Productive

More information on the regions used in the Productive assessment is available on the Assessment processes and methods page of the SMA2020 portal: **http://marine.gov.scot/sma/assessment-theme/assessment-processes-and-methods**

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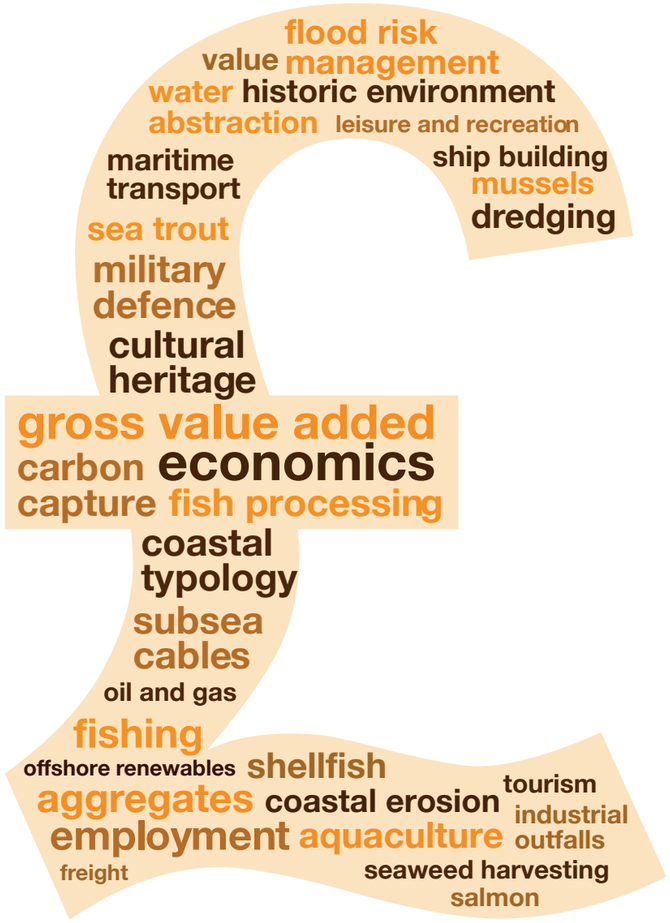
Key words



What is covered

The Scottish marine environment is used by a wide range of businesses and individuals and provides a vital contribution to Scotland's economy. Many industries depend upon the marine environment directly. These include fishing and aquaculture. Many more rely indirectly on the sea for services including energy generation from offshore wind, marine renewables, maritime transport of goods and people or information and energy transfer through subsea cables.

The productivity of a wide range of industries that use or depend upon Scotland's seas has been measured using:

- The gross value added (GVA) as the main economic measure of productivity, using trends at both national and regional levels where possible. Gross value added is the value of goods and services produced minus the cost of raw materials and other inputs used to produce them. The figure is much smaller than the turnover of the sector.
- Employment trends over time at a regional and national level.
- Other economic measures such as farm gate value for aquaculture and energy generation for offshore renewables.
- Other supporting information that may indicate a change in productivity, particularly in the absence of more robust economic information. For example, number (for ferry passenger numbers), volume (for water abstraction), weight (for maritime freight, dredge material deposits and salmon and sea trout fishing) and length (for sub-sea cables).

The basis of the assessment

Due to the diverse nature of the industries assessed, a wide range of different sources have been used. In general, published government statistics have been used and links provided to the source publication, article or table. In some cases, particularly for new and emerging industries like seaweed harvesting and carbon capture, utilisation and storage, there is insufficient information to make an economic assessment. In these cases the available information has been provided but no economic trends have been presented.

The main source for GVA and employment figures is the Scottish Annual Business Statistics (SABS) publication. This provides data on a number of economic variables across a range of sectors, based on data from the Annual Business Survey (ABS) conducted by the Office for National Statistics (ONS). The ABS sample is designed as a stratified random sample of UK businesses. To improve the quality of Scottish figures, the Scottish Government funds an enhanced ABS sample in Scotland, giving a total sample size of around 8,200 firms. However, it is not possible to provide regional breakdowns for every industry due to the small number of businesses sampled resulting in reduced quality and the risk of identifying information about individual businesses.

SABS publish information about sample sizes and error margins for the survey at: https://www.gov.scot/publications/scottish-annual-business-statistics-2018/

Summary of key messages

The assessments cover a wide range of industries. Some, like oil and gas, are well established and are in long-term decline. Others, including tourism and aquaculture, are increasing productivity. New and developing industries, like renewables and carbon capture, utilisation and storage, are predicted to increase.

One of the key challenges is how to manage the competing demands for sea space between, for example, fishing, renewable energy, tourism and aquaculture. Often the use of the sea for one industry prevents its use by another. This means that an expansion and increase in productivity in one industry may lead to a decline in another. For example, opening a new wind farm could mean a potential decline in the fishing industry for that area. Part of this challenge is to find ways to reduce and avoid the impact of productive activities on the marine environment whilst maintaining productivity. Some measures are already in place to protect the marine environment, including: quotas for fishing; legislation; licensing; and the establishment of MPAs. However, over time these measures may need to change as more is known about the impact of productive activities on the marine environment and the effectiveness of existing measures.

- From 2014-2018, the overall fish tonnage landed in Scotland has decreased by 7%.
- The oil and gas sector is the biggest contributor to the marine economy representing two thirds of the entire marine sector GVA in 2017. Oil and gas production has increased since 2014 following a period of investment. However, it is in long-term decline but is expected to continue for a further 20 years.
- Between 2013 and 2017, aquaculture GVA increased by 58% to £354 million.
- Between 2008 and 2017, marine tourism GVA increased by 28% and employment by 16%.
- Between 2014 and 2018, Offshore wind (fixed and floating) and marine energy (wave energy and tidal stream) generation increased by 142% .
- There were 65 million tonnes of freight handled by all Scottish ports in 2018, down 9% since 2014.
- Ferry passenger numbers increased by 6% to 10.3 million and vehicles increased by 12% to 3.5 million between 2014 and 2018.

> "The marine economy is important to Scotland, accounting for £14.7 billion Gross Value Added, 11% of the overall Scottish Gross Value Added in 2017."
>
> Venetia Haynes, Topic lead

Summary of knowledge gaps

The following knowledge gaps have been identified:

1. Lack of key economic data on GVA and employment for a number of assessments, making productivity hard or impossible to measure. These include:

- Comparable economic data even at a national level for coastal erosion and flood risk management, seaweed harvesting and cultivation, subsea cables, waste water treatment and industrial outfalls, and water abstraction.
- Lack of data on GVA or employment at a national scale for dredge material disposal (weight used instead); offshore renewable energy (energy generation used); salmon and sea trout fishing (catch weight used).
- Regional indicative economic trend data for historic environment and cultural heritage.
- Lack of regional GVA data for maritime transport so tonnages are used for trends for freight and passenger numbers for ferries.

2. The data are often unavailable to investigate trends for Scottish Marine Regions and Offshore Marine Regions. In cases where a sub-national breakdown is possible this is often available at the scale of a local authority rather than for a marine region.

3. Although direct economic impact can be measured for many areas through GVA and employment, the wider social and economic impact of these industries is even harder to estimate. However, there is a need to understand the wider implications of a substantial increase/decrease in any industry, particularly for remote coastal areas, that may be dependent on a small number of marine industries for their livelihoods.