LE FORESTE DEL MARE

28 NOVEMBRE 2025

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Conferenza Finale
LIFE SeaForest

Reforestation techniques in the Mediterranean Sea

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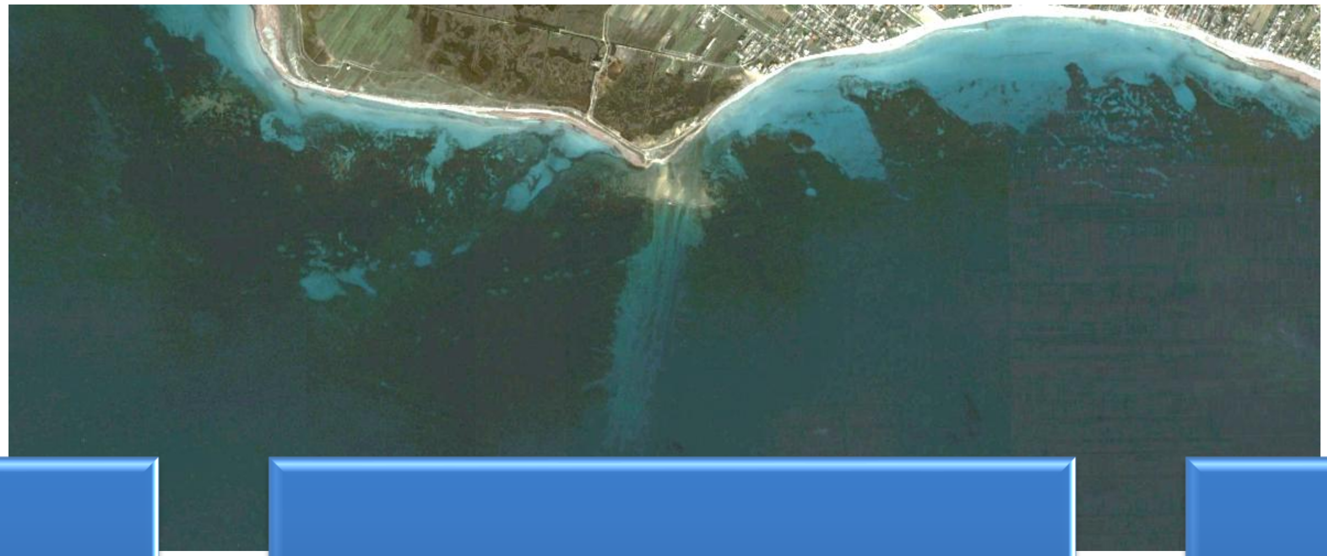
DEGLI IMPATTI ANTROPICI
E SOSTENIBILITÀ
IN AMBIENTE MARINO

Reforestation → *Habitat Restoration*

"is the intentional process of initiating or speeding up the recovery of a degraded or damaged ecosystem through management activities…"
F.A. Campos, 2017



Natural restoration	'assisted' restoration	Transplantation
• Large scale • Low budget • Unpredictable success	• Medium scale • *In situ* resources • Substrata modification	• Small scale • High budget • Nature restoration law

