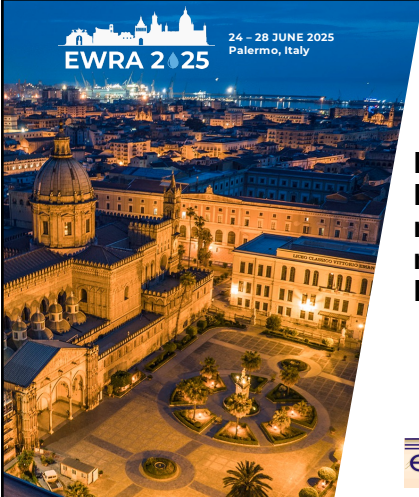




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XIII WORLD CONGRESS
of the European Water Resources Association
New challenges in understanding and managing
water-related risks in a changing environment

Forests and wetlands as Nature-Based Solutions to address resource costs in water management: a case study in the Brenta river area (Northern Italy)

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Introduction and background



- **EU Water Framework Directive, WFD (Directive 2000/60/EC)**: halting deterioration in the status of EU water bodies and achieve good status
- **Nature-based solutions (NBS)** can support WFD effective implementation and link to other policy tools (Kumming Montreal Biodiversity Framework, Nature Restoration Law, Biodiversity Strategy ...)
- **EU Water Resilience Strategy (WRS)**: NBS as a primary approach → restoration, governance and finance gaps/targets




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How to support NBS implementation?



- **Governance, technical and financial barriers** (among others)
- Art. 9 WFD: cost recovery through water pricing → **polluter pays principle**

ERC = Environmental (= damage that water uses impose on the environment/ecosystems) and **Resource** (= foregone opportunities for other uses) **Costs**




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Case study area

Camazzole lake within Middle Brenta river area

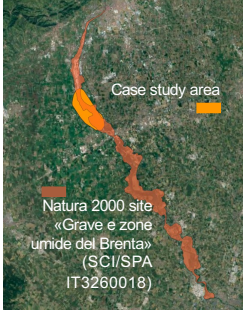




• **56 km** of river

• **2 provinces, 15 municipalities**

• **1 Natura 2000 site "Grave e zone umide della Brenta"** (= riverbed and wetlands)



Case study area

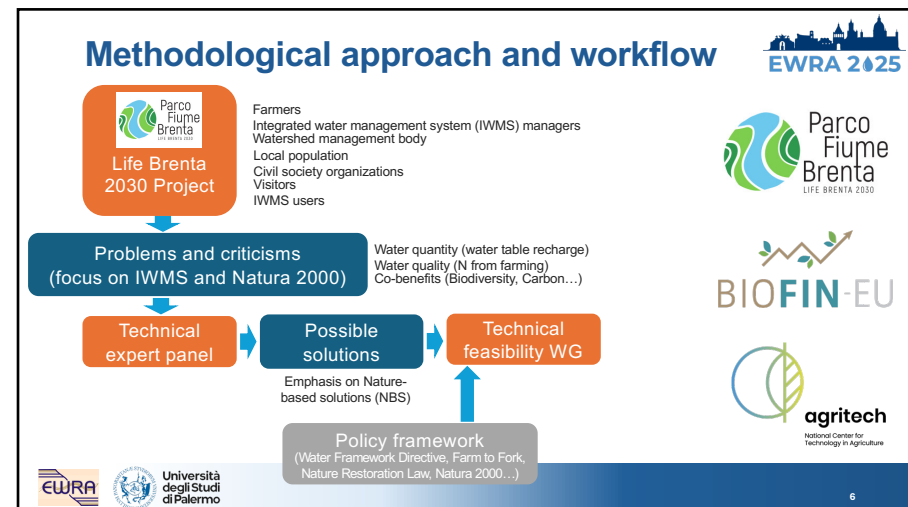
Natura 2000 site
«Grave e zone umide del Brenta»
(SCI/SPA IT3260018)



