



Project co-financed by the European
Regional Development Fund

SUMMER SCHOOL

SUSTAINABLE GOVERNANCE OF MEDITERRANEAN WETLANDS

Wetland Contracts as voluntary agreements for stakeholder engagement and empowerment

Caorle and Venice (Italy), 3rd - 7th June 2019

STEERING ORGANIZATIONS :



CO-ORGANIZERS :



KIND COOPERATION OF :



Ecological restoration of the Venice Lagoon: LIFE SeResto and LIFE ReFresh projects

Andrea Bonometto, Rossella Boscolo

Italian Institute for Environmental Protection and Research, ISPRA



ISPRA - ITALIAN NATIONAL INSTITUTE FOR ENVIRONMENTAL PROTECTION AND RESEARCH

Public body subject to the vigilance of the Ministry for Environment, Land and Sea.

FIELDS OF ACTIVITIES

- ✓ **research** and experimentation
- ✓ **control, monitoring** and **evaluation** activities
- ✓ strategic consulting and technical-scientific **assistance to the Ministry of the Environment**
- ✓ **reporting** obligations required by the Community legislation (Directives and Regulations) and participation in European working groups
- ✓ Since 2018 ISPRA coordinates the **National System of Environment Protection Agencies (SNPA)**, which is established in a federative framework of collaboration



- 8 ISPRA Offices:

1. Roma (Headquarters)
2. Venezia
3. Chioggia (Venezia)
4. Ozzano (Bologna)
5. Livorno
6. Castelromano (Roma)
7. Palermo
8. Milazzo

Research group involved in the LIFE SERESTO and LIFE LAGOON REFRESH projects belongs to the Office “Impact assessment on transitional waters”. The groups worked on the implementation of WFD at national and EU level.

ECOLOGICAL RESTORATION IN THE CONTEXT OF EU DIRECTIVES

Dir. 92/43/CEE Habitat Directive

Art. 2.2

Measures taken pursuant to this Directive shall be designed to maintain or **restore**, at **favourable conservation status**, natural habitats and species of wild fauna and flora of Community interest

2000/60/EC Water Framework Directive

Art. 4.1

Member States shall protect, enhance and **restore** all bodies of surface water ... with the aim of achieving **good surface water status**

New objectives based on the status of BQEs + «supporting» elements

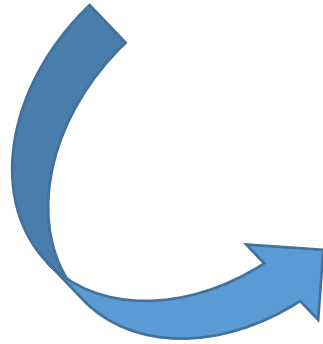
Supplementary measures: required to implement additional measures, where basic measures (standard measures, as UWWT and ND acting on the source of pollution) are not sufficient

SUPPLEMENTARY MEASURES (WFD)

Annex VI part B

(vii) recreation and restoration of wetlands areas

(xvi) research, development and demonstration projects

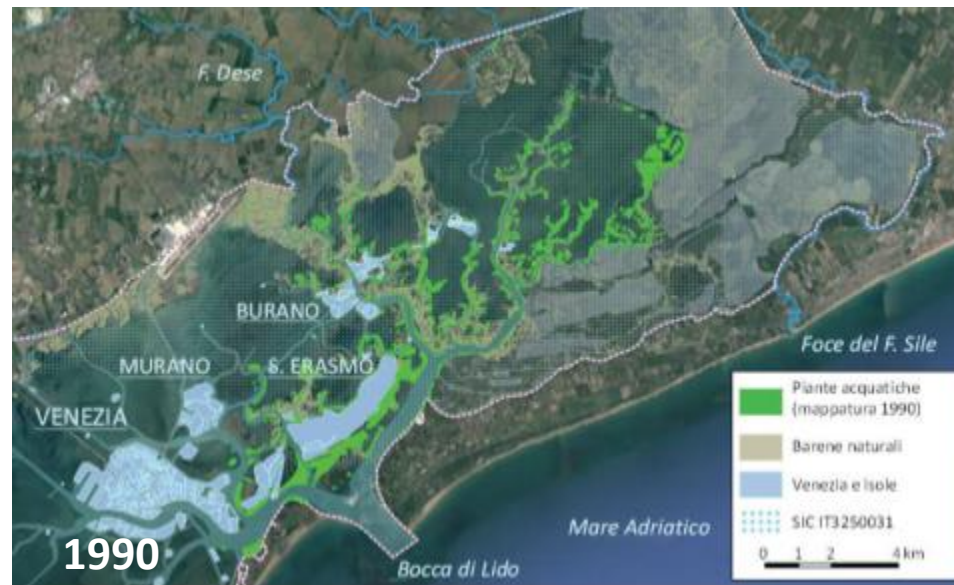


Gap of knowledge concerning the restoration ecology/processes;
Uncertainty in the effectiveness of ecological restoration measures



LIFE (and other EU) program is a suitable founding instrument to implement pilot projects and to test the effectiveness of supplementary measures to improve the ecological status (or the conservation degree) of transitional water bodies.

Loss of saltmarshes and reed cover



Loss of seagrass meadows

LIFE SERESTO

Habitat 1150* (Coastal lagoon) recovery by SEagrass RESTOration. A new strategic approach to meet HD & WFD objectives



Coordinator

University Cà Foscari of Venice

Partners

ISPRA – Italian National Institute for Environmental Protection and Research

*Interregional Superintendency for Public Works in Veneto, Trentino Alto Adige,
Friuli Venezia Giulia*

Laguna venexiana onlus (association of fishermen and hunters)

Budget info

Total amount: 1,563,898 Euro

% EC Co-funding: 1,172,923 Euro 75 %

Duration

Start: 01/001/2014

End: 30/04/2018

Location

Venice Lagoon

ITALY

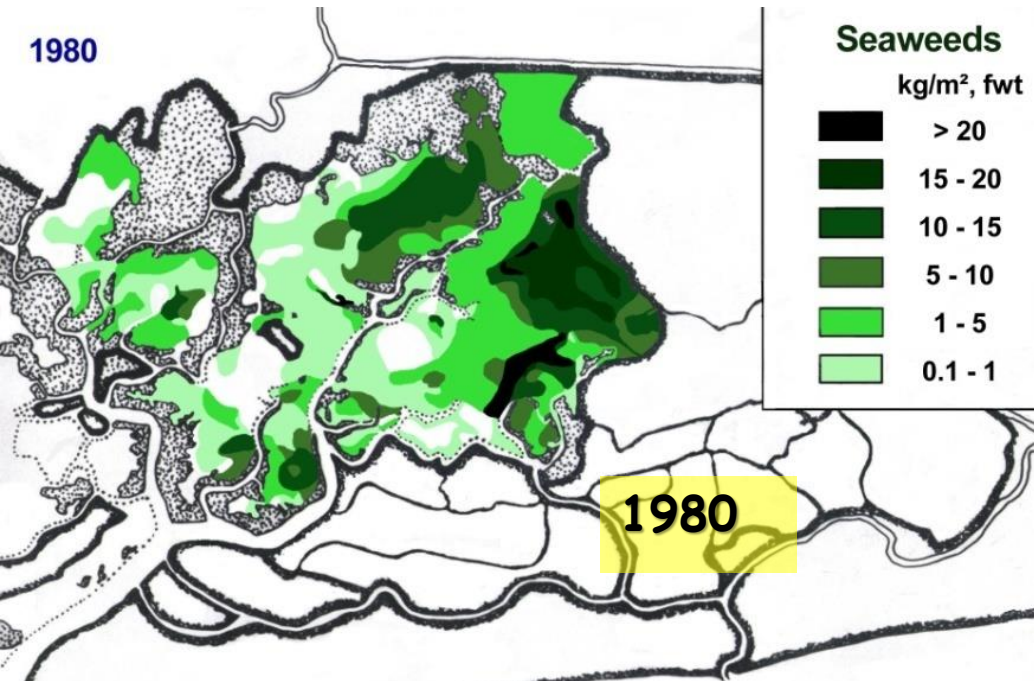


Università
Ca' Foscari
Venezia



MINISTERO INFRASTRUTTURE E TRASPORTI
PROVVEDITORATO INTERREGIONALE GO.PP.
VENETO-TRENTINO ALTO ADIGE
FRIULI VENEZIA GIULIA

