



Rialtas na hÉireann
Government of Ireland

Focus on Marine & Maritime

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Marine & Maritime

The Irish Blue Economy is a diverse sector that converges with many other sectors of the economy



GLOBAL MARKET

\$1.5trn

\$3.2trn

Growth forecast
by 2030

Source: The Ocean Economy in 2030



IRISH MARKET SIZE

€5.5bn

Turnover in 2017

€2bn which is **1%**
Gross Value Added of GDP

Source: Ireland's Ocean Economy 2017, SEMRU Update, June 2018



TARGET:

Double the value of Ireland's Ocean Economy to 2.4% of GDP by 2030*

Source: Harnessing Our Ocean Wealth - An Integrated Marine Plan for Ireland 2012
*This includes both direct and indirect GVA which currently stands at 1.8%

EMPLOYMENT

32,500

in 2017

Source: Ireland's Ocean Economy 2017, SEMRU Update, June 2018

VALUE OF MARINE ECOSYSTEM SERVICES ESTIMATED AT:

€819m

Carbon sequestration services

€317m

Waste assimilation services

€11.5m

Scientific and educational services

€11.5m

Coastal defence services

€4m

Seaweed harvesting



Source: Valuing Ireland's Blue Ecosystem Services, SEMRU 2018



Prepared by the Department of Business, Enterprise and Innovation



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The sector in numbers

Global ⁱ	Market Size		Growth Forecast (2030)		
		\$1.5trn		\$2.8tn – \$3.2trn	
Ireland ⁱⁱ	Turnover (2017)	Gross Value Added (GVA) (2017)	GVA % Change 2015- 2017	% of GDP	Employment (2017)
	€5.5bn	€2bn	21.9%	1%	32,500

i) The Ocean Economy in 2030, OECD (2016).

ii) Ireland's Ocean Economy 2017 (SEMRU, Update, June 2018)

Note: There is a recognised challenge in providing values on the global, EU, national ocean economies. This is due to different definitions used as well as difficulty accessing the data (e.g. from Eurostat, National Statistics Offices). This is particularly the case for Ireland, where the CSO have issues providing the data due to confidentiality.

Description of the sector globally

- For the purposes of this brief the ocean economy is comprised of activities across a number of sectors:
 - **Bioresources/Food:** sea fisheries, aquaculture, seafood processing, seaweed, marine biotechnology and bio products
 - **Energy:** offshore oil and gas exploration and production, marine renewable energy: offshore, wind, wave and tidal
 - **Tourism and Leisure:** tourism and leisure activities and visits in marine & coastal areas: sea-based and coastal tourism e.g. sailing, surfing, diving, sea angling etc., international cruise industry (note major urban centres located on the coast are not included in the Irish definition, the EU however do include these urban areas in their statistics)
 - **Shipping, Maritime Transport, Shipbuilding and Maritime Commerce/ International Shipping Services:** marine commerce and ship leasing, ports, shipping and maritime transport
 - **Marine support activities:** marine manufacturing, marine/water environmental services/consultancy, engineering and construction, and marine retail services
 - **High-Tech** products/ ICT for the sea, sensors, big data, IoT etc.
- Globally the sector accounts for **direct employment of 31 million** of which fisheries accounts for approximately one third and tourism accounts for one quarter.

- Employment generally incorporates a **diverse range of occupations** across many levels of activity. These include management (including specialist management functions); professionals (e.g. engineers, scientists); associate professionals (e.g. technicians); operatives (e.g. riggers, deckhands); sales and other occupations.

Refer also to Focus on Energy, Clean Tech & the Bioeconomy, Agri-food & Beverages, Transport & Logistics, Tourism & Hospitality and Technology.

