☒ Excellent
- ☐ Very good
- ☐ Good
- ☐ Average
- ☐ Poor



- ❑ The dam owners evaluated their own proactivity in three macro areas



Environmental management



Promotion of local development and communication



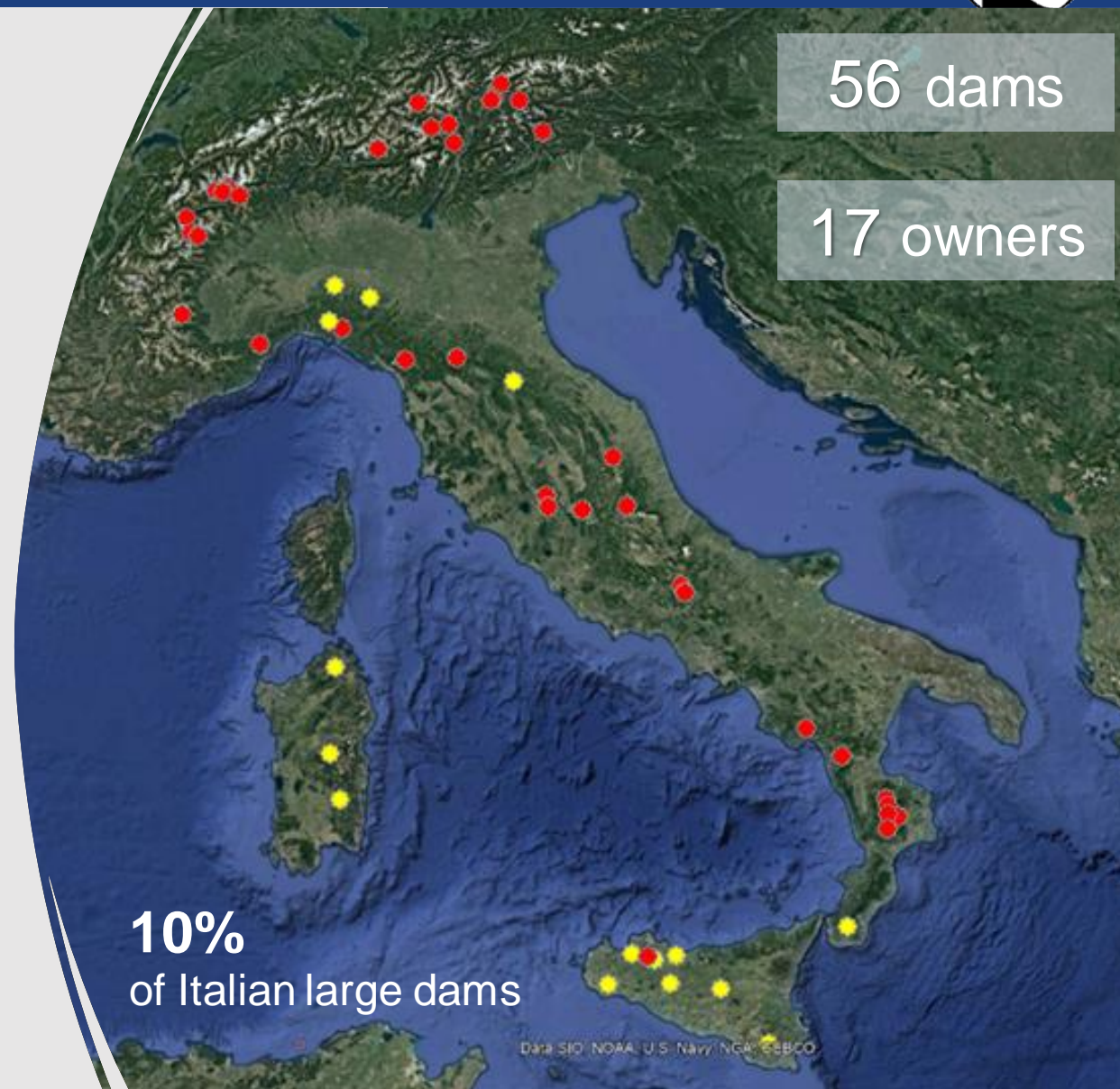
Transfer of monetary and/or water resources