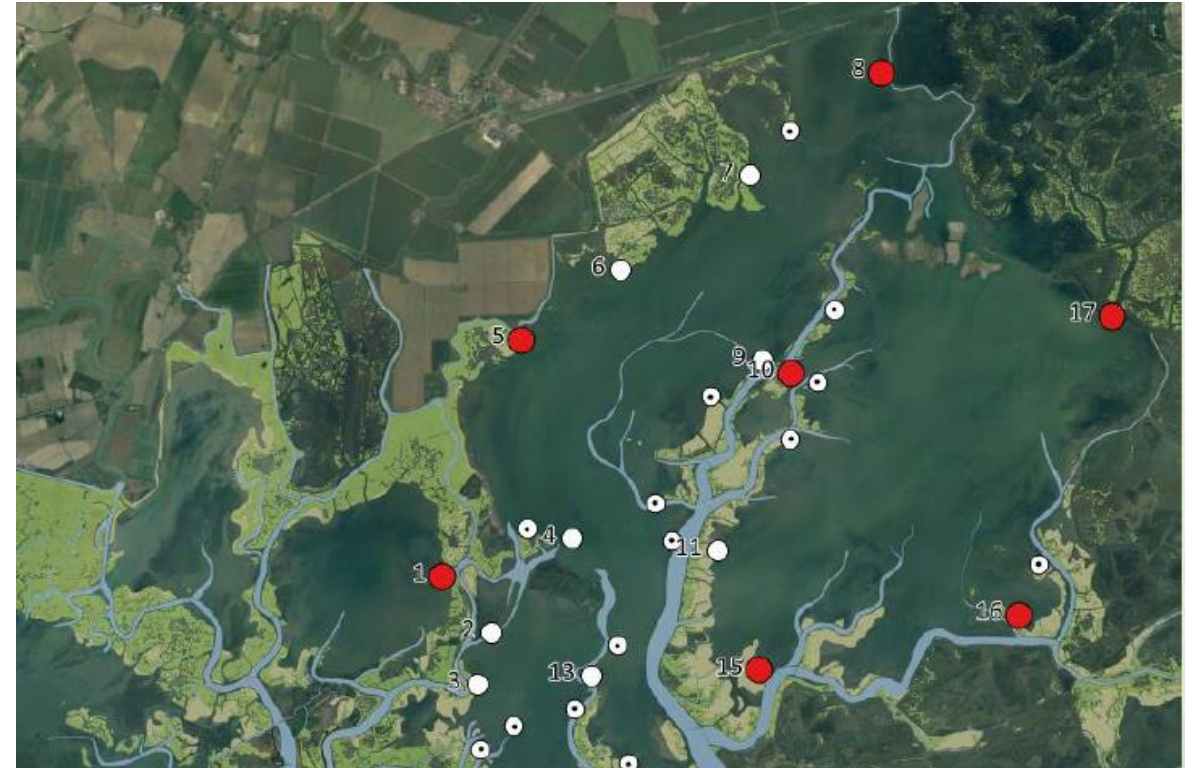
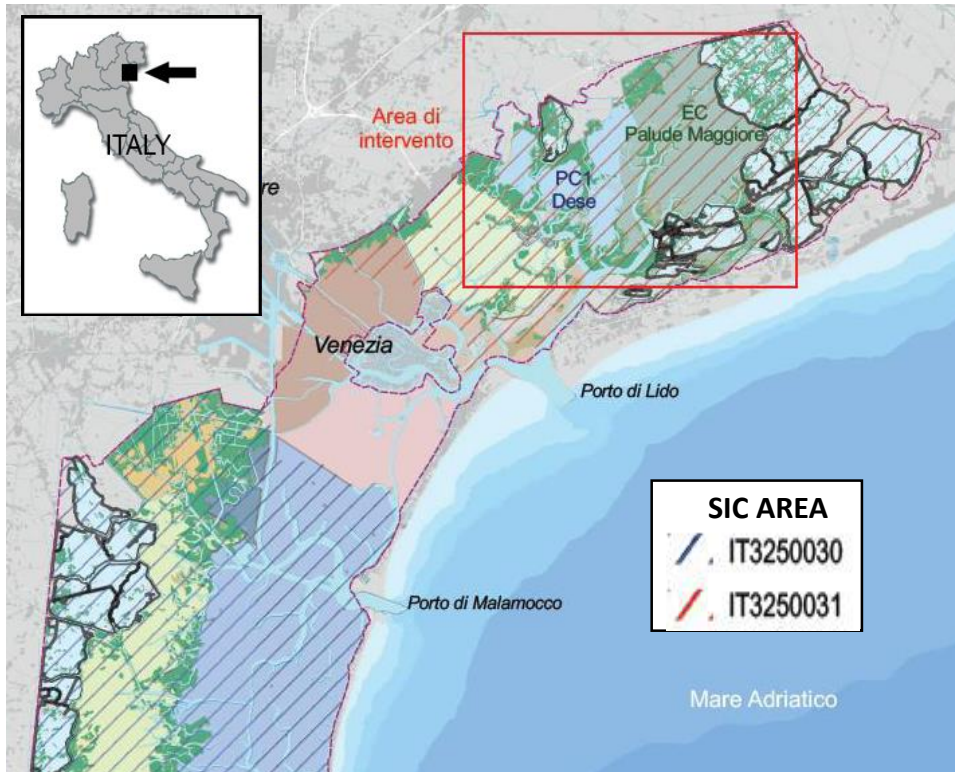




Causes of degradation

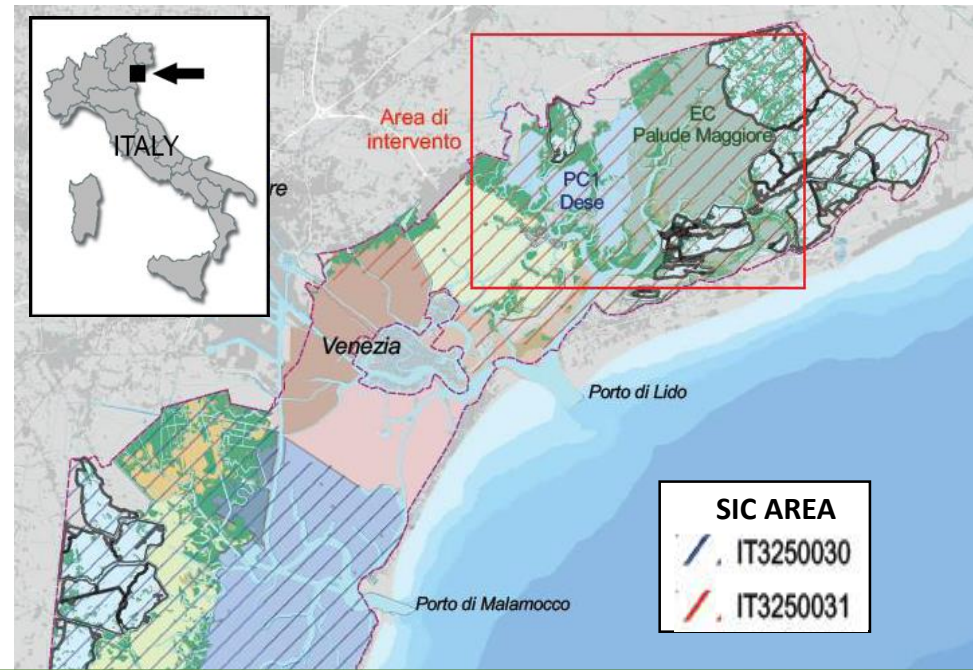


In the first years after 2010 the situation started to improve: lower inputs of nutrients; significant reduction of clam fishing. Environmental conditions were suitable for seagrass recolonization.



