

Making IMTA a reality!



NORTH SEA INNOVATION LAB

NSF has initiated the North Sea Innovation Lab (NSIL): an offshore lab of 6 km², with 6 research plots, 12 km from the coast of The Hague. NSIL is accessible for everybody who wants to pilot new technologies or test blue innovations for upscaling, such as co-use of wind farms.



Site:
North Sea Innovation Lab
Location:
The Hague, The Netherlands
Activity:
Pilot site for testing blue innovations and new marine technology
Operated by:
North Sea Farm Foundation

PILOT SETUP

NSIL has been used for the IMPAQT pilot with cultivation systems for seaweed (*Saccharina latissima*) and mussels (*Mytilus edulis*). These were grown in relatively close proximity to each other to approximate an IMTA setup as best possible in a challenging new environment, like offshore in the North Sea.

We monitored biotic and abiotic parameters by installing various sensors in the cultivation system. A communications buoy was installed to relay the data to onshore. This buoy also included a similar sensor setup and was located away from the cultivation units to have a reference measurement point. Parameters measured included temperature, salinity, turbidity, chlorophyll-a, light and the velocity and direction of the tidal current.

OUTCOMES



This experimental stage cultivation system, and sensor & communication setup was trialed in an offshore, North Sea setting.

The challenges of operating and managing offshore cultivation set-ups for seaweed and mussels, and monitoring systems were demonstrated and lessons learnt.

Remote monitoring was effective at an offshore location with the IMS using 4G coverage

The challenges of sensor fouling was underlined

The need to manage power supply on both small and costly sensors was highlighted.

The usefulness of remote monitoring of an offshore IMTA location for providing a complete new level of assurance of the farm was demonstrated



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