**Statistically
significant
sample**

**41 dams
primarily
intended for
hydroelectric
generation**

**15 dams
primarily
intended for
drinking
water and
irrigation use**

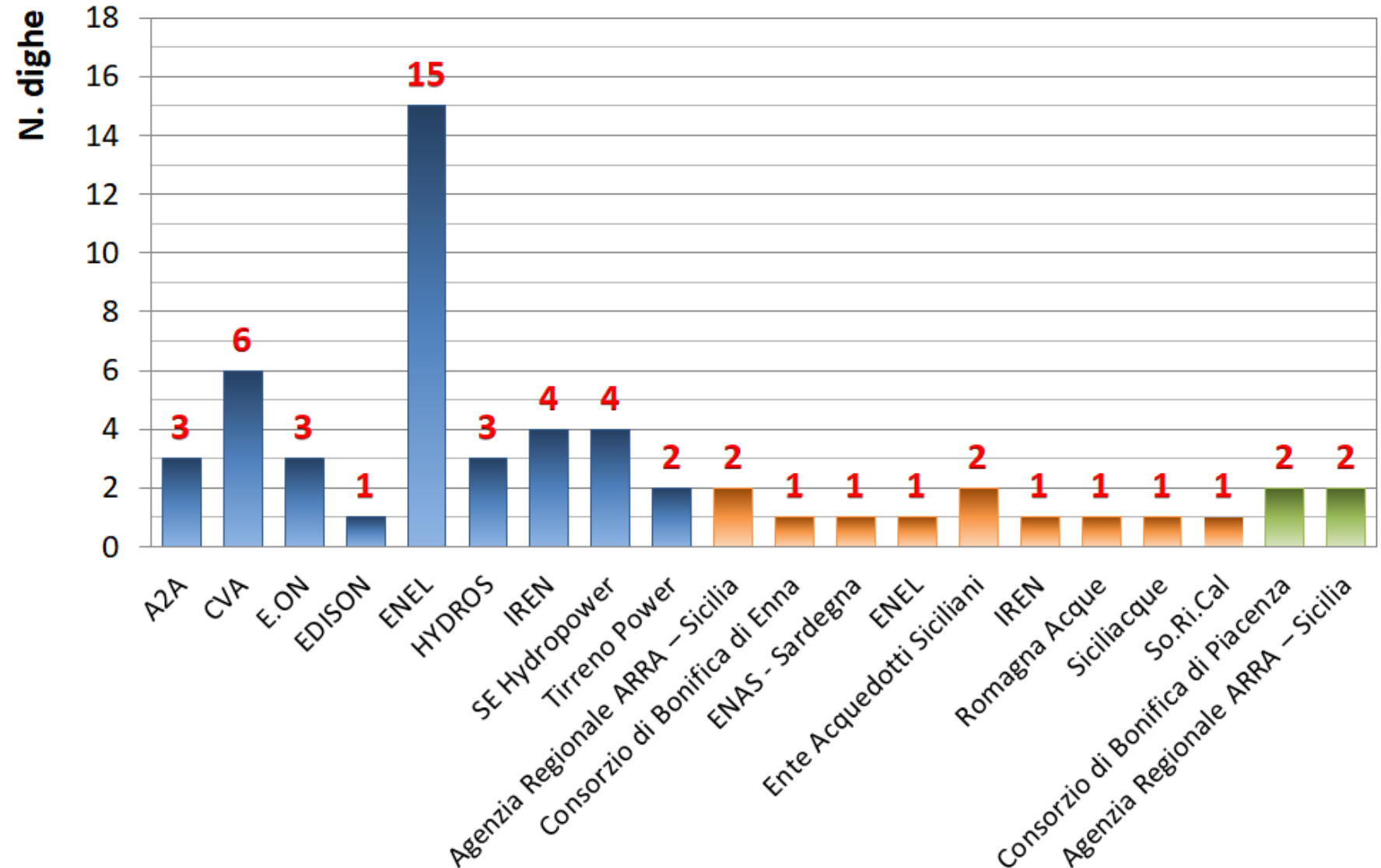


Proactivity of dam owners - Nationwide survey

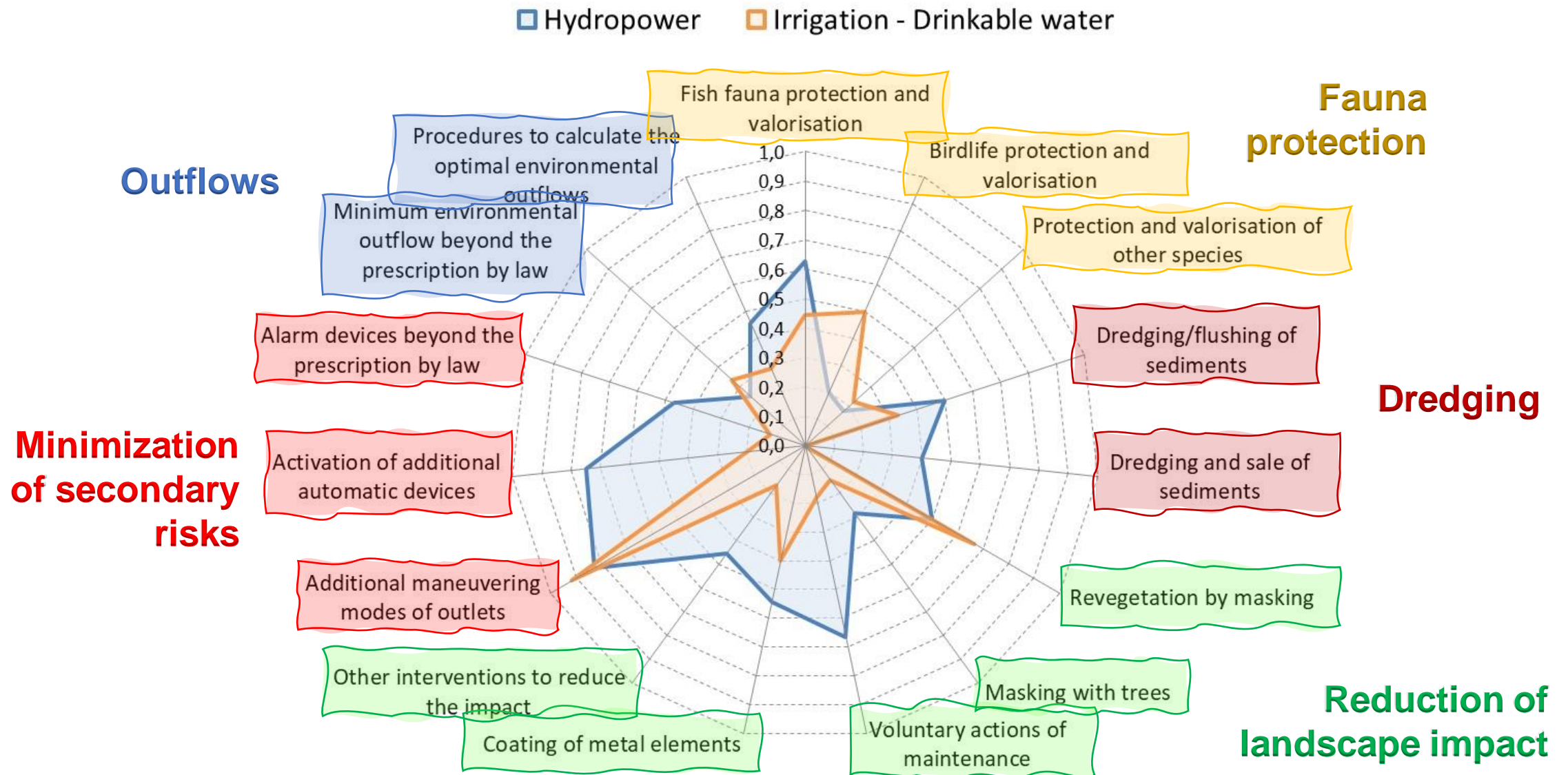