The core project's idea is to **trigger and support the natural re-colonization** processes by widespread transplantations of small sods bearing seagrasses and manual dispersion of rhizomes, leaving to the natural reproduction capacity the task of achieving a complete re-colonization of the project areas.

In the first years after 2010 the situation started to improve: lower inputs of nutrients; significant reduction of clam fishing.
Environmental conditions were suitable for seagrass recolonization.



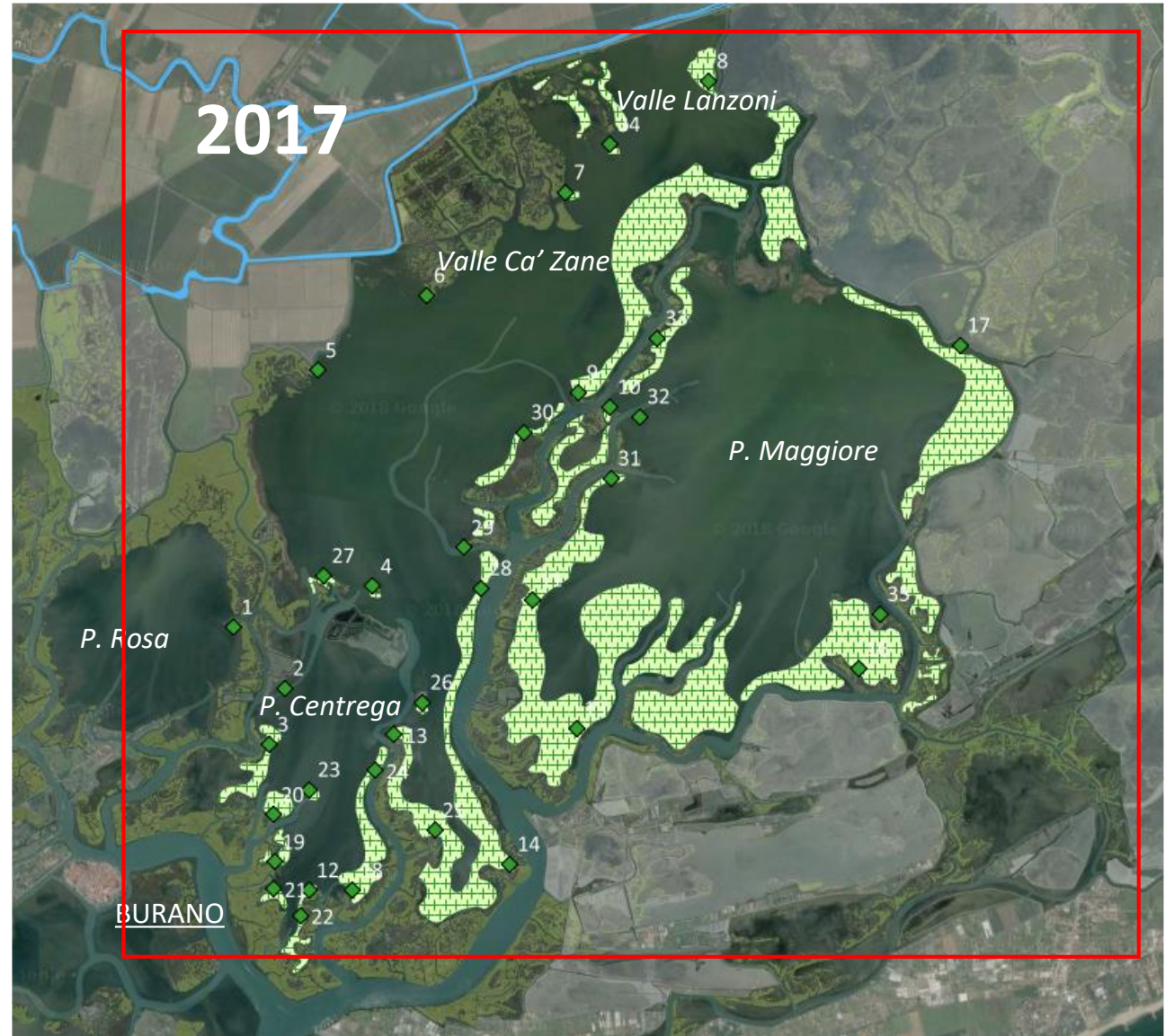
- ✓ Restore the seagrass meadows in the Northern Venice Lagoon, as a measure to;
 - ✓ restore the water habitat 1150* Coastal lagoons;
 - ✓ contribute to the achievement of **good ecological status of water bodies** and enhancing the overall biodiversity (including species of EU interest);

In each site 9 sods of 30-cm diameter have been transplanted.

