



# **The multi-use concept within UNITED – Case report piloting offshore wind and aquaculture multi-use in the Belgian part of the North Sea**

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EATiP webinar*



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# UNITED

*'Multi-**U**se offshore platforms demo**N**strators for boost**I**ng cost-effective and **E**co-friendly pro**D**uction in sustainable marine activities'*

## PROJECT MISSION

- Provide solutions to **improve operation, planning, & management** of multiple marine off-shore activities and propose **multi-use business models** to reduce costs and generate benefits.
- **Harmonize the logistic support**, service vehicles, equipment and infrastructures required by the multiple users within the pilots, addressing **risk management**, juridical and **governance** aspects in operational facilities
- **Demonstrate five core pilots** in the North Sea, the Baltic Sea and the Mediterranean involving industrial actors and integrating the knowledge, technologies and facilities, in a multi-use system for multiple sectors including **mixed energy production, aquaculture, environment restoration, and tourism.**



# Key facts

**KEY  
FACTS**

**DURATION**  
4 years  
(2020 - 2023)

**26  
PARTNERS**

**5 PILLARS**  
Technology  
Economics  
Environment  
Society  
Legal, Policy &  
Governance

**5  
PILOTS**

**3  
REGIONAL  
SEAS**



# PILOTS

## *Locations*





## Belgian pilot : 46km offshore in the Belgian part of the North Sea

### Partners:

- UGent (lead)
- Jan De Nul Group : dredging company
- Royal Belgian Institute of natural sciences
- Parkwind : windpark Belwind (Bligh Bank)
- Brevisco : mussel- & seaweed farmer
- Colruyt Group : retail

### Strategy:

- First nearshore testing of systems before moving offshore
- Focus on commercially viable options



## Objectives of the Belgian pilot

- Evaluation of wind farms as locations for restoring native flat oyster reefs in combination with culturing flat oysters for human consumption
  - Protected area
  - Scour protection as hard substrate
  - Synergy between aquaculture and restored oyster beds (short term versus long term)
- To compare growth of seaweed (sugar kelp) offshore and nearshore
  - Morphology and nutritional characteristics
- Focus this presentation: seaweed nearshore in pre-operational phase and first offshore activities





# Belgian Pilot: Seaweed cultivation

*Sugar kelp (Saccharina latissima)*

Chances:

- Space availability
- Clearer water compared to nearshore sites

Challenges:

- Strong currents/high waves
- Cultivation technology for upscaled production

*What is the effect of cultivation technology and genetic background of the sporophytes on growth of Saccharina latissima in the Belgian part of the North Sea?*



# Belgian Pilot: Seaweed cultivation first cultivation trials

*What is the effect of cultivation technology and genetic background of the sporophytes on growth of Saccharina latissima in the Belgian part of the North Sea?*