Hydropower
41 dams
9 dam owners

Water supply
11 dam
9 dam owners

Irrigation
4 dams
2 dam owners

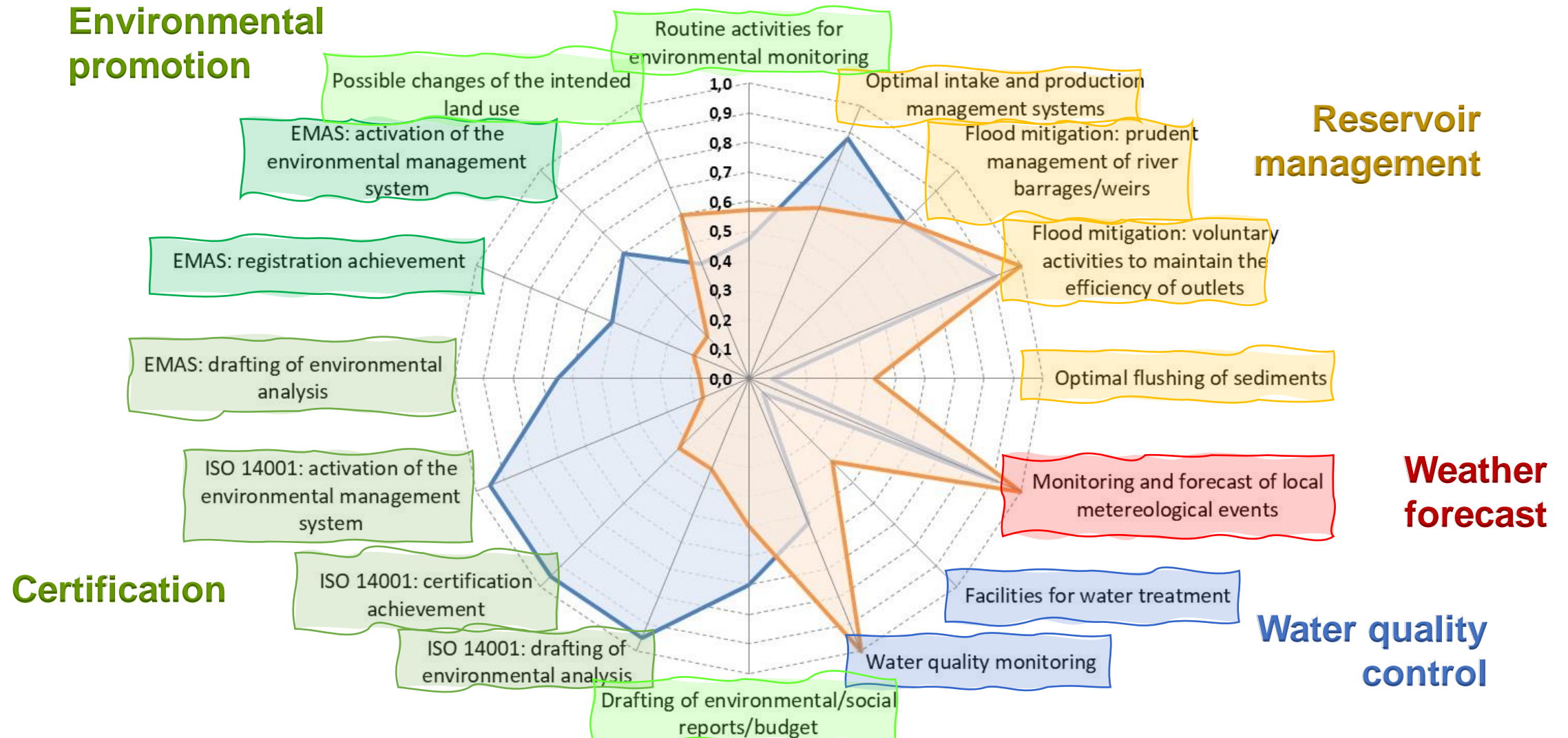


