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Crown Estate Scotland

@SAGB

Shellfish Association of Great Britain

The FISHMONGERS' Company's FISHERIES CHARITABLE TRUST

Department for Environment Food & Rural Affairs

seafish

Royal Greenland

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SEPAmatic

Llywodraeth Cymru
Welsh Government

Review of Shellfish in the Blue Economy

SAGB CONFERENCE May 2022

INTEGRITY, COLLABORATION, COMMERCIALISM, EXCELLENCE

Who we are and what we do

- Mandated by Scottish Crown Estate Act 2019 (following 2017 devolution)
- Investing in property, natural resources and people to generate lasting value for Scotland – 'maintain and enhance' estate value
- Scottish Crown Estate spans length and breadth of Scotland. Includes rural estates, commercial property, mineral and salmon fishing rights, just under half of the foreshore and almost all of the seabed.
- Return all revenue profit to Scottish Government.

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Blue Economy Opportunities for Farmed Shellfish

- Part of Crown Estate Scotland's ambitions for development of the restorative aquaculture sectors
- Create momentum in the blue economy narrative with recognisable measures
- Collation of series of recent projects and reviews, addressing three challenges

  Where can it be done – growing production

  What are the markets/commercial potential for this

  How can this be achieved in a busy shared marine space
- Take the longer term ("horizon-scanning") view of potential
- Examine prospects for existing industry but also new investors – a 'seabed managers' perspective
- Resolve knowledge gaps to help inform and encourage investment decisions
- Acknowledging the challenges is integral to recognising opportunities – its not enough simply to point at the sunny uplands that research may represent.

Earlier Studies

Review of the contribution of cultivated bivalve shellfish to ecosystem services

A review of the scientific literature commissioned by Crown Estate Scotland

July 2019

Douglas A McLeod and Catherine McLeod

SEAFOOD SAFETY ASSESSMENT LTD

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Shellfish Critical Mass Development Plan Pilot - Clyde

Mussel farm, Loch Striven Photo courtesy of Janet Brown

FINAL REPORT

SUBMITTED TO

CROWN ESTATE SCOTLAND (INTERIM MANAGEMENT)

SEPTEMBER 2019

MARITEK

CONTACT: PETER@MARITEK.CO.UK

Scottish Shellfish Development
Critical Mass Model

Mussel production, Shetland: R. Cappell

REPORT

SUBMITTED TO

CROWN ESTATE SCOTLAND

&

ASSOCIATION OF SCOTTISH SHELLFISH GROWERS (ASSG)

NOVEMBER 2017

POSEIDON

AQUATIC RESOURCE MANAGEMENT

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Restorative Aquaculture – Technical Feasibility

Objectives:

To confirm the **technical** feasibility, within the 0 to 6 NM zone of the three areas defined:

1. mussel farm developments of > 500 tonnes of annual production,
2. seaweed farm developments, of > 1 km^2 in extent

Undertake subsequent assessments of:

1. The scope for the co-cultivation of both mussels and seaweeds at single developments of >1 km^2 and associated implications for production volumes
2. The scope and measures for mitigating deleterious and promoting beneficial interactions and relationships with local fishing interests.
3. This should include prospective arrangements for access for static gear activity as well as contractual opportunities in operational and quayside requirements.


