

The **LIFE-TRANSFER** project aims to trigger the process of recolonization of aquatic phanerogams in selected Mediterranean lagoons through the transplanting of small sods and rhizomes of *Zostera marina*, *Zostera noltei*, *Ruppia cirrhosa* and *Cymodocea nodosa*. In each lagoon, the species previously present will be transplanted, to promote the natural propagation capacity through seed production and dispersion.

The intervention technique provides transplantation exclusively by hand with a reduced amount of material from donor sites, with advantages in terms of environmental impact, costs and of application on a larger scale.

Furthermore seagrass meadows represent nursery for fish and feeding for birds, increase the stability of the tidal flats and sequester large amounts of CO<sub>2</sub>.

The implementation of different environmental policies reduced some disturbance in the sites targeted by LIFE- TRANSFER. However, if the seed bank is absent, or hydrodynamic circulation is limited, residual meadows are unable to “naturally” re-colonize the lagoons.

The proposal is the application of the results of LIFE SeResto (LIFE12 NAT/IT/000331) through the transplantation of submerged phanerogams at the Mediterranean level. Submerged phanerogams are recognized as priority for the conservation of coastal lagoons, and represent one of the most striking examples of organisms that deeply modify the biotope to be called “ecosystem engineers”.



**LIFE program**  
 LIFE NAT/IT/000264 - LIFE TRANSFER  
*Seagrass transplantation for transitional Ecosystem Recovery*

**Total budget:** 4.214.120 €  
**EU financial contribution:** 3.160.590 €  
**Duration:** start 01/12/2020 - end 30/11/2025

**Project coordinator**



**Università degli Studi di Ferrara**

**Project partners**



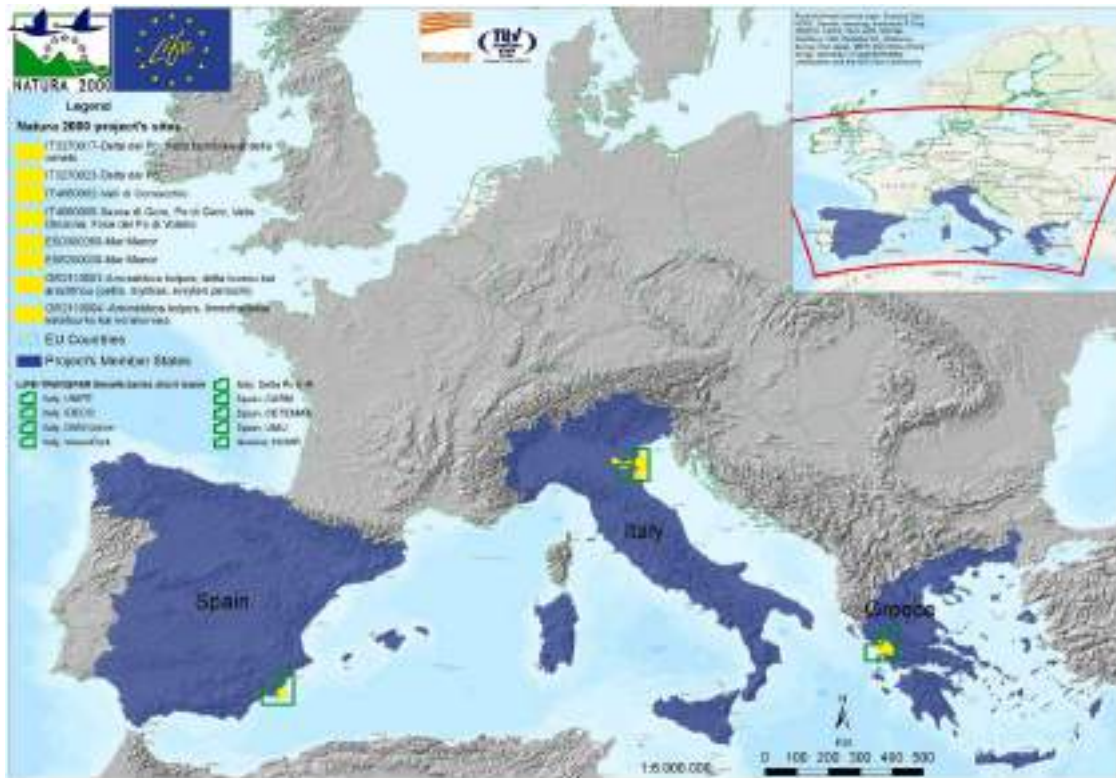
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**LIFE TRANSFER**  
**LIFE 19 NAT/IT/000264**