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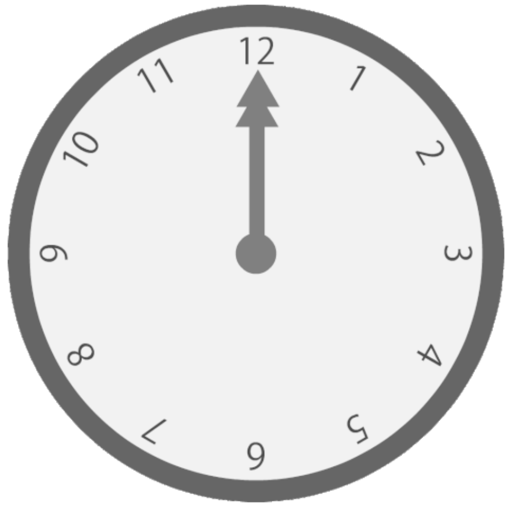
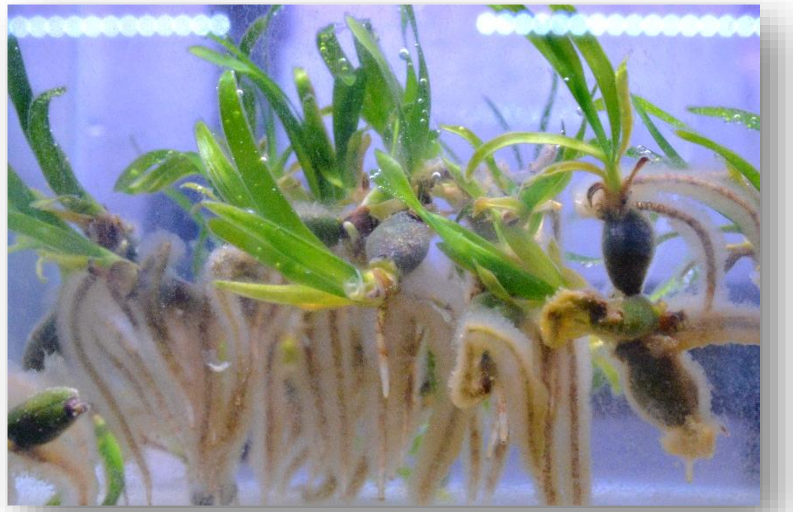


Cuttings (talee)

- Donor meadows
- Natural detachment (waves), drifting underwater or stranded on the beaches
- Artificial detachment (vessel anchoring)

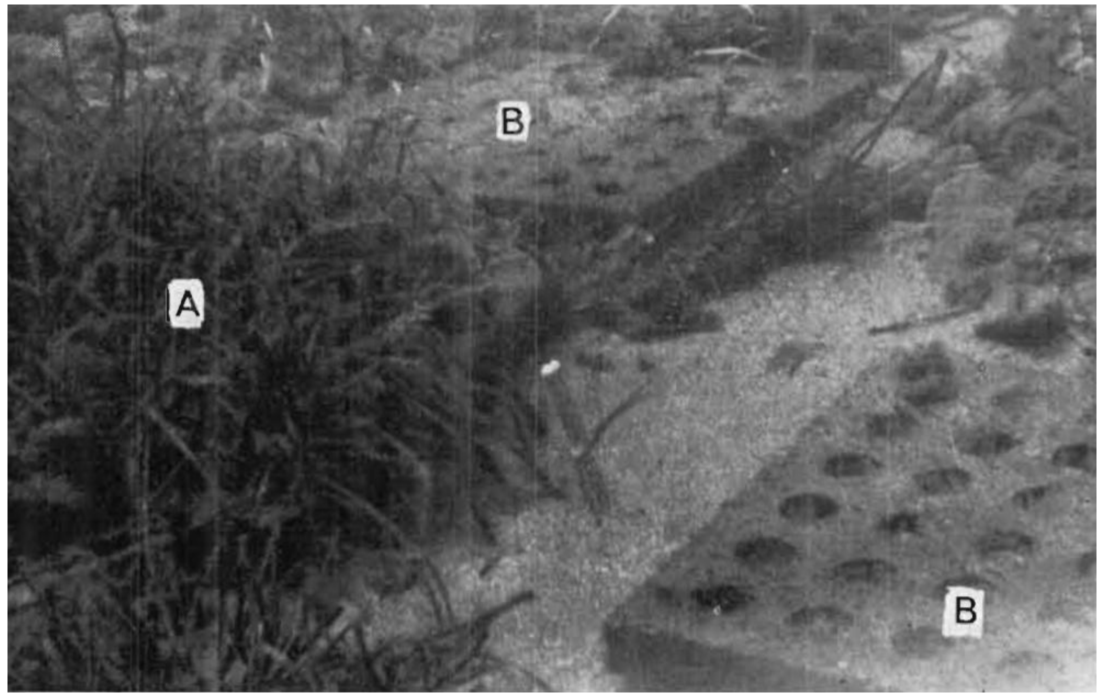
Clods (zolle)

Portions of a meadows including rhizomes, leaves, roots and sediment



Seedlings (germogli)

Obtained by seeds cultivated in special aquaria, from fruits stranded on the beaches

