The Shellfish Centre RD&I is part-funded by the EU's West Wales and the Valleys European Regional Development Fund (ERDF) Operational Programme through the Welsh Government.

ERDF

Llywodraeth Cynulliad Cymru
Welsh Assembly Government

Ewrop & Chymru: Buddsoddi yn eich Dyfodol
Cronfa Datblygu Rhanbarthol Ewrop

Europe & Wales: Investing in your Future
European Regional Development Fund

PRIFYSGOL BANGOR UNIVERSITY

Shellfish Centre

Stakeholder Advisory Group Meeting

21th November 2019

www.shellfish.wales @shellfishcentre

The Shellfish Centre

1. Programme

West Wales and the Valleys ERDF

Priority Axis 1: Research and Innovation

1. Specific Objective

SO 1.2 To increase the successful translation of research and innovation processes into new and improved commercial products, processes and services, in particular through improved technology transfer from HEIs.

The Shellfish Centre

£2.8M ERDF grant, £1.1M Bangor University commitment,

Based in Marine Centre Wales, Bangor University

A new centre for shellfish science and innovation.

Builds on history of collaborative research

Working across the West Wales and the Valleys region to supporting growth of the sector.

Science to support shellfish from Wales:

- An innovative and growing industry

- Evidence-based sustainability

- High quality products from a high quality environment

Delivered through collaborative partnerships

What is the potential to increase shellfish production in Wales?

Previous ambition of Welsh Government : double shellfish production

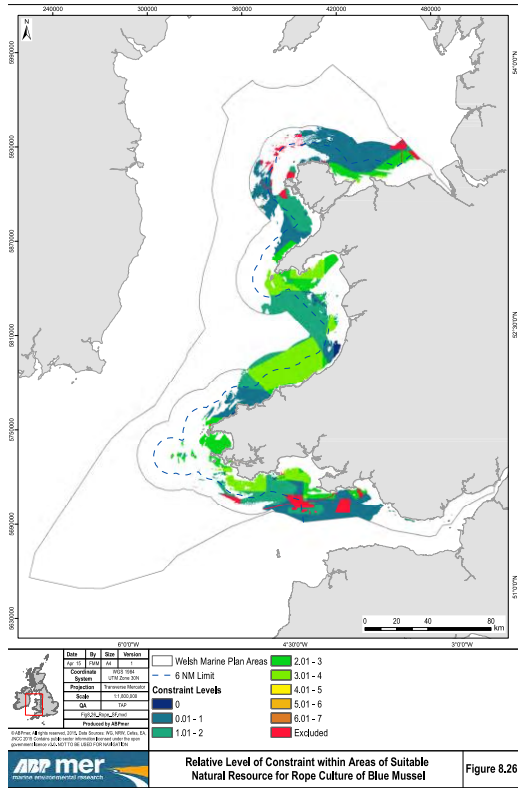
Welsh coastline 1,680 miles, Welsh Marine Area to 12nm 15,000 km^2

Shellfish productivity *circa* 30 tons Ha^{-1} = 3,000 tons km^{-2}

0.02% of Welsh Marine Area could support doubling of shellfish production

Not just about a few large farms; also increasing diversity and resilience…

- ***More producers, more diverse products***
- ***More related supply chain opportunities***
- ***Higher profile, more coherent identity***
- ***Strong research relationships***



The Shellfish Centre

Opening Workshop

Opportunities, Constraints and Research Needs for Shellfish Production in Wales

4th December 2018

Marine Centre Wales

37 external participants, over 200 individual comments that identified opportunities and constraints to the sector aggregated into 45 issues that were then ranked

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Space/Permission to use space

The biggest single limiting factor on growth in the sector across all of Europe and UK – also the case in Wales

High proportion of Welsh coast under some form of Natura 2000 protection

Driver for moving offshore – but same constraints apply

Need for environmental evidence and data




Coastal water quality

Microbiology, virology, biotoxins – new lab and equipment

Environmental risks and mitigation

- *Environmental studies*
- *Technical improvements eg depuration*
- *Detection technologies*