Global developments and implications

- The OECD has forecast the global ocean economy to double in size to by 2030 to €3 trillion, with many sub-segments set to grow faster than the world economy (marine aquaculture, capture fisheries, fish processing, offshore wind, and port activities).
- Employment is set to reach 40 million, outpacing overall growth of the global labour force. Marine aquaculture, capture fisheries, fish processing, offshore wind and port activities also set to experience rapid employment growth.
- Challenges that are being addressed at a global, EU and national level specific to our oceans include:
 - Rapid changing regulation and governance and growing pressures on the resource and ocean space. The need for integrated governance and regulation is becoming more urgent, involving a balance between regulation and development, underpinned by an increase in evidence to support decision-making.
 - Changing climate and the impact on our oceans and coasts – changing distribution of resources such as fisheries, increased acidity in our oceans (ocean acidification), increased frequency of climate events, sea level rise and coastal flooding.
 - Environmental issues and climate targets (energy and CO₂, sustainability) – e.g. Shipping and decarbonisation, depletion of fisheries and loss of coastal habitats, pollution and protection of important marine ecosystems that provide vital ecosystem services (e.g. eight million tonnes of plastic waste enter the ocean annually, microplastics in our oceans, water and food chain, offshore and coastal habitats and marine biodiversity).
 - Public perception and acceptance of developments at land and sea.
 - Increase of global investment in aquaculture now means that half of all fish consumed world-wide has been farmed rather than caught. The percentage of farmed fish supplied will continue to rise.
- Technological change is having an impact particularly around: Smart Ports, Big Data and ICT for the sea, autonomous vessels, cyber security, ocean observations and modelling and prediction capabilities, mapping of the seabed, and offshore renewables.
- In terms of Shipping, although the fuel mix indicates a declining share of heavy fuel oil (HFO), in 2030 the demand for HFO will be at least the same (In a Status Quo scenario) if not 23% higher (in a Global Commons scenario) compared to its 2010 levels. Despite improvements in design and operational efficiency and

current/future policies, CO2 emissions from shipping will not decrease dramatically in 2030. A complete overturn of the marine fuel landscape will be ‘an evolution’ rather than a ‘revolution’.¹

The sector in Ireland

- The direct economic value of Ireland's ocean economy was €1.97 billion in 2017 which represents a 21% increase on 2015². The 2017 estimates also suggest that Ireland's ‘blue/ocean economy’ continues to grow at a faster pace than the general economy. Total direct and indirect value to the economy is €3.71bn³.
- *Harnessing Our Ocean Wealth – An Integrated Marine Plan for Ireland* (2012) outlines a number of targets including the aim to double its value to 2.4% of GDP by 2030 (both direct and indirect Gross Value Added).
- The Irish blue economy employs between 30,000- 40,000 people (depending on definitions) directly and a further 13,000 indirectly. Ireland's ‘traditional’ sectors continue to be the top performing sectors of the Irish Ocean Economy, dominated by shipping and maritime transport, bioresources/seafood and tourism in marine and coastal areas.
- In terms of skills, the industry in Ireland requires technicians and general operatives as well as high-skilled technical staff and professions. The sub-sectors with the greatest demand for skills are seafood, maritime transport and shipbuilding/repair and related offshore/marine services, and marine tourism.
- While 2016 saw a substantial increase in activity in the oil and gas industry on the back of the Corrib gas project coming on line, more recent growth in 2017 is driven by strong performances in the aquaculture, sea fisheries, shipping and marine tourism industries, as well as continued growth in the emerging ocean industries.⁴
- Emerging ocean economy sectors for Ireland include offshore renewables, high tech marine products and services / ICT for the sea and marine biotechnology (which are primarily R&D intensive), as well as maritime commerce.
- International ship leasing and charter operations are one of the fastest growing segments of the maritime services sector. With the current uncertainty in the UK economy investors are re-assessing their options with Ireland well positioned to take advantage. In 2018 two marine insurance companies made the decision to move from London to Dublin.
- Brexit poses considerable challenges in terms of ports and port capacity, trade patterns, UK Landbridge, food etc., and transboundary issues. In terms of ports, initial indications suggest that Ireland's maritime industry has sufficient flexibility and resilience to deal with likely outcomes of Brexit. The impact that Brexit will have on the routing of time-sensitive or cost-sensitive Landbridge traffic needs further examination because of the potential to create disadvantages in certain sectors.⁵

See Appendix II for further detail on seafood and shipping

¹ Global Marine Fuel Trends 2030, *Lloyd's Register Group Limited* (2014)

² Socio-Economic Marine Research Unit (SEMURU)

³ *ibid*

⁴ Socio-Economic Marine Research Unit (SEMURU)

⁵ The Implications of Brexit on the Use of the Landbridge. IMDO (2018)