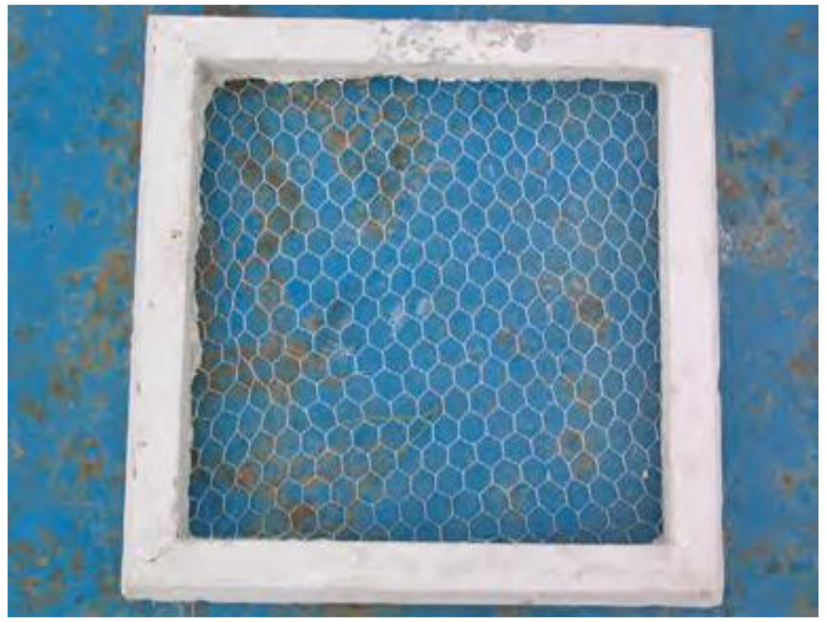


Maggi, P. (1973). Le problème de la disparition des herbiers à Posidonies dans le golfe de Giens (Var). Science et Pêche, 221: 7-20.

INDICE

Bacci T., La Porta B. (2021). Manuale delle tecniche e delle procedure operative per il trapianto di *Posidonia oceanica*. LIFE SEPOSSO (LIFE 16 GIE/IT/000761), Roma.

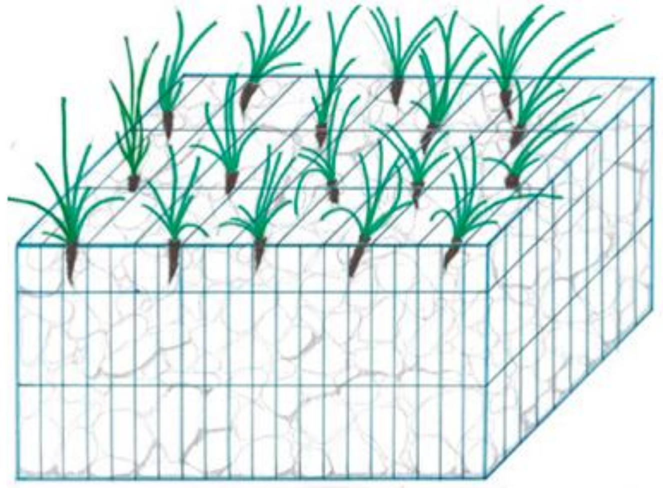
Cuttings



Net with concrete frame

Grid

Biodegradable supports



Cages with rocks

Geo- o biomats

Concrete stars

Stackes

… about cuttings:

- plagiotropic rizhomes better than orthotropic ones.
- Cuttings with ≥3 shoots, orthotropic rizhome >10 cm.

- Prefer dead *matte*, avoid sandy bottom.
- Depth: 10–18 m.

- Grids and biomats.
- Stackes and biodegradable supports.
- 5-10cm between successive cuttings.

- Port-Cros, Rapallo, Palermo, Ischia experiences provide successfull results.
- Survivorship ≥50–75% after 3–5 years, significant increase on density.

