



Sustainability & The Circular Economy

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Bord Iascaigh Mhara (BIM)
Bioeconomy Week Ireland, Blue Bioeconomy Perspectives

20
22

THE BUSINESS OF SEAFOOD

A Snapshot
of Ireland's
Seafood Sector



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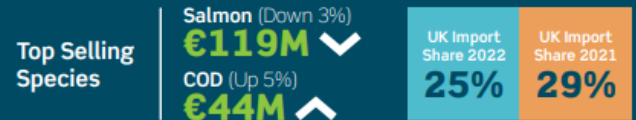
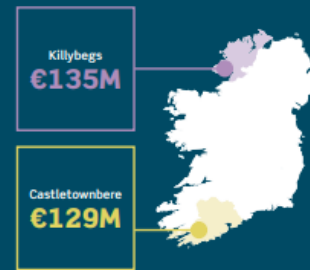
€1.3 billion

Estimated GDP
of Irish Seafood
industry

The Irish Seafood Economy 2022



Our Biggest Fishing Ports (Value of Landings)



Ireland's Main Export Markets



Breakdown of Top 20 Landed Species by the Irish Fleet

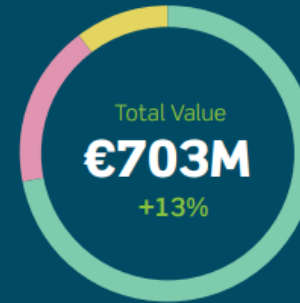
Rank	Species	Value (€)	Volume (tonnes)	% Change
1	Dublin Bay Prawn	€82M	6,200 tonnes	+24%
2	Mackerel	€80M	52,300 tonnes	+10%
3	Crab	€25M	7,200 tonnes	+19%
4	Monkfish	€18M	3,800 tonnes	+1%
5	Horse Mackerel	€15M	15,500 tonnes	-8%
6	Haddock	€13M	5,500 tonnes	+9%
7	Lobster	€11M	600 tonnes	+29%
8	Hake	€11M	3,300 tonnes	+9%
9	Tuna	€9M	3,400 tonnes	+23%
10	Blue Whiting	€8M	28,600 tonnes	-20%
11	Whelk	€7M	4,600 tonnes	0%
12	Scallop	€7M	2,200 tonnes	+22%
13	Megrim	€7M	1,800 tonnes	-29%
14	Whiting	€4M	2,200 tonnes	-27%
15	Shrimps	€4M	200 tonnes	-5%
16	Boarfish	€3M	13,700 tonnes	+8%
17	Herring	€3M	5,800 tonnes	+15%
18	Sole	€3M	200 tonnes	-3%
19	Cod	€2M	500 tonnes	+18%
20	Sprat	€2M	7,200 tonnes	-33%
	Others	€23M	9,800 tonnes	+24%

€336M
in 2022

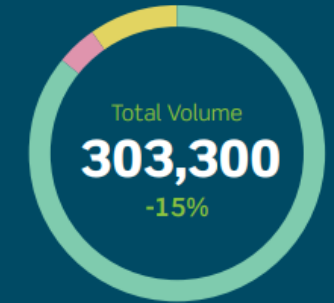
174,600 tonnes

+14% Value Growth

By Value (€)



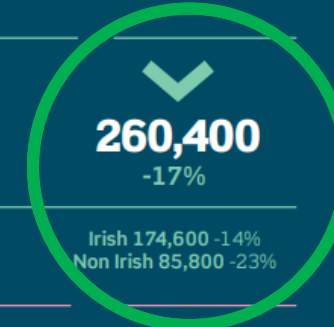
By Volume (tonnes)



↑
€507M
+14%

SEA-
CAUGHT
FISH

Irish €336m +14%
Non Irish €171m +14%



Irish 174,600 -14%
Non Irish 85,800 -23%

↑
€125M
+13%

FARMED
FINFISH

↓
13,900
0%

↑
€71M
+10%


FARMED
SHELLFISH

↑
29,000
+3%

Factors affecting profitability

Fuel

Energy crisis impacts on seafood sector sustainability



Average price per barrel in 2021: \$70⁹⁰

Average price per barrel in 2022: \$100⁹⁴

Price growth in 2022: +42%

Labour Force Study

Employment Conditions in the Irish Fishing Fleet



In 2022, BIM completed a labour force analysis of the Irish fishing industry. This analysis provides a detailed assessment of the employment characteristics of the sector. Key findings show that the Share fishing model dominates all fleet segments with the exception of the pelagic sector where the majority of crew are employed on a PAYE basis.