Crown Estate Scotland

Prospects and Opportunities for Large-scale Restorative Aquaculture in Scotland

Final Report

December 2021

Innovative Thinking - Sustainable Solutions

ABP mer

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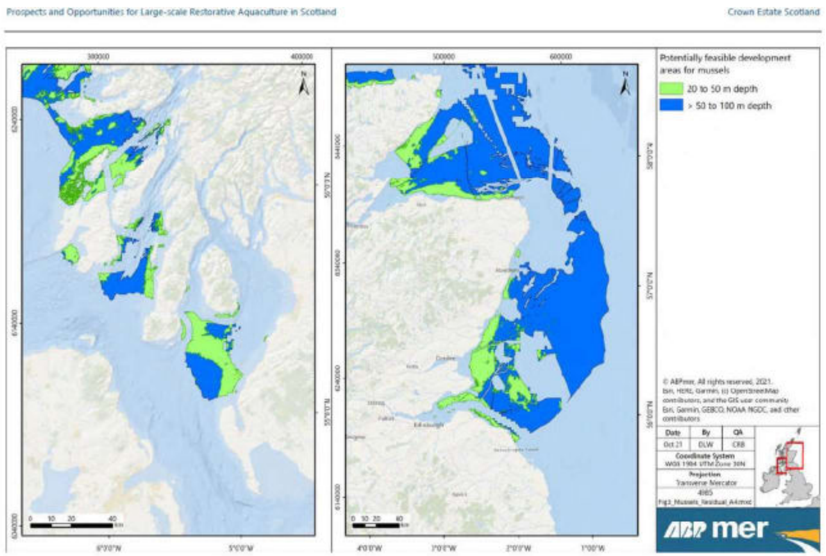
Restorative Aquaculture – Technical Feasibility



Key findings for mussel farms were:

- The potentially feasible development area within the 20m to 50m depth range was 2,962 km² on the east coast, and 679 km² was on the west coast.
- To (conservatively) develop a farm equivalent of 500 tonnes per annum - or 1,000 tonnes every two-year cycle - would need six generic 0.91 km² arrays, estimated to cover an area between 5.46–7.26 km², depending on clustering.
  This would represent:
  - 0.2–0.3 % of the potentially feasible area development areas in the East coast study area;
  - 0.8–1.1 % of the potentially feasible area development areas in the West coast study area;
- For production up to 10,000 tonnes, 48 arrays would need a sea area of 45 to 56 km² (depending on clustering). This represents:
  - 2.0–2.5 % of the potentially feasible development areas in the East coast study area;
  - 6.6–8.2 % of the potentially feasible development areas in the West coast study area.

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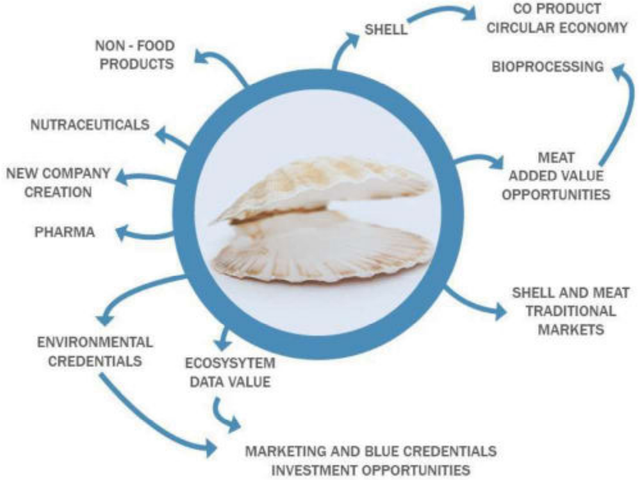
Farmed Shellfish – Alternative Markets

Prospects for existing and alternative products and services for farmed Scottish shellfish in three areas:

- (a) existing UK retail and foodservice sectors
- (b) markets for nutra / pharma / marine biotech products
- (c) markets for carbon off-setting or other green investment opportunities that might be serviced by bivalve shellfish farming in Scotland



SAOS

Alternative markets for farmed Scottish shellfish and associated requirements

Crown Estate Scotland
August 2021
FINAL REPORT

PREPARED BY:
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Farmed Shellfish – Alternative Markets

Appendices to the Report

1. Market Background and Context

The mature megatrends influencing consumer behaviour in the out of home market place

Four trends which remain important but have evolved through the pandemic

The pandemic has led to consumers placing even greater importance on their health, as the Government introduced a new health-kick campaign as part of their new Obesity Strategy.

Technology continues to streamline services and improve efficiency in the market, but now must be implemented in unison with social interaction.

A trend that continues to pick up speed and grow in importance. This year consumers place greater focus on food waste as many single-use initiatives are paused with the prioritisation of hygiene.

Having had to 'stay at home' for a prolonged period, consumers are more conscious of where their food comes from, seeking transparency and British produce, especially as Brexit takes effect.