Clods

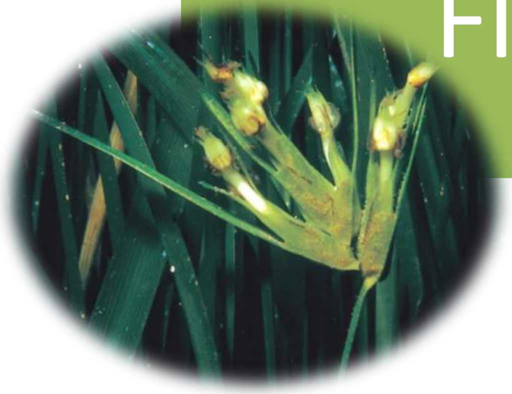
Excavator, bucket

Clod details: sediment, roots, ryzhomes, leaves

- Few experiences in Mediterranean Sea.
- Scarce iniziatives follow up and monitoring

Seedlings

Flowering

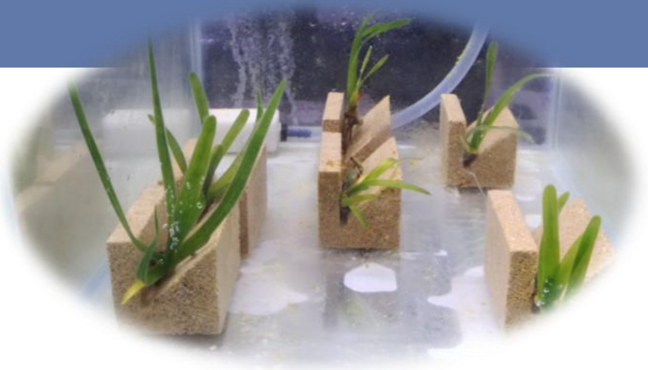


Fruits stranding

Collection

National patent deposit n. 102024000024747 del 05/11/2024

Cultivation



National patent n. IT102020000009046A del 27/10/2021
EU patent n. EP3903569A1 del 07/06/2023

Transplant

… about seedlings

- At least 2 months in aquaria

- High rugosity substrata (rocks and ‘matte’)
- Caulerpa or Cymodocea presence increase the chance of taking roots
- Avoid shallow waters (<10m), high temperature (>25°C) and salinity (>39PSU)

- Supports/blocks increases roots and are easy to fix undewater by stackes

- High mortality on the first year, suggested 36 months monitoring
- High genetic diversity, selection of resistant genotypes, priming (assisted evolution)