Proactivity of dam owners - Environmental management 1



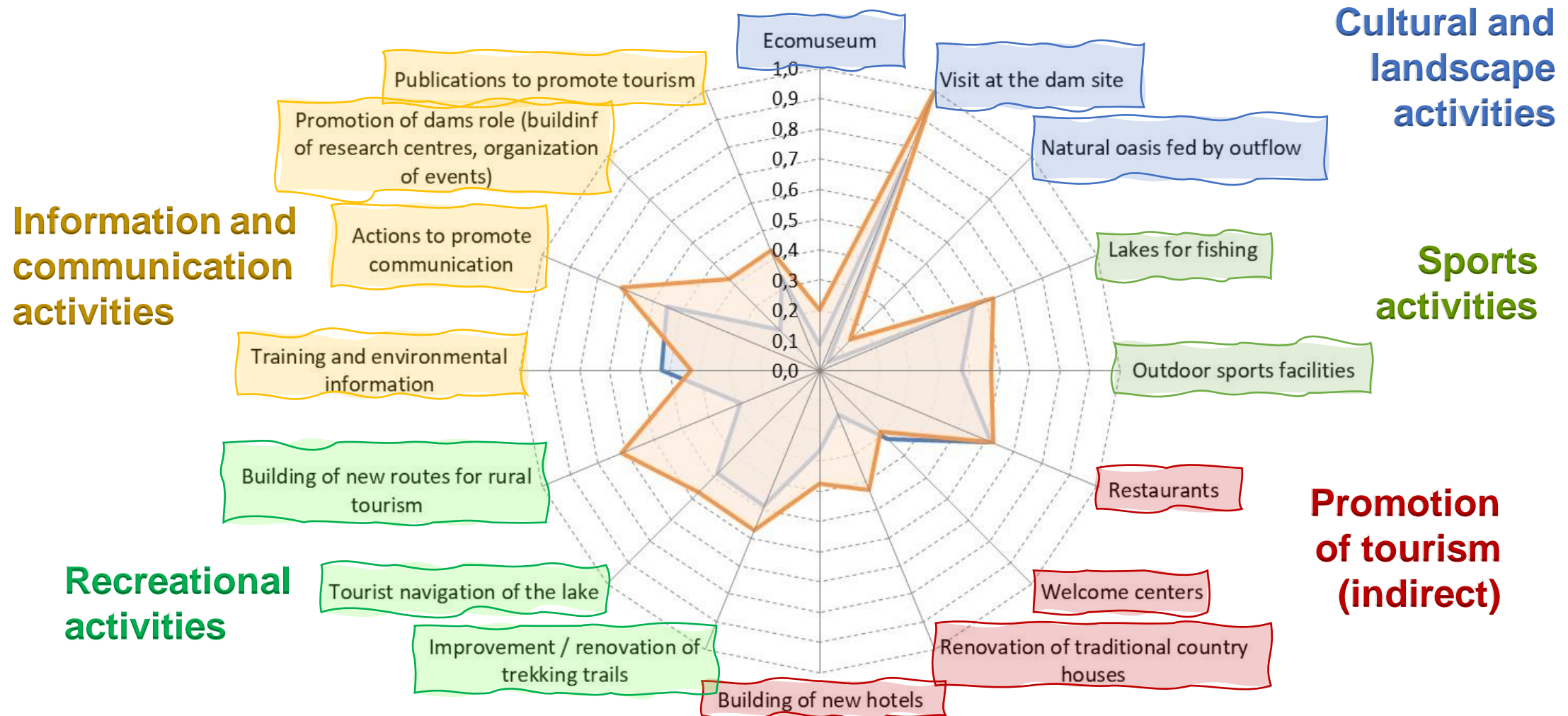
Proactivity of dam owners - Environmental management 2