Ecosystem

- Policy & Governance
 - Ireland’s Interdepartmental Marine Coordination Group (MCG) – set up to facilitate coordination across the sector. The Group developed Ireland’s Integrated Marine Plan in 2012, with annual updates provided. See www.ouroceanwealth.ie.
 - Sectoral policies include Food Wise, Offshore renewable Energy Development Plan and the National Ports Policy.
- Research & Innovation
 - a National Marine Research & Innovation Strategy 2017-2021 was published in 2017.
 - Ireland secured €7m in funding from H2020 for marine
 - SFI research Centres - MaREI, iCrag & Beacon (Bioeconomy)
- Strong national investments have been made in areas of ocean observation and seabed mapping in Ireland. Addressing related challenges has led to business opportunities through marine technology, engineering and science
- In addition to the market values of Ireland’s ocean industries, there is a range of Ecosystem Services including: Carbon sequestration services (€819 million); Waste assimilation services (€317 million); Scientific and educational services (€11.5 million); Coastal defence services (€11.5 million); Seaweed harvesting (€4 million); Housing stock close to shore (added aesthetic value) (€68 million)

Relevant Reports

Click on hyperlinks below

- [Harnessing Our Ocean Wealth – An Integrated Marine Plan for Ireland](#)
- [Harnessing Our Ocean Wealth – Annual Review of Progress 2017](#)
- [Our Ocean Wealth Development Task Force Report to The Inter-Departmental Marine Coordination Group](#)
- [MSP Roadmap](#)
- [OECD - The Ocean Economy in 2030](#)
- [EU Blue Economy Report – The 2018 Annual Economic Report on the EU Blue Economy](#)

- [SmartOcean Strategy](#)
- [Ireland's European Maritime & Fisheries Fund Operational Programme 2014-2020](#)

Key actors

Government Departments: DAFM, DBEI, DCCAIE, DHPLG

Agencies: Marine Institute (MI) including the Irish Maritime Development Office (IMDO), Bord Iascaigh Mhara (BIM), Enterprise Ireland, IDA, Bord Bia, SEAI, Udaras na Gaeltachta, Failte Ireland

Groups: Inter-Departmental Marine Coordination Group- see appendix for list of members, Our Ocean Wealth Marine Development Team Oversight Group, MSP Advisory Group

Research: Socio-Economic Marine Research Unit (SEMURU), Marine Institute, SFI Centres: MaREI, Beacon, iCrag

Recent Developments

Company Developments

- Irish wave energy technology company, Ocean Energy, announced that its pioneering wave energy convertor, the 'OE Buoy', will be built in the United States by Oregon-based marine-fabrication company Vigor, and deployed at the US Navy's Wave Energy Test Site on the Hawaiian Island of O'ahu in autumn 2018. The contract value is €5.25 million out of a total project value of almost €10 million for this first of a kind grid-scale project at the Hawaiian test site (January 2018)
- Marine foods ingredients firm, Bio-marine Ingredients Ireland (BII) has been further boosted with an investment of €750,000 from Enterprise Ireland. The company commenced full commercial production at its €12 million marine ingredients processing facility in Lough Egish, Co Monaghan in September 2017 and aims to provide twenty-five full-time positions during the first phase of the company's development. BII will develop value added protein products derived from fish sourced in Irish waters (October 2017)
- Port Developments: a number of infrastructure projects are underway and will continue to be progressed in 2018.
 - Dublin Port Company are continuing with the implementation of the Alexandra Basin Redevelopment project
 - The Port of Cork Company will be commencing construction on the Ringaskiddy project in 2018
 - Phase 2 of the Shannon Foynes Port Company's (SFPC) Infrastructure Development Programme is proceeding to planning with work expected to commence in 2019.
 - The harbours (Fishery and LA) and ports continue to look at opportunities in the marine area e.g. maritime services and ocean energy. For example, SFPC are targeting the strategic value of emerging technologies to capture the abundant ocean energy resources off Ireland's coast, and views the creation of an Ocean Energy Hub to support this as a key objective in coming years. In May 2018 SFPC announced the expansion of its site to include the development of an 83-acre site for marine related industry developments