70% of pelagic fleet crew employed under PAYE system

71% Polyvalent crew employed under share system

Quotas

Fishing Quotas for Stocks Exploited by the Irish Fishing Fleet



163,000 tonnes, the total quota available to the Irish fleet

Value of Quota: €209m



The Circular Economy

By-product valorisation

Byproducts



A by-product or byproduct is a secondary product derived from a production process, manufacturing process or chemical reaction; it is not the primary product or service being produced.



Species:



Salmon



Blue Whiting



Mackerel



Horse Mackerel



Mussel

Research Partners:



End Products:





4 PAW: Pet Aging and Wellness: Utilisation of fish processing by-products for the development of dog nutritive and health ingredients with a focus on pet aging and heart health

Project reference number: 18/SRDP/003

Project contact persons:
 Dr Maria Hayes, Food BioSciences Department, Teagasc Food Research Centre, Ashtown, Dublin 15, Ireland. Tel: +353 1 8059957; Email: Maria.Hayes@teagasc.ie
 Mr. John Fagan, Bord Iascaigh Mhara (BIM), Dun Laoghaire, Dublin, Ireland. Email: Fagan@bim.ie
 Dr Michael Gallagher, Bord Iascaigh Mhara (BIM), The Pier, Killybegs, Co. Donegal. Email: Michael.Gallagher@bim.ie

Project commencement and finalisation date:
 01/04/2019-30/05/2020

KEY FINDINGS:

- **Protein hydrolysates** represent key ingredients to **enhance significantly the feed nutritional value of petfood's**, providing a high level of essential small soluble compounds.
- Hydrolysate can be used as a **pet food additive to reduce weight gain**
- H&G gelatine hydrolysate has the potential to be used as an ingredient in pet food for **maintenance of blood pressure and prevention of high blood pressure.**
- It also has a potential anti -**inflammatory role as ACE-I** is also a target in terms of **vascular inflammation**

The global pet food sector is worth ~ €1 billion per annum and the US market represents about 50% and the EU around 25% of this market.



3

BBPP project: By-product bio-stimulant and pet-food products: Profiling and reduction of liquid by-products generated from salmon, whitefish and pelagic processing and development of feed and bio-stimulant products.

Project reference number: 17/SRDP/008

Project contact persons:

Dr Maria Hayes, Food BioSciences Department, Teagasc Food Research Centre, Ashtown, Dublin 15, Ireland. Tel: +353 1 8059957; Email: Maria.Hayes@teagasc.ie

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Dr Michael Gallagher, Bord Iascaigh Mhara (BIM), The Pier, Killybegs, Co. Donegal. Email: Michael.Gallagher@bim.ie

Project commencement and finalisation date:

13/12/2017-28/02/2020



DAY 16					
Control	Mac	Mac	S&W	S&W	
10	13	15	20	20	
					
18	20	20	20	20	Basil
8	11	9	15	13	Dill

KEY FINDINGS:

- Blood-waters represent a source of **essential amino acids and fatty acids** that have potential for use as bio-stimulants.
- The application of mackerel blood-waters and salmon and whitefish blood-waters independently at a dose rate of 5% (w/v) to horticultural plants basil, dill, chives and cayenne peppers **enhanced seed germination by almost 30% over a 16 day period compared to a control (water).**

The global market for Plant Bio-stimulants is projected to reach ~€3.5 million by 2025, driven by the growing focus of governments worldwide to reduce agriculture's growing carbon footprint and make it more sustainable.

A photograph of two fishermen on a boat at night. The man on the left has a long white beard and is wearing a dark jacket and jeans, gesturing with his right hand. The man on the right is wearing a dark jacket with an orange safety vest and dark trousers. They are standing on the deck of a boat, with fishing nets and equipment visible in the background. The scene is illuminated by a blue light, creating a moody atmosphere.