REFORESTATION: MULTILEVEL APPROACH

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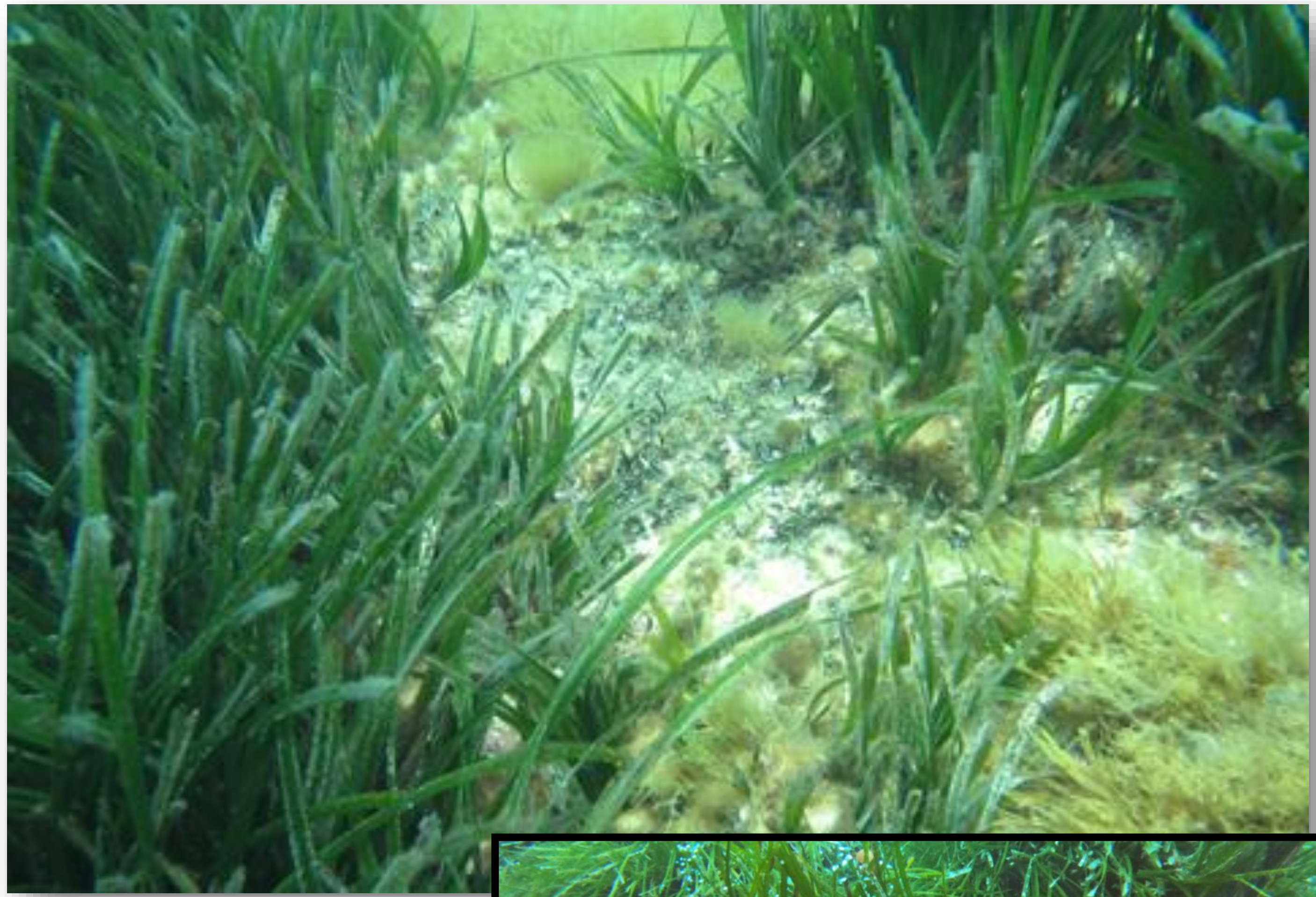
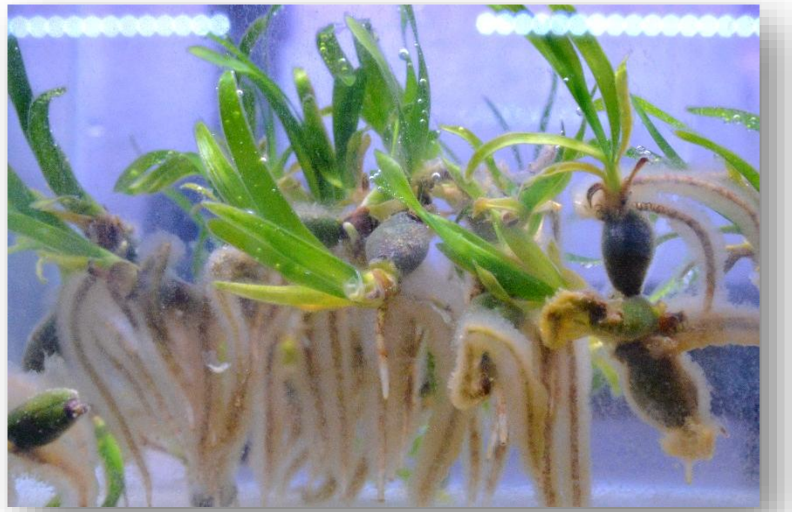