*Seagrass transplantation for transitional Ecosystem Recovery*





### AREAS OF INTERVENTIONS

• *Sacca di Goro, Po di Goro, Valle Dindona, Foce del Po di Volano (IT4060005)*

A shallow-water lagoon of the southern Po River Delta (Italy) with a surface area of 26 km<sup>2</sup>, an average depth of 1.5 m, and it is connected to the sea by a large sea mouth.

• *Valli di Comacchio (IT4060002)*

The largest (over 100 km<sup>2</sup>) brackish lagoon system in the Po River Delta with an average depth of 0.9 m.

• *Po Delta (IT3270023, IT3270017)*

The project will be implemented in Canarin lagoon which a surface area of about 10 km<sup>2</sup> and an average depth of 1.0/1.2 m.

• *Mar Menor lagoon, Murcia (ES6000260, ES6200030)*

A hypersaline coastal lagoon, with a surface of 135 km<sup>2</sup>, a mean depth of 3.6 m and maximum over 6 m. It is located in the South-western Mediterranean coastline, in Spain.

• *Amvrakikos Gulf, Katafourko lagoon and Korakonisia (GR2110004, GR2110001)*

A lagoon systems covering about 250 km<sup>2</sup>, including more than 20 coastal lagoons. The transplant will be implemented in Logarou, the donor site is the Mazoma lagoon, a lagoon with a surface of 135 km<sup>2</sup>.



### OBJECTIVES

1. **Restoring and consolidating** priority habitat 1150\* in 6 coastal lagoons, by transplanting submerged phanerogams.
2. Contributing to achieve a **good ecological state** of transitional water.
3. Quantifying the value of **ecosystem services** provided by the lagoon environments and the seagrass meadows.
4. Training of future trainers in this techniques, targeting site managers/professional not participating to the project to ensure **transferability** and **replicability** in other sites.

### INTERVENTIONS

Phanerogams typical of each biogeographical area will be used for transplants,

e.g. *Ruppia cirrhosa* at Comacchio lagoon, *Cymodocea nodosa* and *Zostera noltei* at Mar Menor lagoon, *Zostera noltei* and *Ruppia cirrhosa* at Amvrakikos. The transplantation protocol requires all activities to be carried out manually. Collected sods will be placed in perforated buckets and kept wet until the time of transplantation that preferably must take place within a few hours from the removal in order not to compromise plants vitality. To support the transplantation of sods, the transplantation of rhizomes will also be carried out to accelerate the process of re-colonization of phanerogams.

### EXPECTED RESULTS

The expected results are conservation of the lagoons biodiversity and productivity through the restoration of their natural structure and function. The transplant configuration adopted in LIFE TRANSFER should allow the development of small structured prairies already after 3-4 years.

Direct expected results are:

- Over 80% of sods successfully transplanted;
- After 4-5 years, it is expected that 80% of sites are covered by continuous seagrass beds and multiple natural rootings;
- After 5-10 years, it is expected a development and expansion of seagrass meadows of 25% in each area;
- Improvement of conservation status of habitat 1150\* and lagoon biodiversity;
- An improvement of the ecological quality of water bodies.

## MAIN ACTIONS

### Transplantation

Transplantations of submerged phanerogams will produce high amounts of seeds and will represent a center of diffusion for colonization favoring a large-scale progressive spread in surrounding areas.



### Restoring water circulation

In the target areas of the Po Delta area (Italy) is foreseen also the dredging of a channel in order to increase hydrodynamism which in turn will facilitate also seed dispersion.

### Operators training

Operators training for extraction and transplantation of submerged aquatic angiosperms.

### Dissemination

Website, social media, brochure, technical guideline, videoclip and press conference will be provide to public.