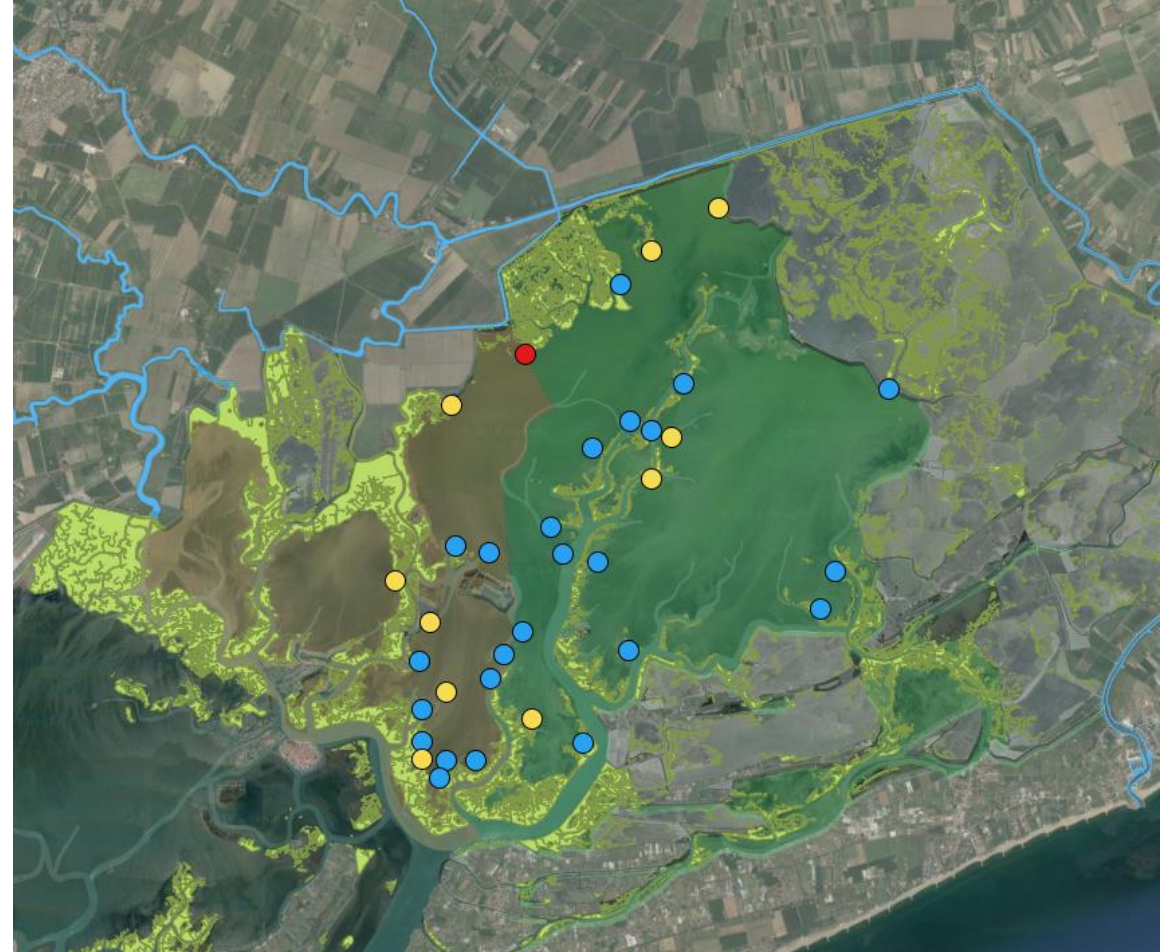
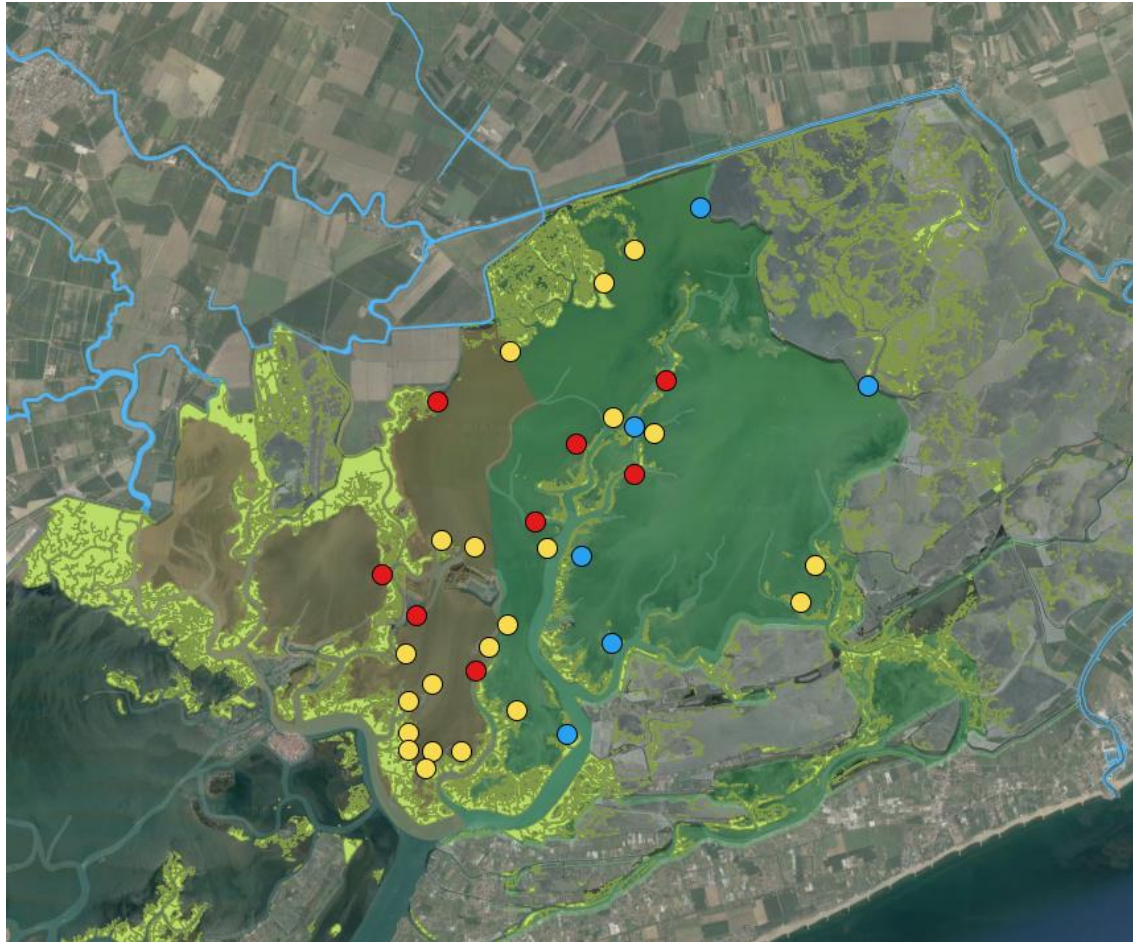