## Different net types

Nearshore net type

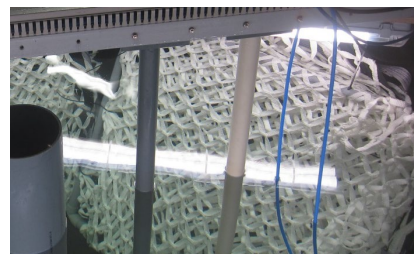


Offshore net type



## Different seeding techniques and strains

Nursery period



Direct seeding





# Belgian Pilot: Seaweed cultivation first cultivation trials

First successful harvest in May 2021





# Oyster restoration offshore 2021

*Installation of the tables June 2021*





# Restoration offshore 2021 in Belwind



# Restoration offshore 2021 in Belwind

*ROV operation October*



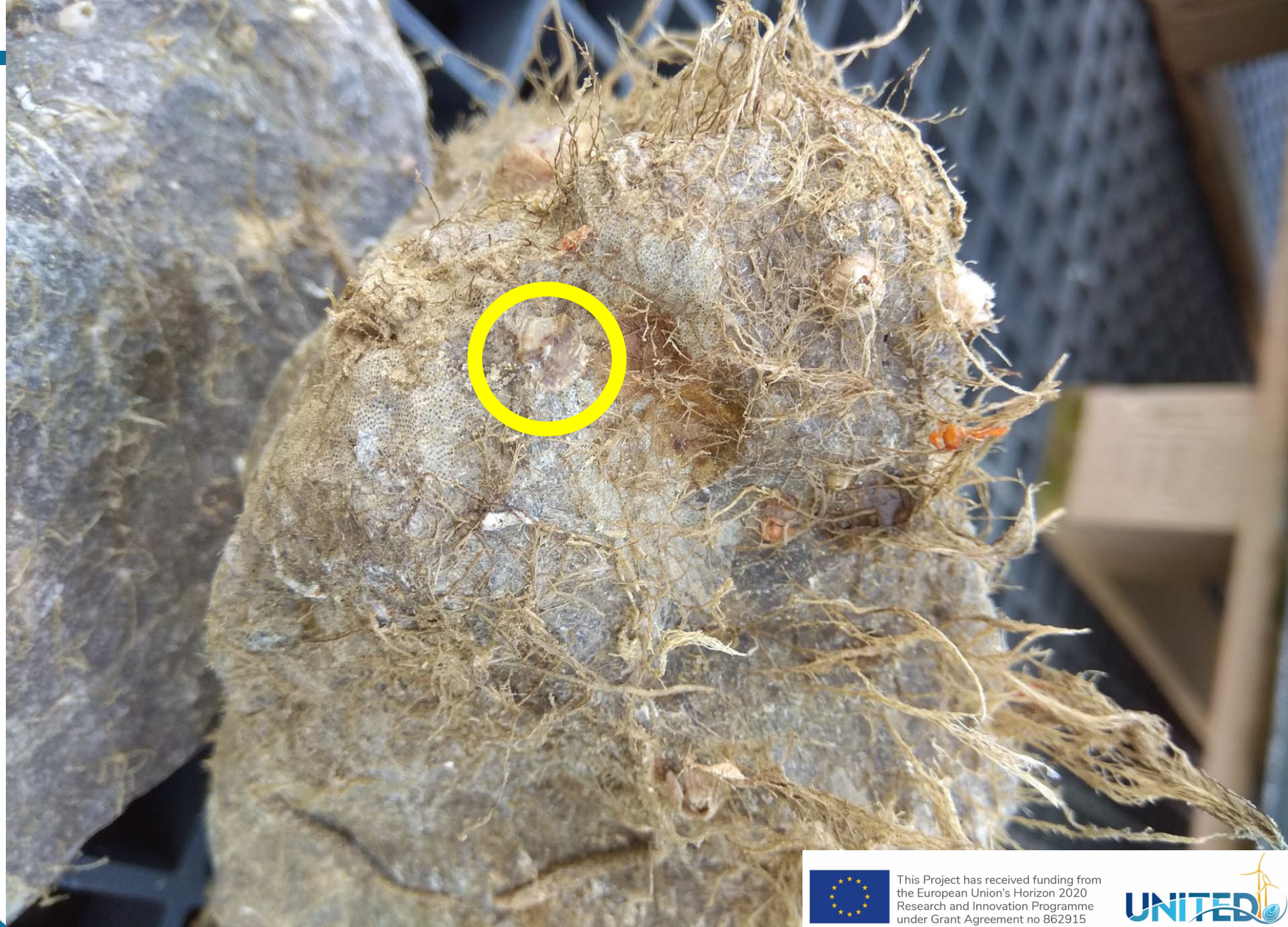
# Restoration offshore 2021 in Belwind

*ROV operation October*



- On the scour protection
- One gabion was sampled











A photograph of an offshore wind farm in a dark, choppy sea under a heavy, grey sky. Numerous wind turbines are visible in the distance, with one in the center foreground being more prominent. A small red ship is visible in the middle ground. The foreground shows the white railing of a boat.

**Thank you!**



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