Catchment-to-coast modelling and risk management

- *eg rainfall, river flow risk indicators of shellfish microbial quality.*

Seed supply limitations

Main focus initially on wild seed

Molecular tools for identifying bivalve larvae

Modelling and monitoring of patterns of seed settlement

Technical trials of seed settlement

Potential for some aspects of hatchery production

Diversification

Over 95% of shellfish aquaculture production in Wales is from bottom-cultured mussels in the Menai Strait East several order.

Potential for farming of other species including:
Scallops, oysters, abalone, shrimp

Also – can extend to non-shellfish but compatible species eg macroalgae

New fisheries

Most support to fisheries will be through the EMFF-funded Fisheries Science Partnership

However, there is scope for the Shellfish Centre to undertake collaborative projects relating to potential new bivalve fisheries




How does it work?

Business diagnostic – short piece of work to help identify research needs

Collaborative project concept note, developed with potential partner(s)

Project topic screened for eligibility

- ***Within the scope of the Shellfish Centre?***
- ***Partner(s) eligible?***
- ***Collaborative – what will partners contribute?***
- ***Will the project results be publically available?***
- ***Contribution to overall impact of the Shellfish Centre?***
- ***Is there a risk of displacement of private sector providers?***

Contact agreed and collaborative project undertaken




Summary of collaborative projects active/in development

17 collaborative research projects at various stages of development

12 companies actively engaged

Currently in discussion with **6** companies about potential new projects

ERDF funding – target output indicators

Shellfish Centre Operation Indicators	
Number of enterprises cooperating with supported research institutions	20
Number of enterprises receiving non-financial support	25
Number of new enterprises supported	3
Private investment matching public support in innovation or R&D projects	£750,000
Number of enterprises supported to introduce new to the market products	3
Number of enterprises supported to introduce new to the firm products	20
Employment increase in supported enterprises	20

ERDF funding – target output indicators

Cross Cutting Themes: Case level indicators	
Positive action measure women	1
Female participation in STEM	1
Activity supporting speakers of the Welsh Language	1
Develop an Eco Code	1
Development of an organisational travel plan and sustainable transport initiatives	1
Resource efficiency measures	1
Local supply chain development	1
Community skill building activity	1
Developing/engaging CCT Champions	1

Summary of collaborative projects active/in development

WP2 Processing technology

- 2 projects

WP2 Coastal microbial water quality

- 3 projects

WP3 Sustainable supply of seed/spat

- 5 projects

Summary of collaborative projects active/in development

WP4 Environmental interactions of shellfish production

- None yet – some anticipated in relation to offshore shellfish production

WP5 Development of new production areas/processes

- 3 projects

WP6 Diversification

- 3 projects

Progress towards indicators*

Shellfish Centre Operation Indicators	Total	Year 1
Number of enterprises cooperating with supported research institutions	20	34 (17)**
Number of enterprises receiving non-financial support	25	12
Number of new enterprises supported	3	0
Private investment matching public support in innovation or R&D projects	£750,000	£38,000
Number of enterprises supported to introduce new to the market products	3	3
Number of enterprises supported to introduce new to the firm products	20	13
Employment increase in supported enterprises	20	0

* *based on anticipated project completions*

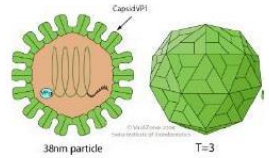
***both parties in collaboration can be counted*

Shellfish Centre

A Research & Innovation initiative supporting the development of the shellfish sector in Wales

SC-01: Assessment of virus infectivity in mussel and oyster

Noroviruses are responsible for the majority of shellfish-borne outbreaks and hence the detection of these viruses in oysters, mussels and other edible bivalve shellfish is essential. To date there is no reliable culturing system for human noroviruses to assess the infectivity levels of noroviruses in bivalve shellfish, hence molecular (qPCR-based) approaches are used to detection. Nonetheless, qPCR only detects a short segment of the viral genome and hence often overestimate viral concentrations and the associated health risks.