Sector Developments

- University of Limerick (UL) unveiled a unique €2 million underwater robot at the docks in Limerick city today. The Science Foundation Ireland (SFI) funded ROV Étaín can operate in challenging wind, wave, and tidal

conditions and will be used to inspect, repair and maintain Marine Renewable Energy (MRE) facilities (April 2018)

- **Páirc na Mara** – Significant first steps are being taken by Údarás na Gaeltachta in the planning and development of Páirc na Mara, a new marine innovation park which is to be developed in Cill Chiaráin in the Conamara Gaeltacht of County Galway. The development site of approximately nine hectares will provide the infrastructure and facilities to support the establishment and expansion of a cross-section of marine enterprises. These enterprises will develop innovative products and services drawing on the local bioresource (finfish, shellfish, seaweed and other renewable species) creating employment, economic regeneration and added value through targeting national and export markets. A Marine Innovation and Development Centre (MIDC) facility will be developed as a cornerstone infrastructure facility at Páirc na Mara. This marine innovation and development centre will provide the necessary business development supports and facilities which will assist innovative start-ups in the sector. It will also support the growth, productivity and innovative capacity of existing SMEs trading in the marine sector. Drawing on the expertise and resources of Galway-Mayo Institute of Technology, NUI Galway and other HEIs as relevant, and through collaborative programming of specialist supports and development interventions to be agreed with BIM, the Marine Institute, the Education and Training Boards, Skillnet and other stakeholders, the MIDC facility will offer a range of focused services.
- **Marine Incubation Centre** – MaREI expanded its remit to include the EntrepreneurShip Incubator during the past year, providing business incubation space for industry to engage in a cluster containing research and training opportunities. This provides an interface for the exchange of ideas, insights, expertise, human capital and culture between entrepreneurs and researchers. MaREI's Enterprise Ireland funded Marine Incubation Manager will act as the prime interface for all business activity within the EntrepreneurShip. MaREI also became a partner in a 'European Space Agency Business Incubation Centres' partnership entitled 'ESA Space Solutions Centre Ireland', one of 16 ESA BICs developed to create viable businesses and jobs.

Further detail on sub-segments

Seafood –

- The Irish seafood industry is valued at €1.15bn in 2017, a 6.4% growth on 2016 figures⁶.
- The value of Irish seafood exports increased by 9% in 2017, to reach €666 million, reflecting a 15% increase in export volumes during the period
- The main EU markets – namely France, Spain, UK, Italy and Germany – continue to dominate, accounting for approximately 61% of total export values. Notable performers were Poland, where exports increased 242% and the Netherlands market, which grew in value by 56%.
- International markets account for 26% of total export values at roughly €160 million. Ireland's four main African markets – Nigeria, Cameroon, Egypt and Ghana – accounted for almost 10%

⁶ The BIM Business of Seafood Report (2018) – note this differs slightly from Bord Bia's estimation of €614 million

of total seafood export values. Exports to the four main Asian markets – China, Hong Kong, South Korea and Japan – accounted for 11%.

- Bord Bia’s recent market prioritisation study provides an analysis of a range of seafood markets in Asia, Europe and North America across various categories, including pelagic, salmon and shellfish.
- An opportunity exists to increase the output of high quality, organic seafood from aquaculture.
- The US and Canada are also growing markets, predominantly dominated by sales of fresh and smoked salmon and, more recently, processed shellfish. In 2017, the combined total value of seafood exports to the region was an estimated €7 million.

Shipping⁷:

- In 2017, traffic through Irish ports grew by 6% in overall terms, with the iShip Index (an aggregate measure of trade through Irish ports) returning to levels last recorded in 2007.
- Major development projects underway in Ireland’s Tier 1 Ports: Dublin, Cork and Shannon Foynes that will deliver the capacity needed to meet future demand and sustain economic growth.
- **Cruise tourism** continues to grow globally and nationally – In 2017 amounted to more than 4.3 million passengers. In addition, 324 cruise vessels, carrying more than 415,000 passengers, called at Irish ports in 2017.

Inter-Departmental Marine Coordination Group

The Marine Coordination Group is responsible for supervision, cross-government delivery and implementation of Ireland’s Integrated Marine Plan.



⁷ Irish Maritime transport Economist (2018) and IMDO