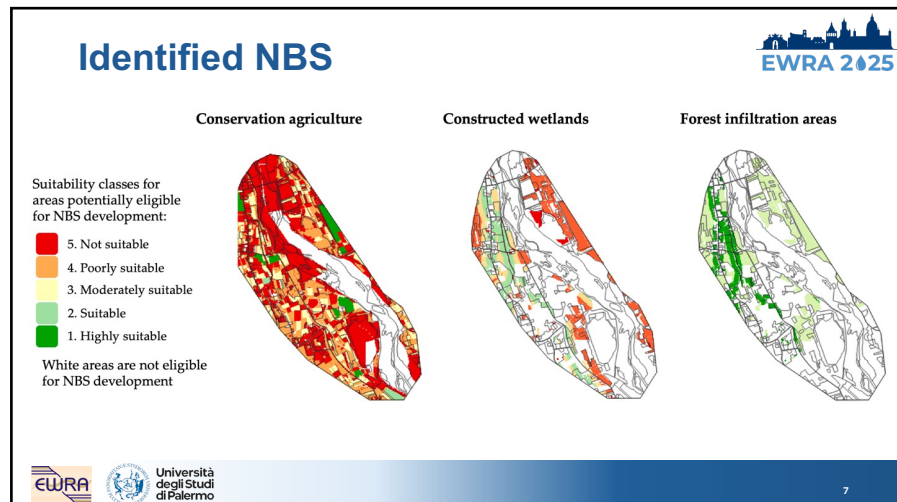

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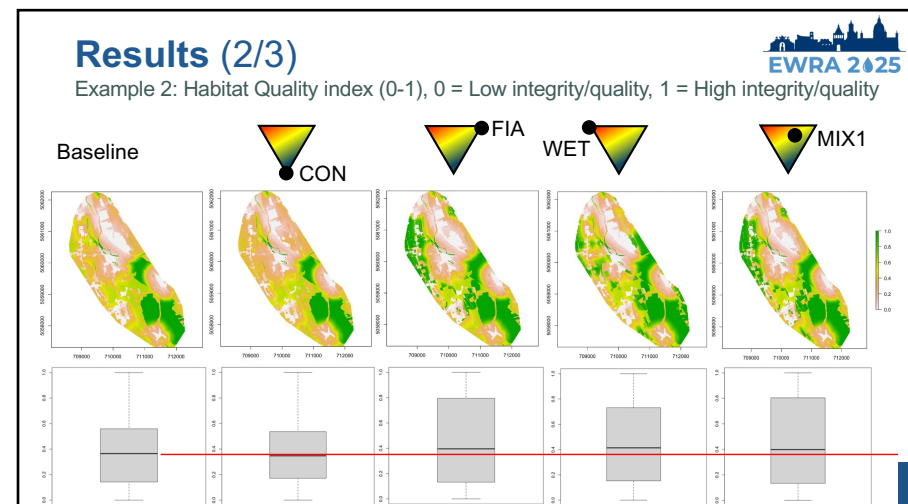
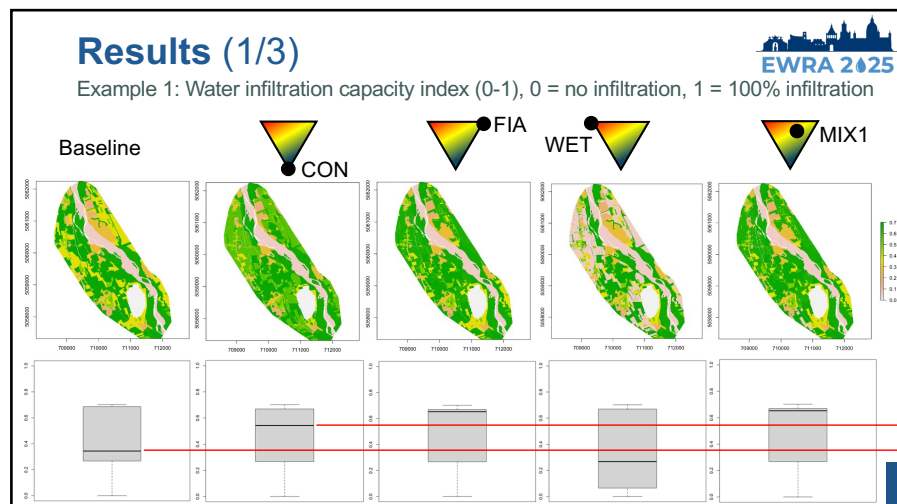
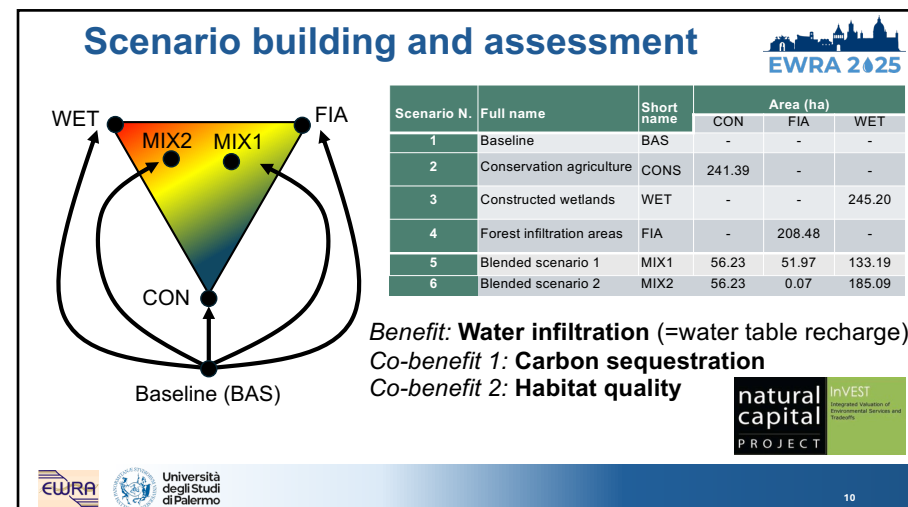
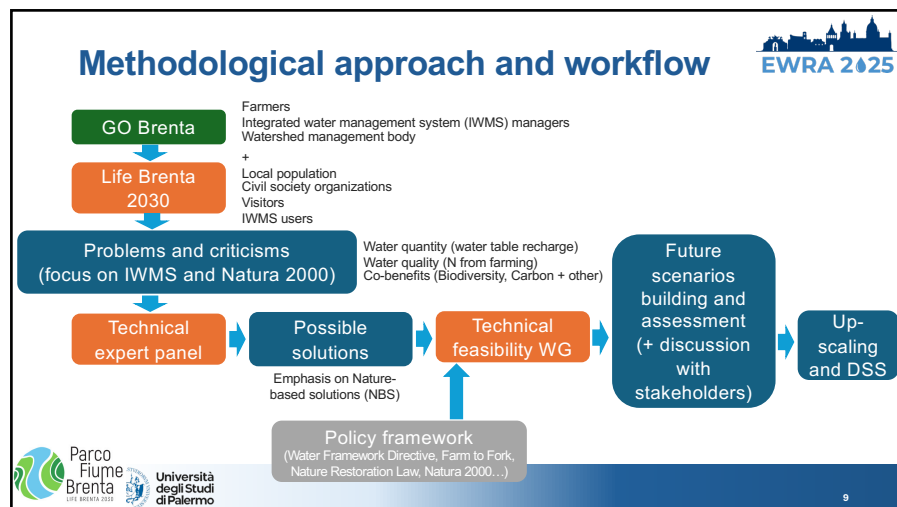
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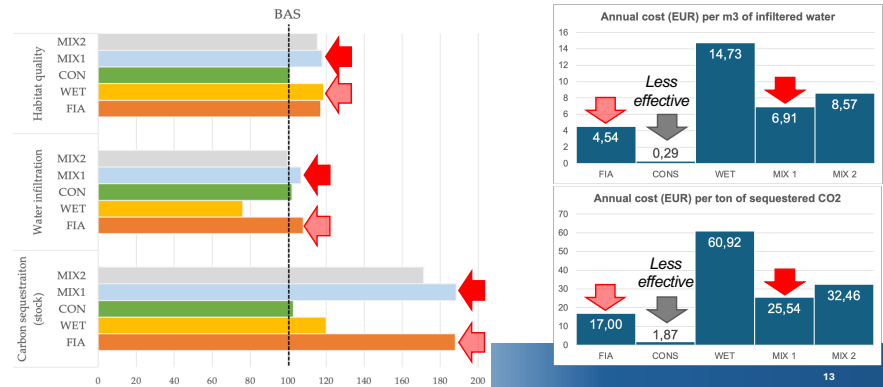


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Results (3/3)

Targeted ecosystem services delivered under each scenario
vis-à-vis the baseline scenario (BAS indexed to 100)



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Final considerations



- Multiple **environmental** and **resource costs (ERC)** identified...**multiple benefits** (beyond water) **possible via NBS**
- FIA** most **effective/efficient single NBS** for **multiple benefits**, **WET** for **biodiversity**
- Blended solutions** (MIX 1) **more effective/efficient** in delivering multiple benefits
- Side activities**: communication, environmental education, improved governance mechanisms
- EU Nature Restoration Law** prioritizing **Natura 2000 sites** and **riverine areas**
- Possible support to **ERC recovery** according to the EU WFD, art. 9 → NBS and restoration financed via water tariff (first case in Italy)



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