Impact

We will use cutting edge approaches to investigate norovirus infectivity in shellfish by addressing the integrity of the virus particles. We will also assess the usefulness of novel, culturable viral indicators to assess viral survival in bivalve shellfish during depuration. The results will significantly improve the effectiveness of depuration processes currently used in the shellfish industry.

Project Officer

Dr Kata Farkas is the lead researcher for SC-01

Project Partner

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Shellfish Centre

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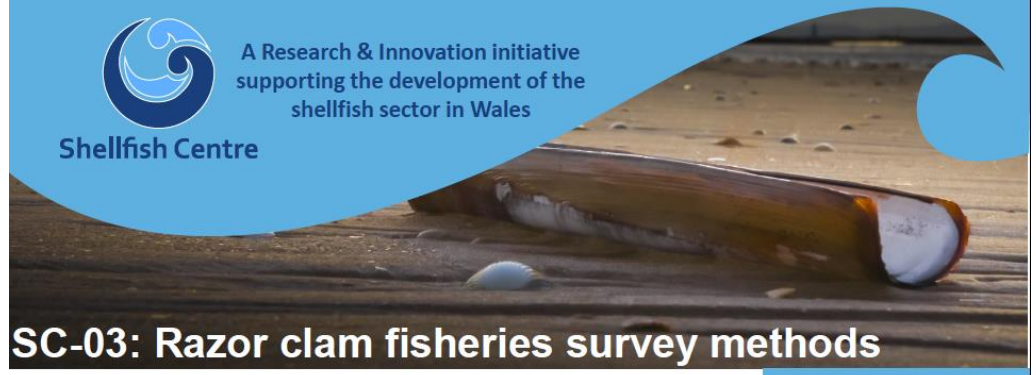

SC-03: Razor clam fisheries survey methods

Razor clams (*Ensis* sp.) are a high value and under-exploited live bivalve mollusc species within the Welsh and English portion of the Irish Sea. There may be a significant economic opportunity for a sustainable fishery to be established.

However, there are significant knowledge gaps about the abundance, distribution and stock structure of razor clams, with a need for development of standardised survey methods to help support evidence and inform management decisions. At the same time, enabling sustainable exploitation of these species, which live buried in sea-bed sediments, requires investigation of the environmental impacts and selectivity of fishing gear on target and non-target species.

Due to this lack of evidence, commercial fishing of razor clams is currently not permitted in Welsh waters or off the coast off north-western England. This project represents an example of a progressive collaboration between scientists at Bangor University, the North Western IFCA and a Welsh fishing company that will seek to tackle some of the knowledge gaps required to assess if a viable and sustainable fishery can be opened.

Impact

We will refine and assess use of electro-dredge gear under special derogation from the Marine Management Organisation and develop appropriate survey methodologies for assessment of exploitable razor clam biomass and habitat preferences in Liverpool Bay.