400 rizhomes were transplanted at each site





CONSERVATION DEGREE HABITAT 1150* Coastal lagoon

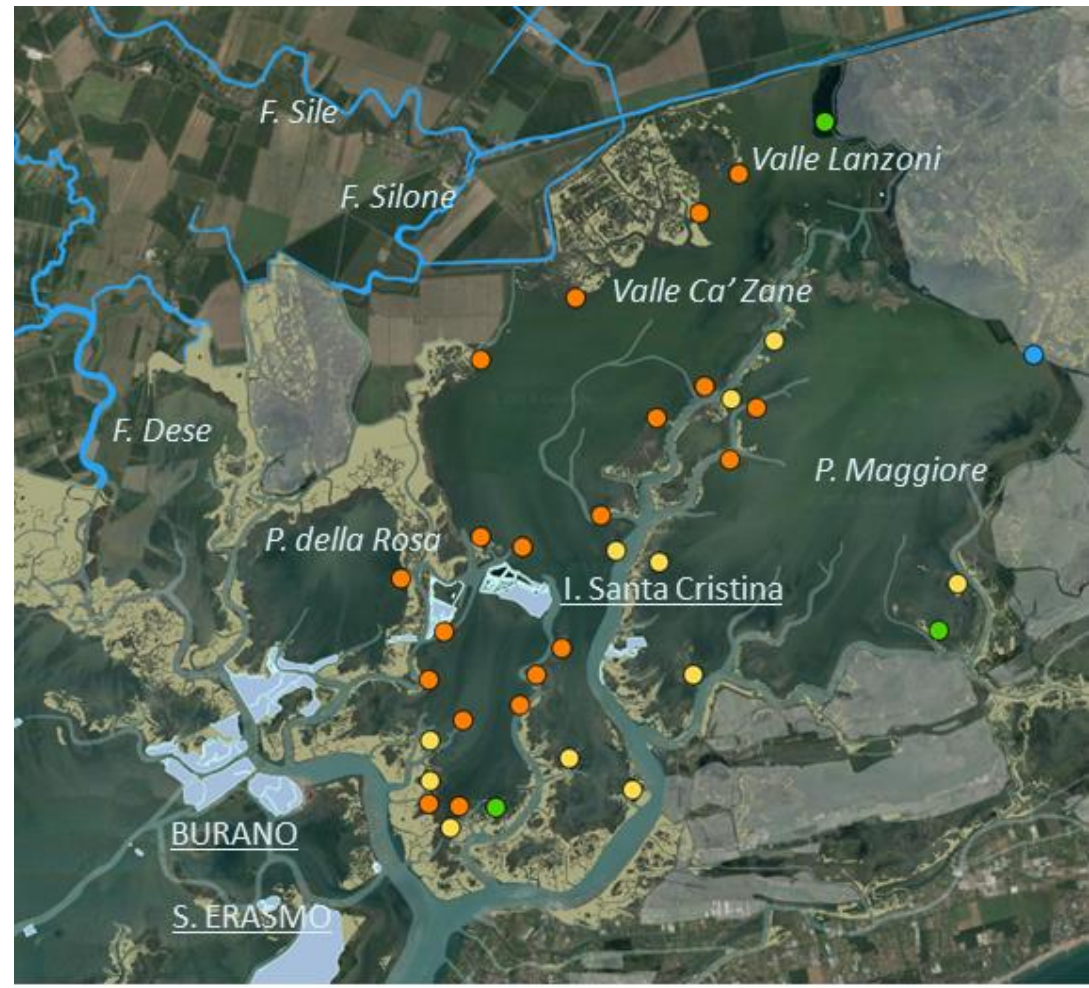


● I - excellent

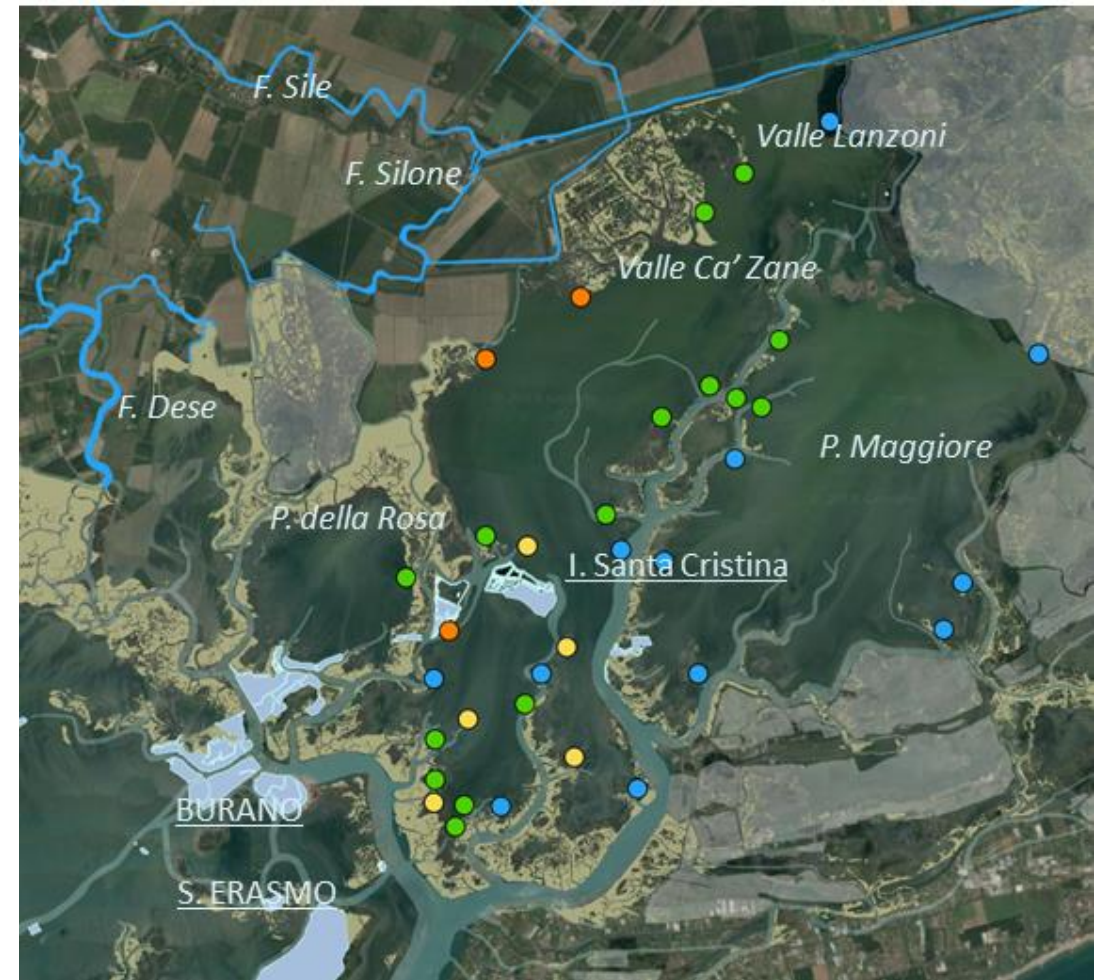
● II - good

● III - degraded

EQB MACROPHYTE STATUS (MAQI index)



2014/15 (before transplanting)



2017 (3/4 years after transplanting)

LIFE LAGOON REFRESH

Coastal lagoon habitat (1150) and species recovery by restoring the salt gradient increasing fresh water input*



Coordinator

ISPRA – Italian National Institute for Environmental Protection and Research

Partners

Veneto Region - Environmental Protection Department

*Interregional Superintendency for Public Works in Veneto, Trentino Alto Adige,
Friuli Venezia Giulia*