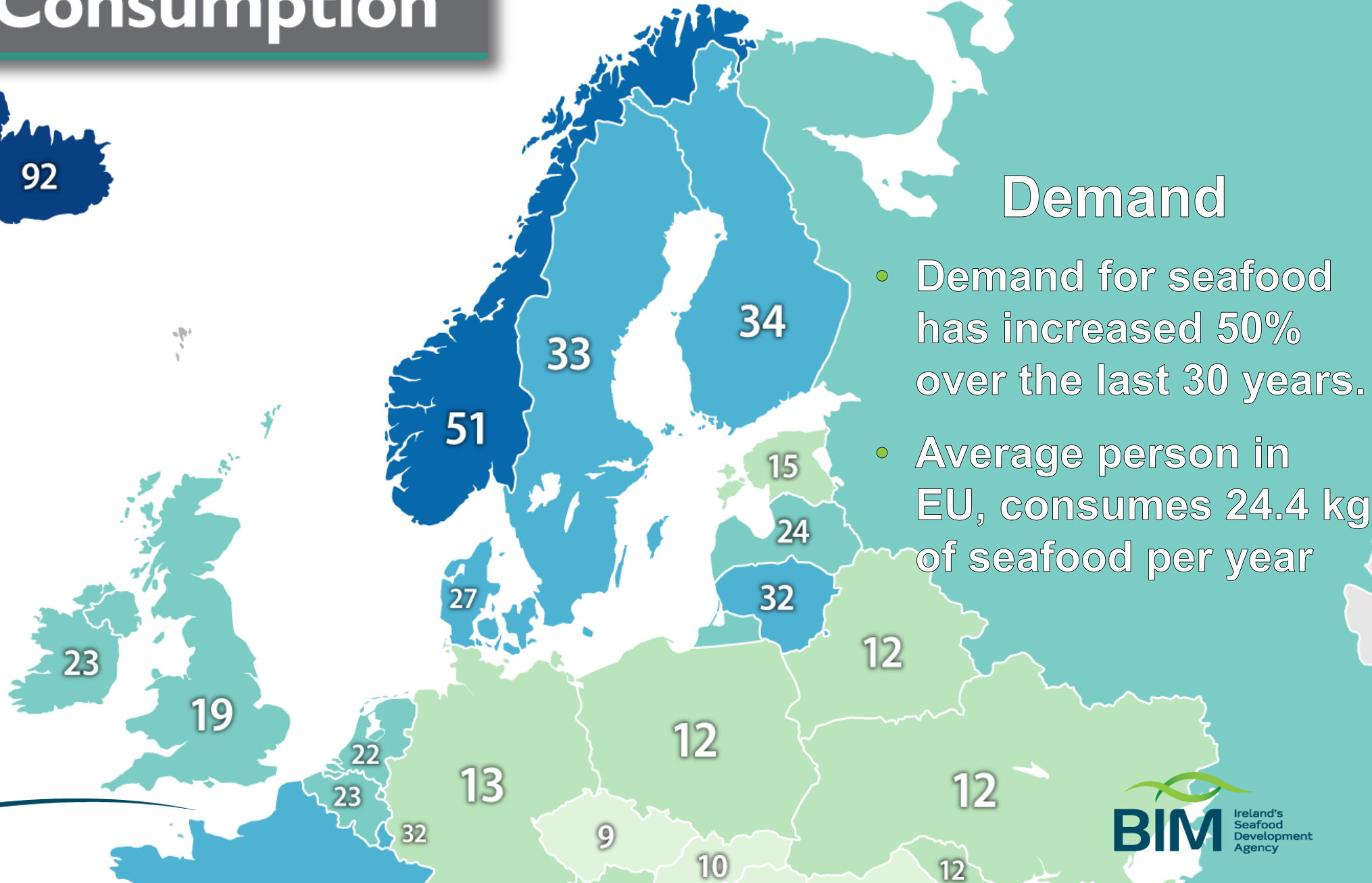
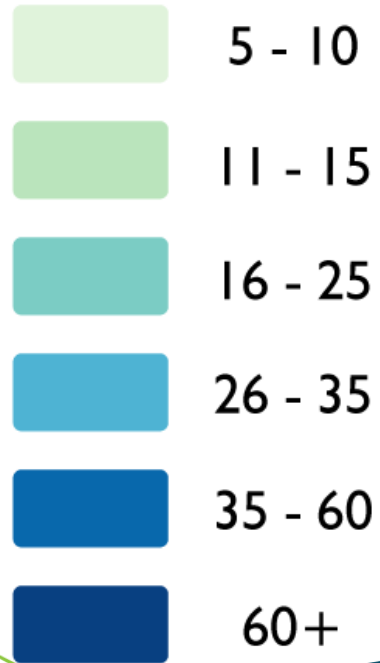
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Sustainability