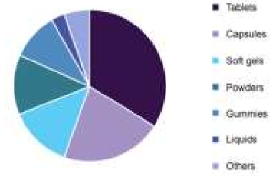
Source: The Knowledge Bank – Foodservice State of the Nation: April 2021 – Lumina Intelligence Market Sizing (Figures in Billions)

2. Market Prospects for Nutra/Pharmaceutical Products

Dietary supplements market

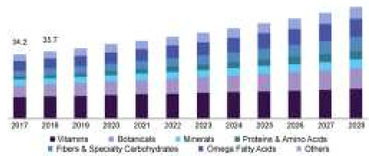
- Energy and weight management application segment led the market and accounted for a revenue share of 29.5% in 2020.
- In the US, the dietary supplement market value was over US$36 bn in 2020.
- Tablets and capsules accounted for over 50% of the market in 2020

Global dietary supplements market share, by form, 2020 (%)



Source: www.grandviewresearch.com

U.S. dietary supplements market size, by ingredient, 2017 - 2028 (USD Billion)



Source: www.grandviewresearch.com

NewNutrition Business

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Farmed Shellfish – Alternative Markets

Evidence of increasing interest in 'planet-friendly' food and production methods moving into the mainstream?

https://thefishsite.com/articles/frozen-food-giants-look-to-develop-farmed-shellfish-products-david-willer-cambridge

"Bivalve farmers are producing one of the most sustainable meat products on the planet and one of the few foods where the more you farm the more you can potentially benefit the ocean ecosystem"

DR DAVID WILLER, CAMBRIDGE UNIVERSITY

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Ecosystem Service Delivery – Another Market?

- *We like the potential positive impact of bivalve farming, we think it's a very exciting opportunity for the fund.*" (Allan Benhamou for the Blue Impact Fund)

- *"It is time to recognise the value of this type of ecosystem services and the many others provided, to monetise them, and use them as financial and regulatory incentive tools"* (DR THIERRY CHOPIN, UNIVERSITY OF NEW BRUNSWICK)

- So, a pressing argument for a closer examination of prospects for PES in the marine environment as a viable market/access finance?

- Requirement must be for a demonstrable and quantifiable service – monitored, managed, and auditable. ie. clearly restorative – perhaps using the same SEPA metrics that quantify fed aqua impact to do the same for positive changes arising for restorative developments

- Will need more work (surveys) and increase cost (incl. regulatory overheads) but worth it if it yields additional margins? *If polluters pay, should restorers be paid?*

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Farmed Shellfish – Fisheries Interactions/Co-existence

- A key requirement in further development of a functioning blue economy
- Aim to avoid winners and losers amongst interests experiencing ‘marine squeeze’
- Three key inputs to improving co-existence of these sectors, arguably all sectors sharing the marine environment;
  - Policy, planning and licensing
  - Guidance and collaborative working (keystone)
  - Technical solutions
- Aim is to pilot measures identified through SWOT analysis – in one or more locations.
- Raises the questions of whether authorities need to be more active in facilitating and manging this rather than leave it to the protagonists.
- Should marine interactions management be someone’s day-job – rather than over-reliance on lines on maps?

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Blue Economy Opportunities – So what next?

Once again, its not enough to simply point at the sunny uplands. Recognise necessary collective effort that arguably starts with us – the authorities and agencies – putting the necessary stepping stones in place;

1. Regulate use of space to grow production that "optimises the wider value of that space" – or put another way, successfully co-locates production, restorative environmental gains and commercial fishing/navigation:- e.g.
   - Integrate use of trial deployments in licensing – confirm value for investment (precedent exists)
   - Progress natural capital, biodiversity and marine carbon flow quantification, so business plans can project beneficial change and these can be monitored – start with metrics in use now to establish monitoring (pilot?)
   - Fund interactions management post(s) to support co-existence – in absence of/to complement sectoral plans

2. Collaborate to accommodate the business and not just the activity:- e.g.
   - Recognise different market-related critical mass requirements – critically, how to accommodate scale
   - PES in the marine environment– we're all talking about it. What will/can it actually look like? Need to monetise the value of biodiversity enhancement, carbon sequestration and nutrient mitigation if this is to happen
   - Seed supply – more active engagement by authorities here to allow for producer diversification/wild access?

3. Recognition of farmed bivalve shellfish as a serious industry for a country with the marine resource at our disposal – a clear public narrative of partnership.

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Thank you!

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52nd Annual Conference

Shellfish Association of Great Britain

#SAGB52