University Cà Foscari of Venice

IPROS Environmental Engineering s.r.l

Budget info

Total amount: 3'315'130 Euro

% EC Co-funding: 74,13%

Duration

Start: 01/09/2017

End: 31/08/2022

Location

Venice Lagoon

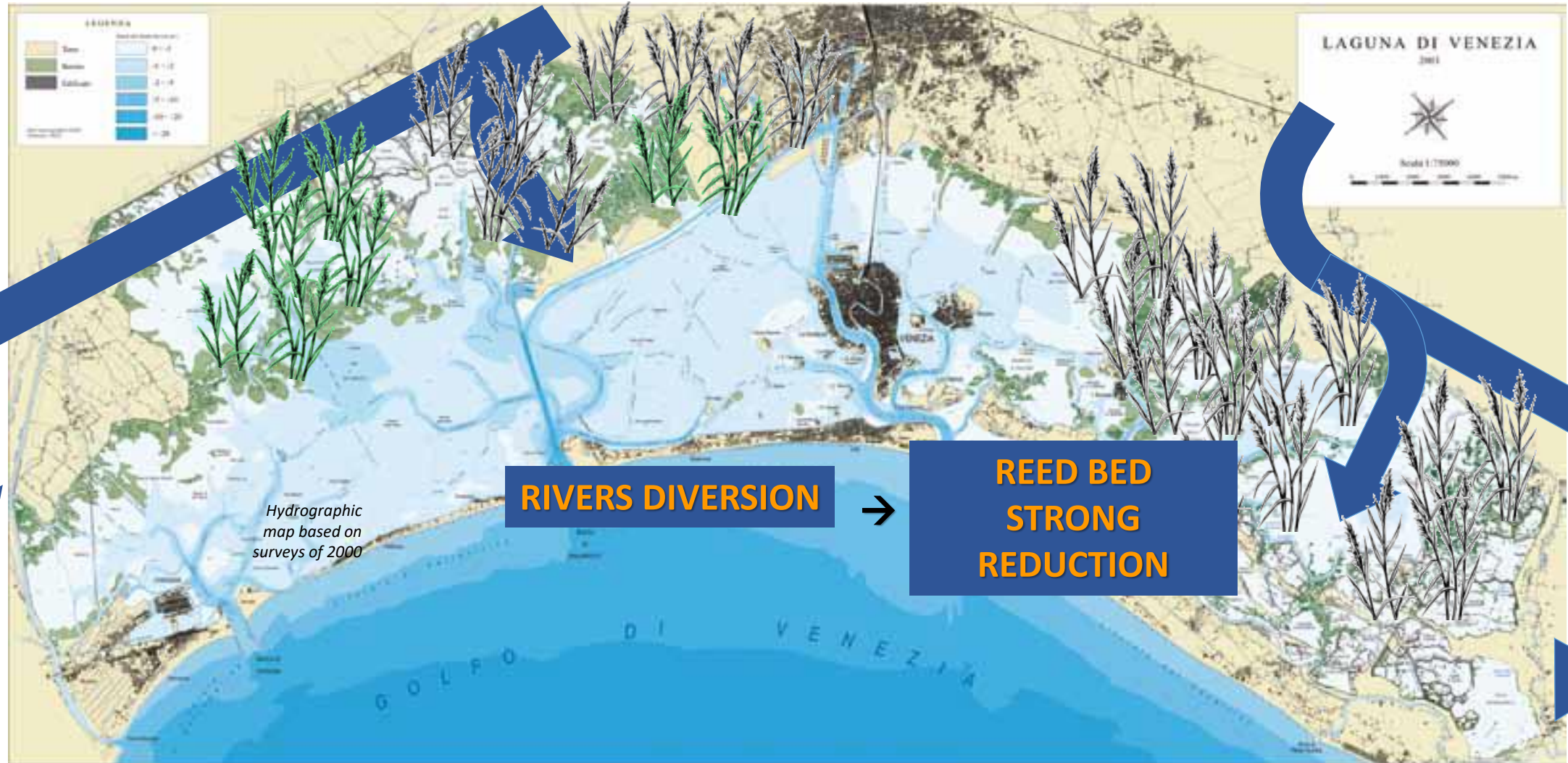
ITALY

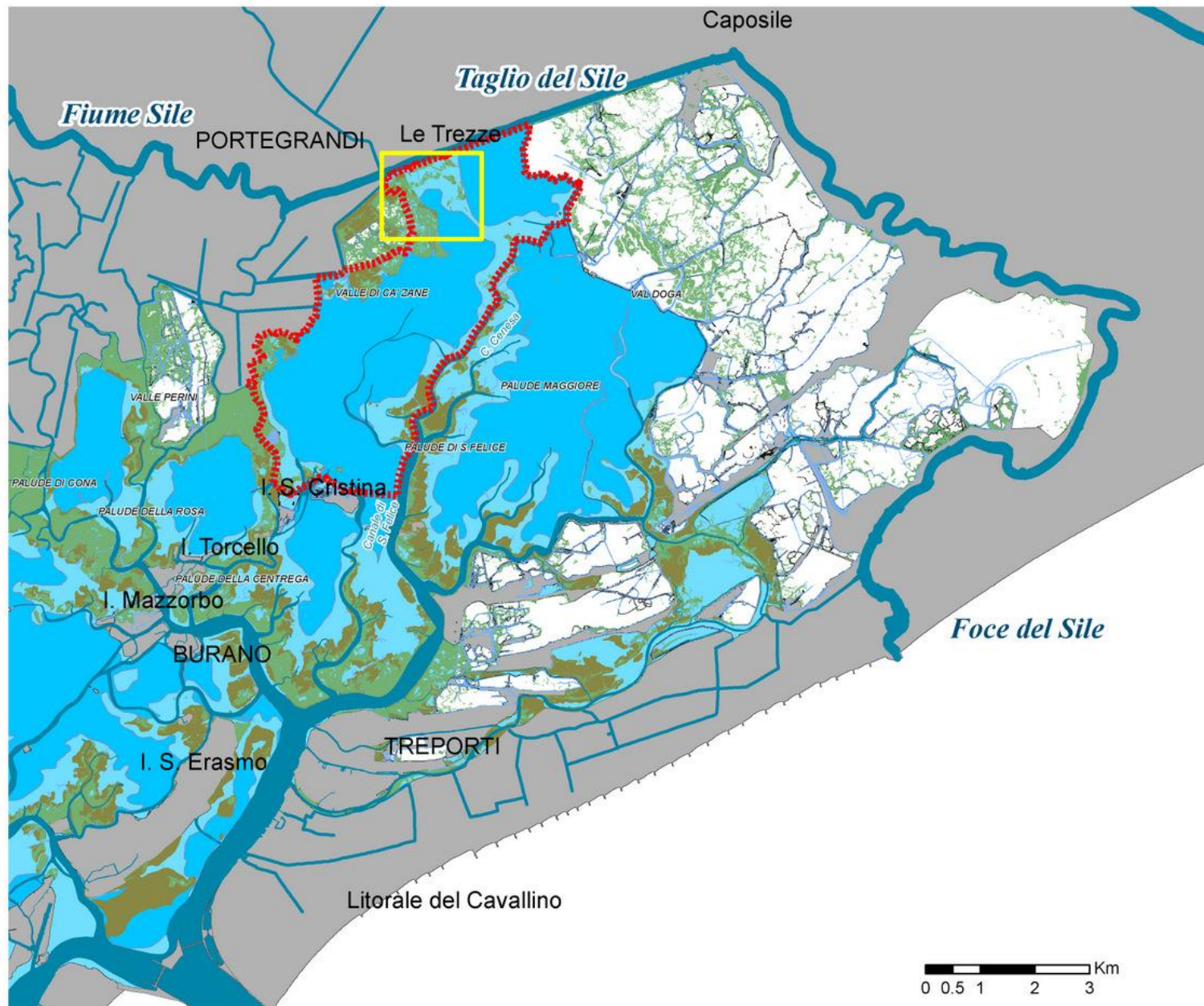


VENICE LAGOON: 550 Km²

SALT MARSHES: 170 Km² (1901)

47 km² (2003)





- Sito di Progetto
- Area di intervento
- Natura 2000**
- Area di progetto - SIC IT3250031 - LAG. SUPERIORE
- SIC IT3250030 - LAG. MEDIO - INFERIORE
- ZPS IT325046 - LAGUNA DI VENEZIA
- Habitat 1150* (Coastal Lagoon)