■ Hydropower ■ Irrigation - Drinkable water



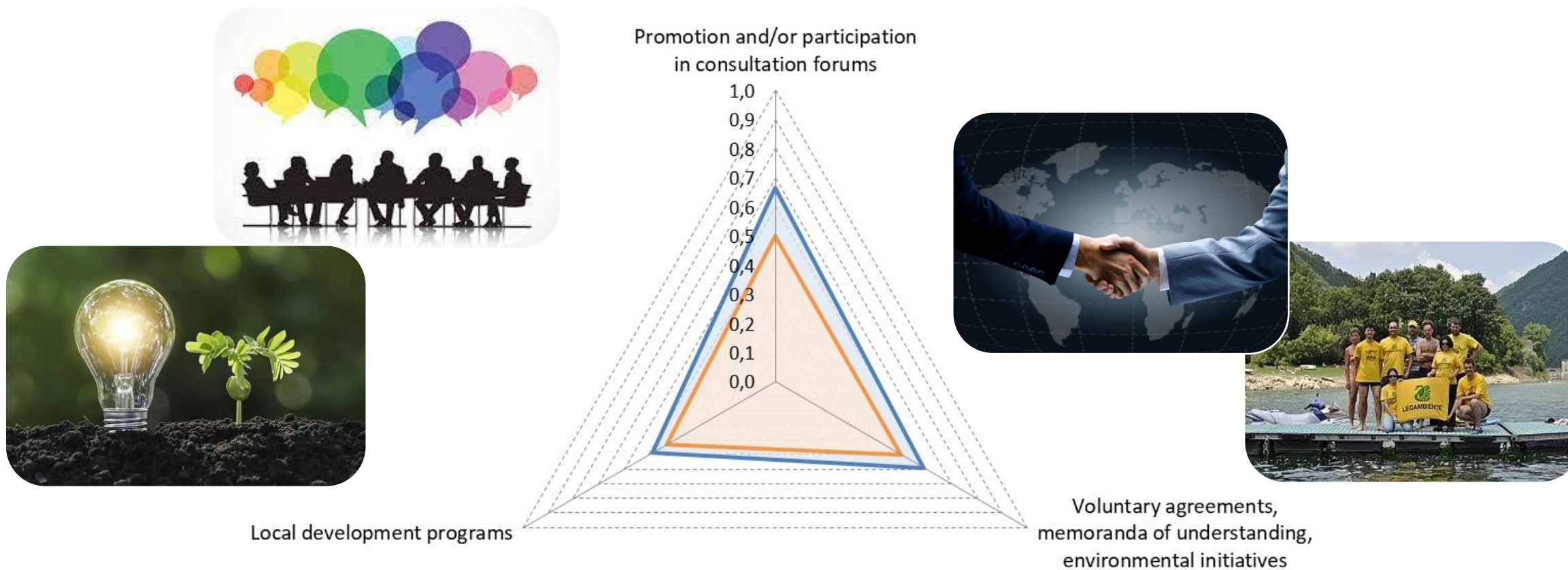
Proactivity of dam owners - Promotion of local development

■ Hydropower
 ■ Irrigation - Drinkable water



Proactivity of dam owners - Promotion of communication

■ Hydropower ■ Irrigation - Drinkable water





The **transfer of economic resources** basically concerned only the hydroelectric dam owners



Water transfers concerned 27/56 dams, in some cases with a % of turnover even higher than 10%



The **direct economic transfer** involved 21/56 dams with a rather variable % of turnover from a few % up to 10%