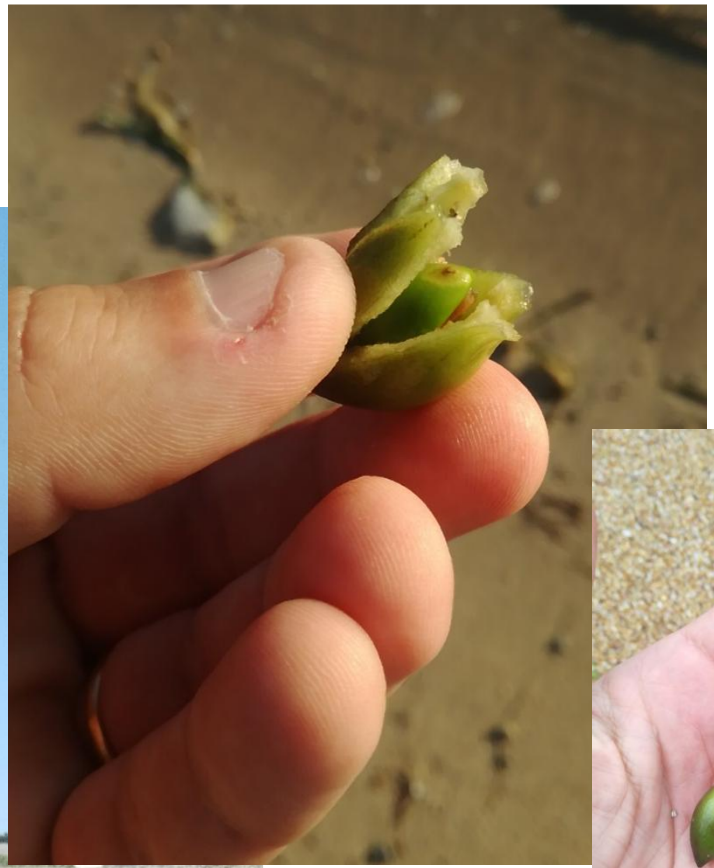
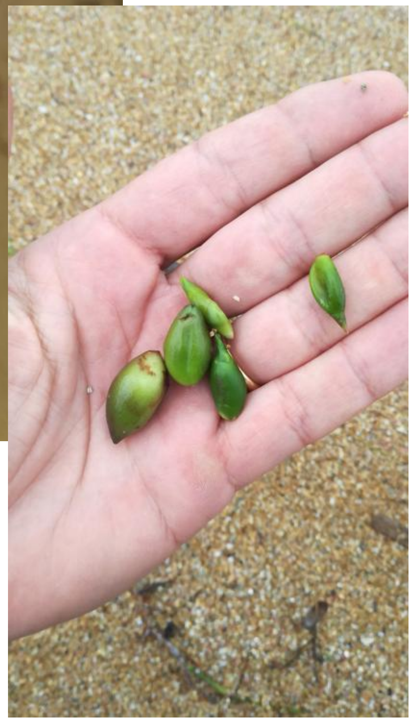
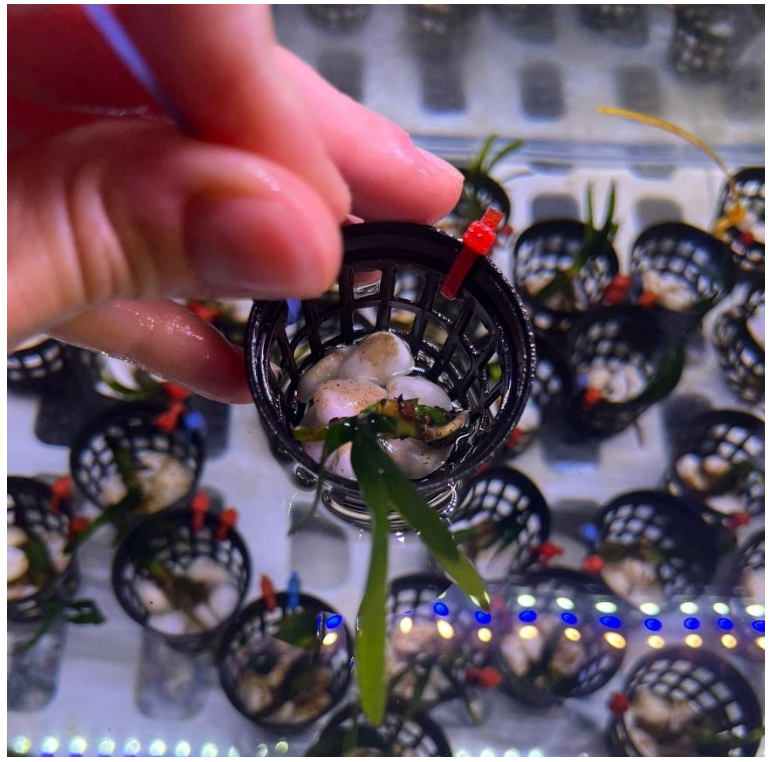
Repeated interventions over time



Stakeholder engagement (managers, local authorities, funders…)

Regolamentation and controls

Long term monitoring


… grazie dell'attenzione!