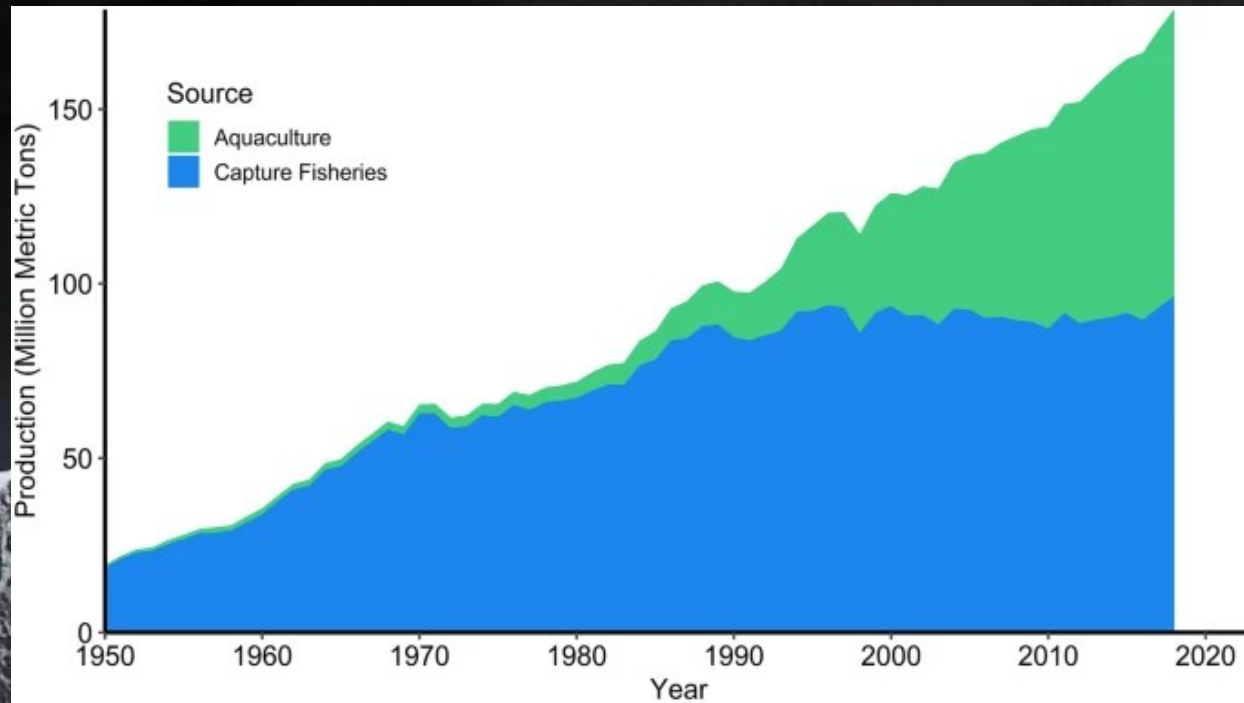
Seafood Consumption

Seafood consumption in kg per capita per year



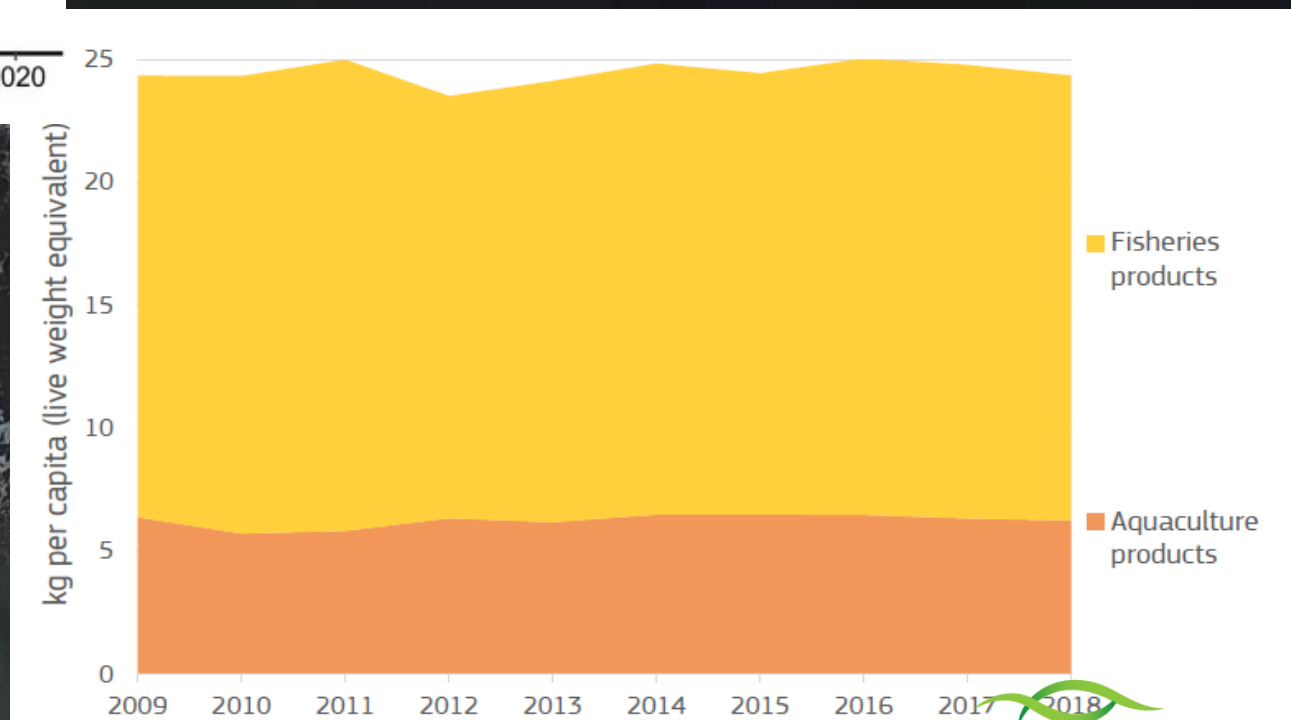
Demand

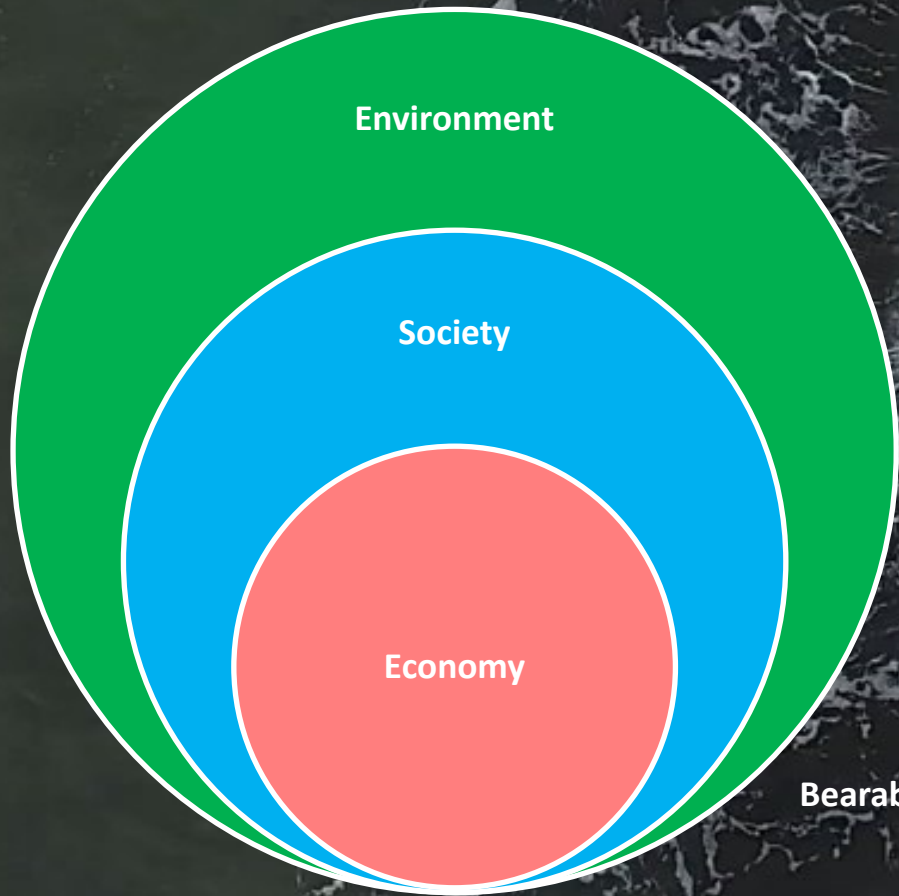
- Demand for seafood has increased 50% over the last 30 years.
- Average person in EU, consumes 24.4 kg of seafood per year



- Estimated that 50% of seafood now comes from aquaculture.
- 5kg seafood/capita in EU from aquaculture
- EU differences to global average
- Growth needs to be sustainable

