

## BIM EMFAF Work Programme Project Report 2023

<b>BENEFICIARY:</b>	Bord Iascaigh Mhara
<b>PROJECT REFERENCE NUMBER:</b>	23/KGS/STS-BG011-BR111-112
<b>NAME OF PROJECT:</b>	<b>Shellfish Survey Programme</b>
<b>IMPLEMENTATION PERIOD:</b>	1 <sup>st</sup> January to 31 <sup>st</sup> December 2023

### Project Scope

The Shellfish Survey Programme is divided between two sectors, bottom grown mussel, and oyster (*Ostrea edulis* and *Crassostrea gigas*).

The core part of the mussel work was the completion of subtidal seed mussel surveys, using acoustic data, biological sampling and GIS following a robust and reliable methodology. In addition, work relating to brood stock biomass estimation, increased bivalve larval monitoring, genetics of stocks, seed survival and condition/spawning stage of both seed mussel stocks and mature stocks was also included in the project scope. Additional scientific work was also undertaken to provide transplanting solutions to the bottom grown mussel industry in relation to the lack of recruitment of “wild” seed. Further work is carried out on bivalve larvae species screening.

The survey vessel the M.V.T. Burke II is typically used to locate and survey seed mussel beds on the East Coast, in Dingle Bay and other areas of Ireland. Post fishery stock assessment is carried out on previously marked settlements. It was also planned to use the vessel for work on bivalve larval monitoring and any other survey work as is required.

With regard to *Crassostrea gigas*, key challenges facing the sector including finding and keeping staff, issues around marine litter, upcoming European legislation on Single Use Plastics which comes into effect on 31<sup>st</sup> December 2024 and increasing mortality of farmed oyster stocks were investigated. Innovative alternative husbandry technology was assessed in the field at seven different sites and compared to the performance of traditional oyster husbandry. Growth and survival data was collected every four to six weeks as well as feedback on the suitability of the equipment. All stocks involved in the trials were retrieved at the end of the year for final analysis. Individual reports on each site as well as a summary report were generated.

The bi-annual Oyster Industry Workshop was planned for Dungarvan, Co. Waterford. This event brings all relevant stakeholders together and is an opportunity to present and explain updated legislation and relevant research & development projects. Challenges facing the industry are also discussed and inform future work programmes.

To maintain the momentum on establishing strategies for restoration and management of European native oyster, *Ostrea edulis*, fisheries, spatting ponds were commissioned. These facilitate on-going trials looking at the impact of long-term presence as well as the more recent outbreaks of *Bonamia* on the progeny of populations.



## Objectives

The main objectives of the bottom mussel programme are to identify and quantify sustainable seed mussel beds around the coast of Ireland and facilitate the search for seed mussel beds for the industry.

It also provides sound scientific information and data to DAFM to assist with resource management. It does so by producing survey reports that are made directly available to the industry and DAFM via the BIM website once an area of interest has been covered. Those reports detail the location of the seed mussel settlements, their estimated biomass, the nature of the seabed, the quality of the seed mussel. The survey information obtained is then used to determine if the beds are suitable for fishing or whether they should be closed for a certain period.

The objective of determining the genetic distribution of the mussel around the coast of Ireland was to access the locations with mixed or pure *Mytilus Edulis* (Me) *Mytilus galloprovincialis* (Mg) and hybrid populations. Testing the community ratio of relayed longline seed mussel on bottom mussel sites overtime should determine which species has a higher survivability rate. This will then feed essential information to industry which in turn can then select certain seed mussel sources which may have a higher rate of survivability in a particular bottom mussel relay site overtime. This project finished in 2023.

A new to market innovative husbandry system developed for the *Crassostrea gigas* oyster industry was tested in the field and compared with existing traditional husbandry systems in co-operation with oyster producers. The purpose of this work was to investigate its potential to reduce production costs and mortality while improving or maintaining oyster quality and minimising environmental impact.

Information on this and other new technologies, impending new legislation on Single Use Plastics along with insights into the impact of *Vibrio aesturianus* on both the French and Irish oyster industries, and market developments were to be presented and discussed at an oyster industry workshop. This workshop is a key opportunity for information dissemination and engagement between industry and other stakeholders.

## Outcomes

The project achievements for 2023 were:

- 30 days were spent at sea searching and assessing seed mussel beds. No viable seed mussel bed was identified. However, few settlements presenting one year old mussels were observed along east coast of Wexford from Rosslare to Cahore Point as well as south of Wicklow Head. There was no settlement in Castlemaine harbour.
- A survey on a mass mortality event following a storm was also carried out north of Wexford Harbour.
- The transplantation survival project in Castlemaine harbour was completed. The final report from ATU will be published in Q1 2024.
- All survey reports are available online at the following address: <http://www.bim.ie/our-publications/aquaculture/>
- Trials with a new to market oyster husbandry technology, the Roll'bag system, were run from March to December. The system was assessed in terms of growth, quality, survival, and site suitability. Results were mixed. Overall seed reared in the roll'bags was of a superior quality to the same stock reared in standard oyster mesh bags. Shape and quality of finished oysters improved in some sites but not all. There were either slight or no improvements in bays which consistently produce "speciale" oysters. Mortality rates did not increase in the roll'bags and for the most part was lower than in the controls. In areas where barnacle settlement is a feature the equipment became hard to handle and less efficient to



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work with at harvesting time. The results are due to be disseminated to industry in the first quarter of 2024.

- A two-day oyster industry meeting was hosted in Dungarvan, Co. Waterford in April combining presentations and discussions on key issues for the sector and site visits to nearby oyster farms where innovative technologies were on display and a practical demonstration on how to identify, record and report alien species observed on the shore was provided.
- Two native oyster spatting ponds were commissioned using stocks of separate origin. Poor weather conditions throughout July with continuous heavy rainfall made temperature control in the ponds difficult. As a result, despite excellent larval production in the ponds, settlement success was very low, and mortality was very high.
- Quarterly monitoring of native oyster nursery sites and twice-yearly monitoring of relay sites was undertaken to monitor survival. This data is provided to the Marine Institute for analysis.

## Summary of Project Spend

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Total Approved Costs	€205,000
Total Eligible Expenditure	€204,792
EMFAF Eligible Expenditure	€102,396
Exchequer	€102,396

Project Partners: DAFM, Marine Institute

Report by: Nicolas Chopin & Trish Daly

Date: February 2024



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