Project Officer

Dr Claire Szostek is the lead researcher for SC-02

Project Partner

Deepdock Ltd

Contact Us

www.shellfish.wales or @shellfishcentre

Marine Centre Wales, Bangor University, Menai Bridge. LL59 5AB

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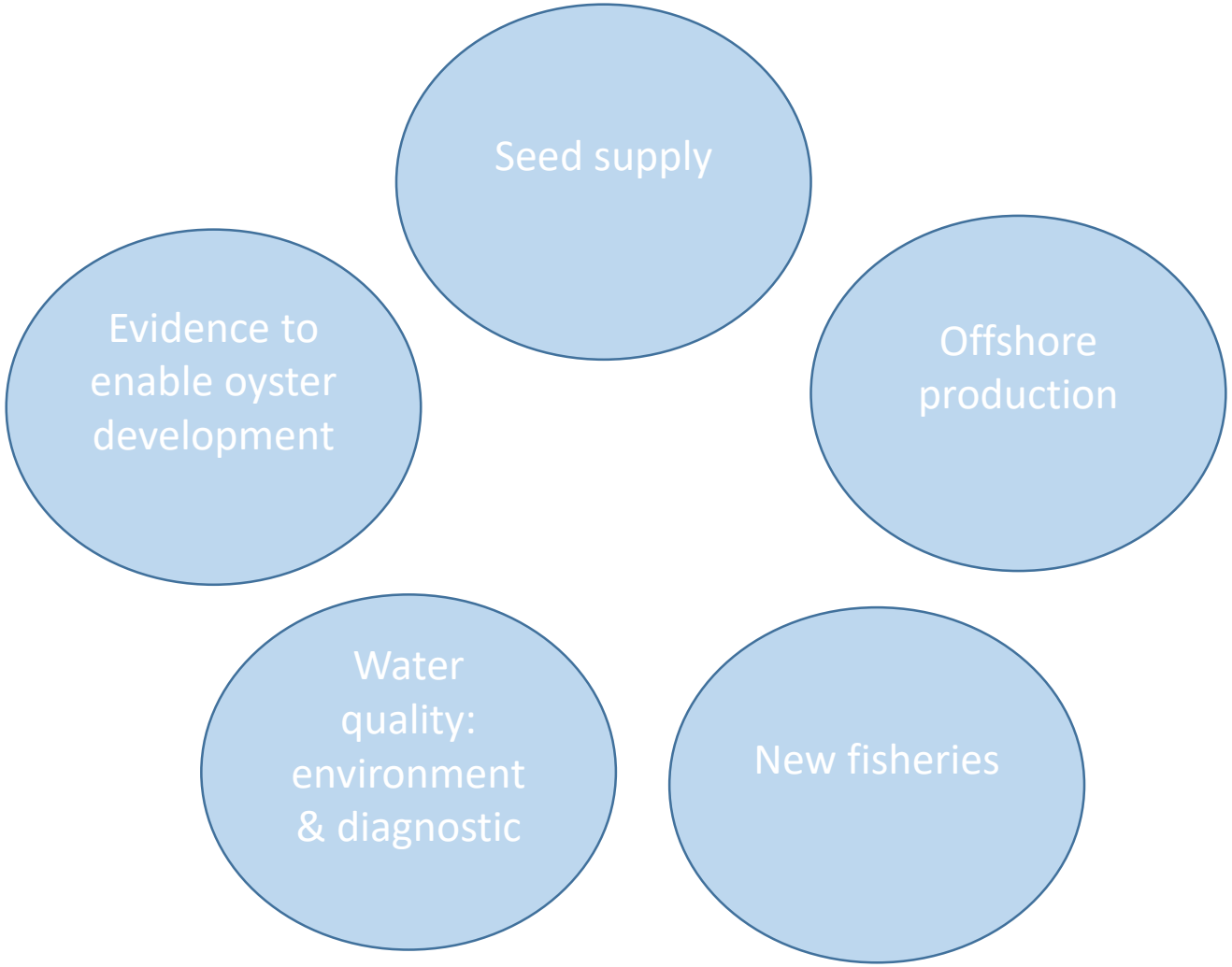
Future planning

- Complete investment in equipment and lab set up
- Complete research team (additional staff) now 6.5 FTE, one postdoc science officer to recruit (Dec 2019)
- Consolidate current active and planned research activity/projects – ensure effective delivery and impact
- Continue exploration of research project opportunities with new partners
- Two planned workshops 2020: Q1 Oysters, Q2 Offshore. Two further workshops tbc
- Conference summer 2021

Strategic focus areas to achieve impact from research



Exit strategy

- Current end date Nov 20121
- New funding opportunities
- Commercialisation