Supply



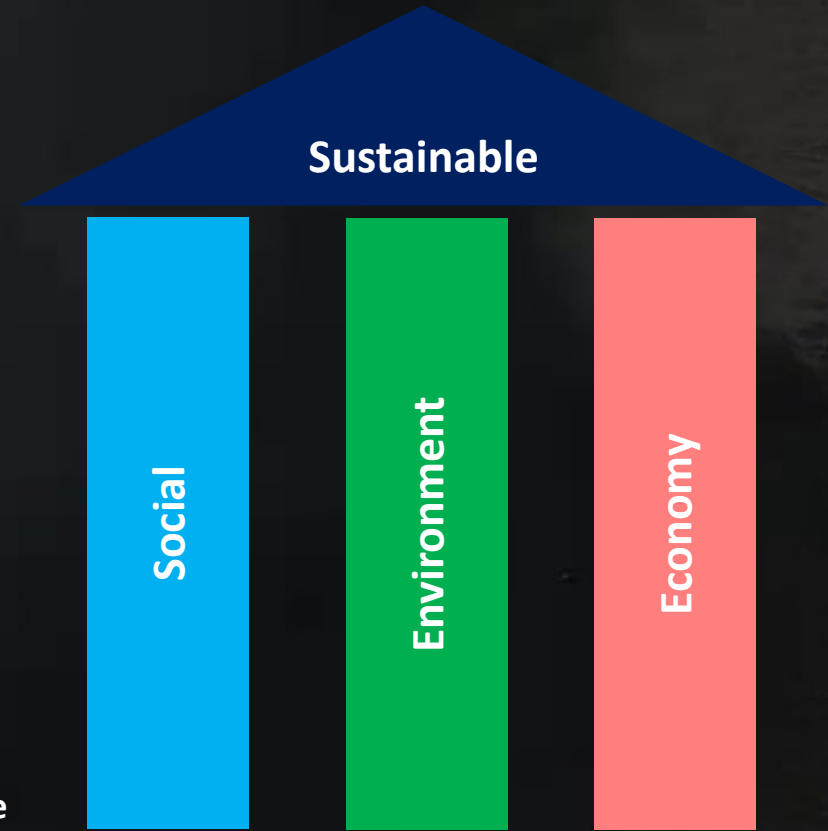


Bearable



Equitable

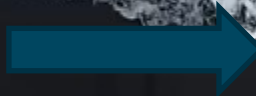
Viable



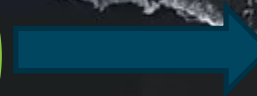
Sustainable Seafood



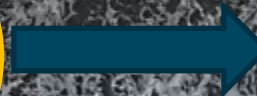
MEASURE



IMPROVE



MEASURE



COMMUNICATE



BIM Ireland's Seafood Development Agency

Annual Aquaculture Report
A Snapshot of Ireland's Aquaculture Sector

2022

bim.ie

Co-funded by the European Union

An Roinn Talmhaíochta, Bia agus Ádh
Department of Agriculture, Food and the Marine

BIM Ireland's Seafood Development Agency

Carbon Footprint report
of the Irish Seafood Sector

Bord Iascaigh Mhara
2023

Riadas na hÉireann
Government of Ireland

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BIM Ireland's Seafood Development Agency

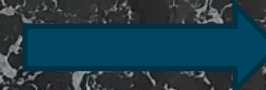
Seafood Sustainability
Report: Aquaculture
2023

Riadas na hÉireann
Government of Ireland

Co-mhaoinithe ag an
Aontas Eorpach
Co-funded by the
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BIM Seafood Development Agency

Sustainability In Motion



- **Develop simple KPIs across the pillars**
- **Env – surface use (kg/ha), emissions (kg CO₂ eq./kg)**
- **Soc – age, permanence of farmer/farmer**
- **Econ – labour productivity, profit, GVA**
- **Innov – new processes, new products**



Sustainable and circular bioeconomy

[səs'teɪnəbl ænd 'sɜ:kjʊlə 'baɪəʊɪ(:)'kɒnəmi]
- *adjectives + noun*

An agrifood model promoting biological innovation, responsible consumption and production, and zero waste.



**Circling
back...
To Circular
Economy**



Food and Agriculture
Organization of the
United Nations





Summing it all up

- The Seafood sector is a sustainable food production sector
- The seafood sector is a relatively low GHG emitting sector
- Irish seafood is a relatively low carbon food
- Need to develop and promote KPIs that highlight the environmental and sustainability credentials of the sector

Thank you for your time

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