**What is the
stakeholders' point
of view?**



Perceived role of dams

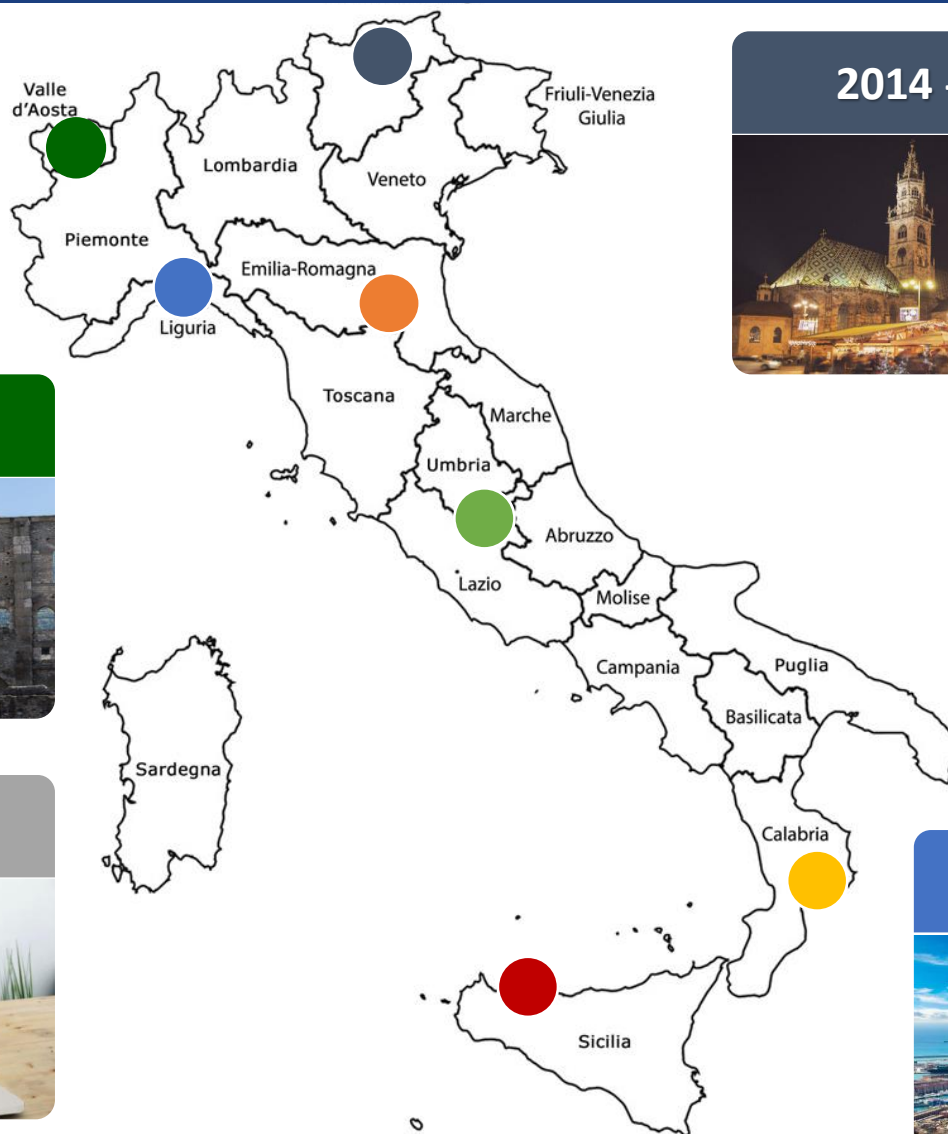


Perception of the dam owners'
pro-activity



Importance of forms of
participation and cooperation

The point of view of the stakeholders



2014 - Bolzano



2015 - Copanello



2022 - Aosta



2016 - Bologna



2017 - Rieti



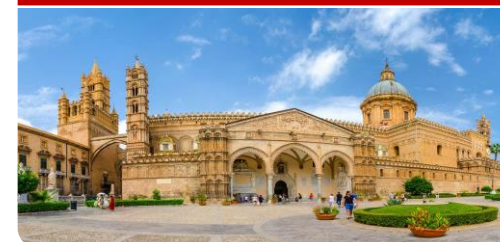
2021 - ONLINE



2018 - Genova



2019 - Palermo



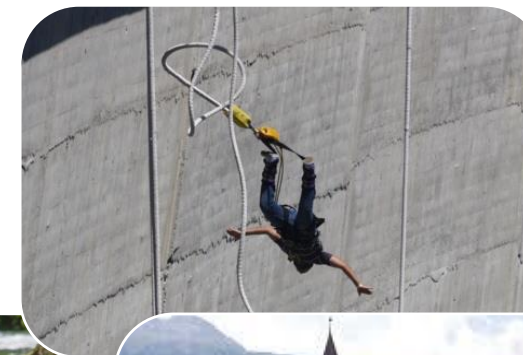


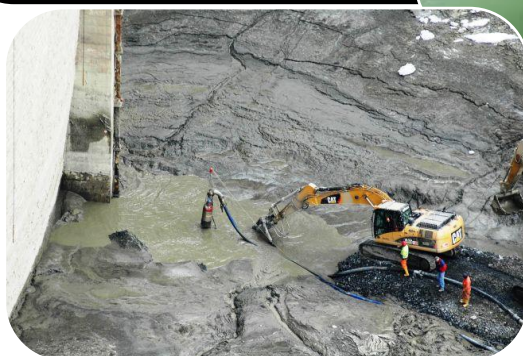
- ❑ Wildlife protection, oases creation, actions to reduce environmental impact, certifications.
- ❑ Optimization of the use of water resources considering different priorities: mitigation of flood risk and water deficit in periods of drought, fire protection, etc.



- ❑ Impact of climate change on water resources availability.
- ❑ Control of water quality during sediment fluctuation defined according to management plans.
- ❑ Site specific calculation of optimal environmental outflows.
- ❑ Control of thermo-peaking and hydro-peaking phenomena.

- ❑ Water releases for the development of the local economy.
- ❑ Consultation processes and monetary compensation of impacts.
- ❑ *Promotion of sports competitions, recreational and educational activities: fishing, mountaineering, rafting, hiking, trekking, sailing, guided visits to dams and power plants, creation of eco-museums, etc.*





- ❑ Importance of multiple uses of water and ancillary services: *stabilization of the electricity grid, water storage, firefighting, etc.*
- ❑ Safe and efficient maintenance of existing structures: *rehabilitation works, risk reduction, dredging of sediments, etc.*
- ❑ Excessive development of mini-hydro.
- ❑ Critical issues related to the non-renewal of concessions.

The Bulletin issues by the ITCOLD WG

ITCOLD
Comitato Nazionale Italiano delle Grandi Dighe