PROJECT MAIN OBJECTIVES

MITIGATION OF HYDROLOGICAL ALTERATION

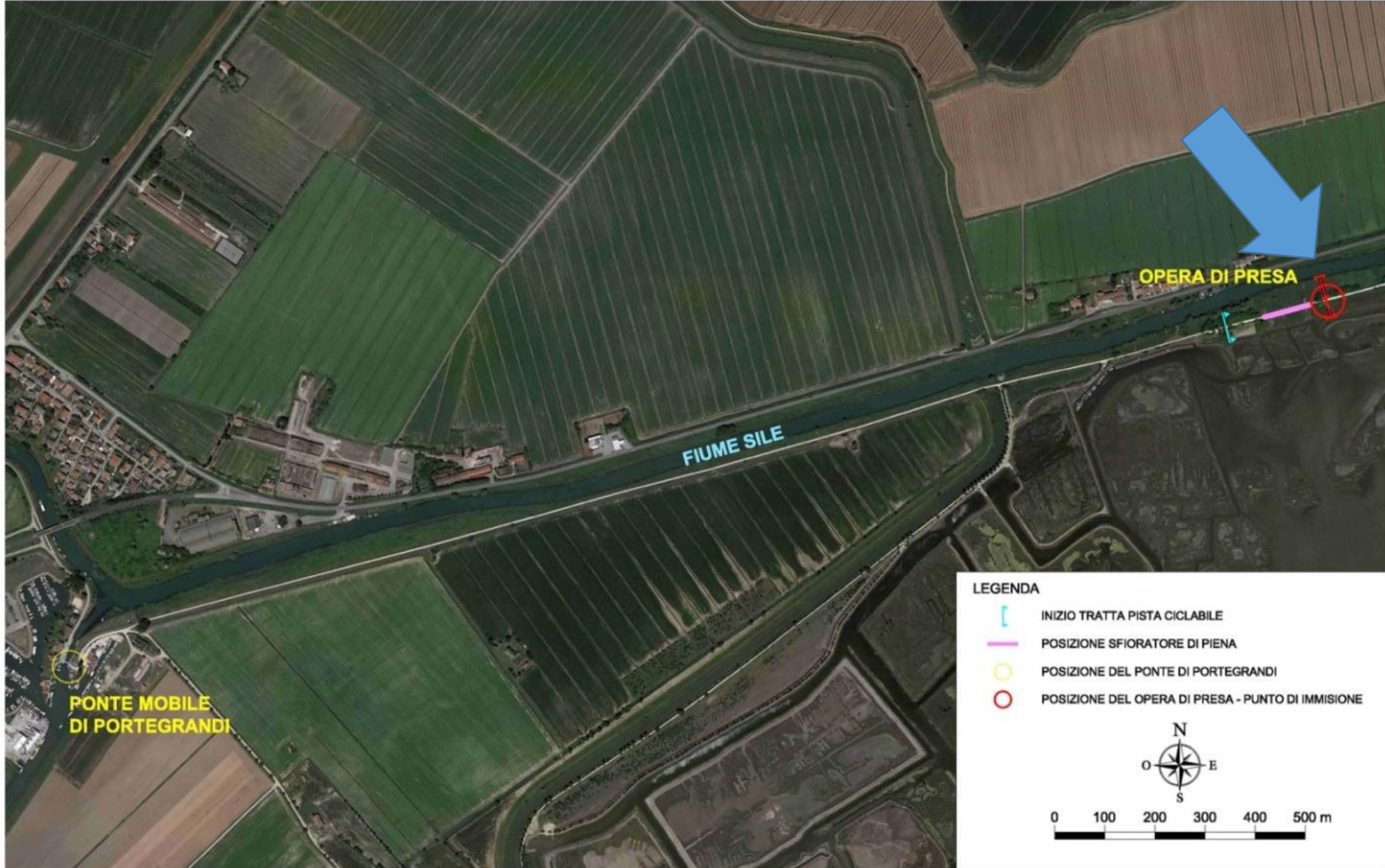
RECREATE THE TYPICAL OLIGO-MESOHALINE ENVIRONMENTS OF ESTUARINE TYPE

- to reduce the degree of eutrophication and to improve the **Degree of Conservation of Habitat 1150** * - Coastal lagoons in the Northern Lagoon of Venice, SCI IT3250031
- to improve the **status of bird species** included in annex I of Dir. 2009/147/EC, that use the reed environment during the winter period and /or for breeding, foraging or nesting;
- to increase the **presence of fish species** attracted by the presence of low-salinity environments;

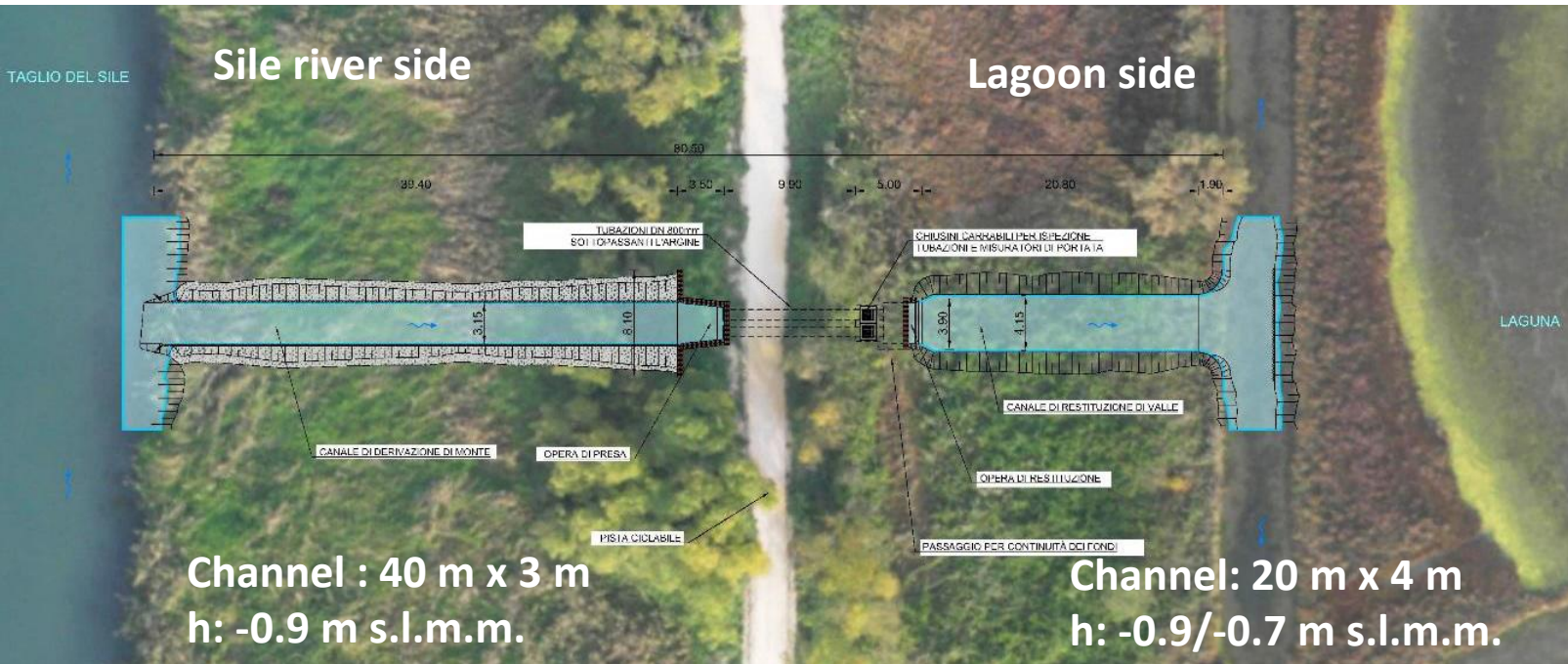
PROJECT ACTIONS

- ✓ diversion of a **freshwater flow** (1.000 l/s) from the river Sile into the lagoon;
- ✓ restoration of the **intertidal morphology** to sustain the reed development;
- ✓ planting of *Phragmites australis* and transplantation of *Ruppia cirrhosa* and *Zostera noltei*;
- ✓ establishment of a protected zone of 70 ha in order to manage/reduce hunting and fishing pressure;

- ❖ **monitoring** of the project impact;
- ❖ stakeholder **involvement**;
- ❖ actions of **dissemination** and **replication** of project's results.





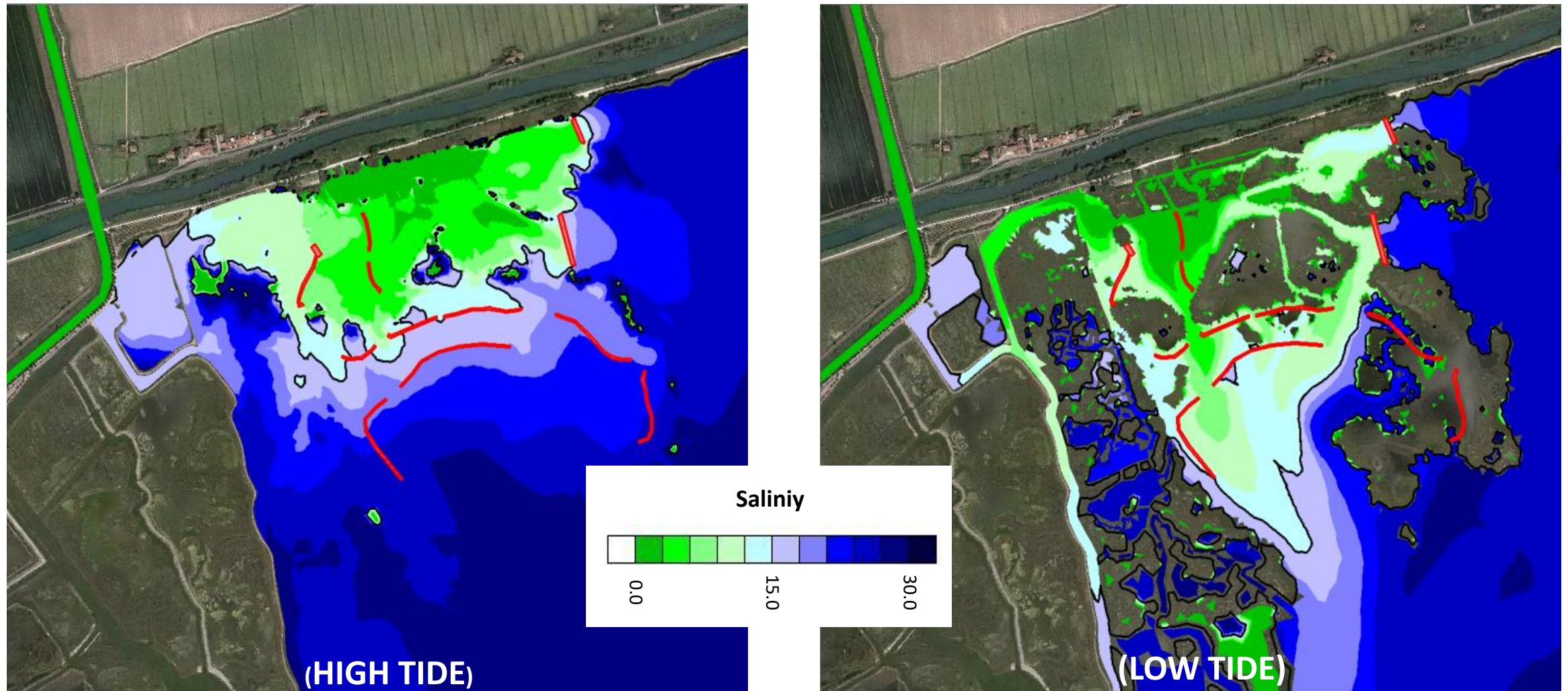


HYDRAULIC WORK

- ✓ Artificial channels in the floodplains (river and lagoon sides)
- ✓ 2 pipes (diameter 800 mm)
- ✓ Sluice gates to regulate the discharge from the river to the lagoon
- ✓ daily mean fresh water input 1 m³/s (0.3 m³/s during the first year)



NUMERICAL MODEL TO COMPARE PROJECT MORPHOLOGICAL CONFIGURATION



REED TRANSPLANTING



REPLICABILITY OF THE PROJECT

6 planned steps

1. Database of EU lagoon/estuary for Lagoon Refresh project (strategy/actions) replication
2. *call for interest* at EU level to identify potential replication sites
3. First contact with Water Manager and selection of 6 sites where to focus the activity
4. Visit the Lagoon Refresh project site: WM will be hosted by the Lagoon Refresh project
5. Lagoon Refresh partners will visit the 6 selected sites
6. Collaboration in implementation of restoration scenarios, replicating the actions or the strategy of Lagoon Refresh project

BUDGET 67.000 €

**PLEASE DO NOT HESITATE TO CONTACT US
FOR FURTHER INFORMATION**



STAKEHOLDER INVOLVEMENT



Both LIFE projects were designed starting from ideas shared with stakeholder
(that previously carried out small experimental works)

Fishermen and hunters are involved in transplanting activities



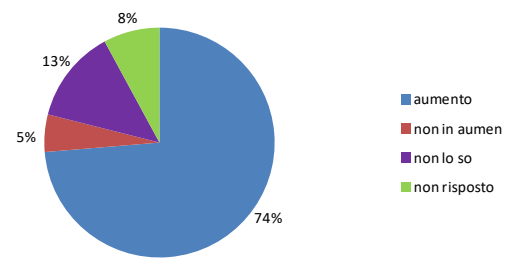


STAKEHOLDER INVOLVEMENT

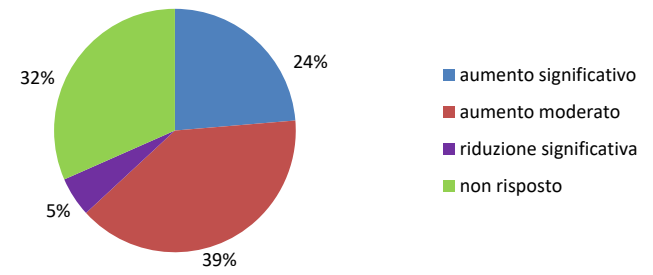


Questionnaire to investigate the stakeholders' perception on seagrass restoration and the importance of seagrasses for their recreational activity.

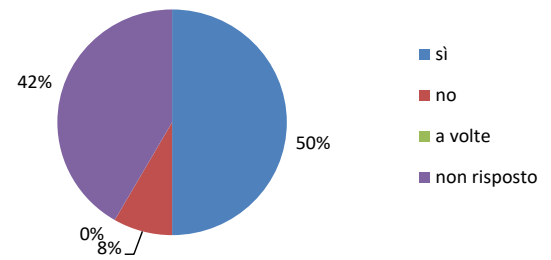
Have you observed an increase of seagrasses from 2010 up to now?



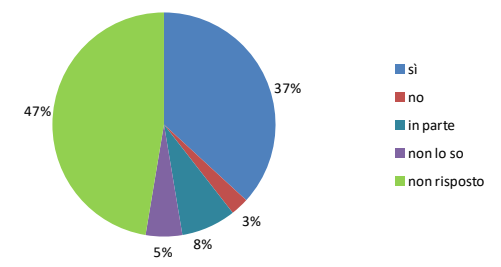
Have you observed a change in the abundance of target species from 2010 up to now?



Do you select you fishing area taking into account the presence of seagrasses?



Do you think that the observed changes are related to the increase of seagrass cover?



Meeting with hunters to identify management solutions considering both the environmental protection and traditional socio-economic activity issues.

THANK YOU !



Project co-financed by the European Regional Development Fund

STEERING ORGANIZATIONS :



CO-ORGANIZERS :



KIND COOPERATION OF :



SUMMER SCHOOL

SUSTAINABLE GOVERNANCE OF MEDITERRANEAN WETLANDS

Wetland Contracts as voluntary agreements for stakeholder engagement and empowerment

Caorle and Venice (Italy), 3rd - 7th June 2019

Andrea Bonometto, Rossella Boscolo Brusà

Italian Institute for Environmental Protection and Research, ISPRA
www.lifelagoonrefresh.eu
www.lifesseresto.eu

Email andrea.bonometto@isprambiente.it
rossella.boscolo@isprambiente.it
lagoonrefresh@isprambiente.it