"DIGHE E TERRITORIO"

BENEFICI E PROBLEMI ASSOCIATI ALLA PRESENZA
DEI SERBATOI ARTIFICIALI SUL TERRITORIO
Indagine socio-economica e ambientale sul rapporto "Diga - Territorio"



2021 - ONLINE



Indagine socio-economica e ambientale sul rapporto "diga - territorio"
ITCOLD – Comitato Nazionale Italiano delle Grandi Dighe

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National and international initiatives



- ❑ Task Force “**Dams and Territories**”. **European Club di ICOLD, 2019.**
- ❑ “*Assessment of the relationship between dam owners and host territories*”. **Workshop** organizzato da **SLOCOLD**, 30/01/2020, Ljubljana (Slovenia).
- ❑ “*Dam owners and host territories: a complex relationship. The Italian experience to facilitate their communication*”. **4th Int. Dam World Conference**, 30/09/2021. Lisbona (Portogallo).
- ❑ “**Dighe e Territorio**” conferenza **AIPnD**, 17/09/2021, Sondrio.
- ❑ *Dams and territories: ITCOLD's initiatives to promote proactive dialogue.* “**Sharing water: multi-purpose of reservoirs and innovations**”. Marseille, 30/05/2022.
- ❑ **ITCOLD survey was included in the HYDROPOWER EUROPE PROJECT completed in 2021**





Strong commitment by ITCOLD so that the Dams and Territory workshops can be replicated in other Italian Regions to **foster dialogue between Dam Owners and Stakeholders** for the benefit of local communities and the country's energy transition process.

The main objective is to contribute to **overcoming prejudices** about the role of dams in the territories, to promote the **public acceptability** of these large infrastructures by facilitating the comparison between sometimes different points of view and interests



*This is not a natural landscape... but it is the
result of the correct relationship between
mankind and the territory that hosts him*

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