

The Ocean Economy in 2030

The Ocean as a Sustainable Source of Economic Growth

The last few years have seen a spectacular increase in attention devoted to the need to protect the world's ocean and seas. At the same time, interest has been growing in the huge potential offered by the future development of ocean-based industries.

Striking the right balance means greatly enhancing efforts to address the challenges of sustainable use of the ocean. The OECD is already contributing at international policy levels to specific aspects of ocean-related issues – such as fisheries, shipbuilding, marine biodiversity and biotechnology.

This report is the first endeavour by the OECD to consider the global oceanic activities with an economic and foresight perspective, with a view to supporting national and international efforts towards a more sustainable development of the ocean economy in the future.

The quick read

The Ocean Economy in 2030 analyses the economic perspective of the ocean economy while meeting the goals of a more sustainable development, and provides policy recommendations to support such national and international efforts.

The many economic activities that make use of the ocean possess great potential for boosting economic growth, employment and innovation. Together, ocean-based industries play a key role in the world economy. Calculations on the basis of the OECD's *Ocean Economy Database* estimate the ocean economy's output in 2010 (the base year for the calculations) at USD 1.5 trillion in value added, or approximately 2.5% of world gross value added (GVA). This is roughly equivalent to the size of the Canadian economy that same year.

The report puts forward a number of recommendations to enhance the sustainable development of the ocean economy:

- foster greater international co-operation in maritime science and technology as a means to stimulate innovation and strengthen the sustainable development of the ocean economy
- strengthen integrated ocean management
- improve the statistical and methodological base at national and international level for measuring the scale and performance of ocean-based industries and their contribution to the overall economy
- build more capacity for ocean industry foresight.



What is the ocean economy?

The ocean economy is the sum of the economic activities of ocean-based industries, together with the assets, goods and services of marine ecosystems (Figure 1). In many cases, marine ecosystems provide intermediate inputs to the ocean-based industries. Conversely, ocean industries can impact the health of marine ecosystems.

The sectoral scope of the ocean economy varies considerably by country. Internationally agreed definitions and statistical terminology for ocean-based activities do not yet exist. For this project, the OECD distinguishes “emerging” ocean industries from “established” ocean industries, although there is no hard distinction between the two (Table 1). Indeed, some degree of overlap exists, not least where segments of established ocean industries manifest clear indications of rapid growth and quite dramatic rates of innovation.

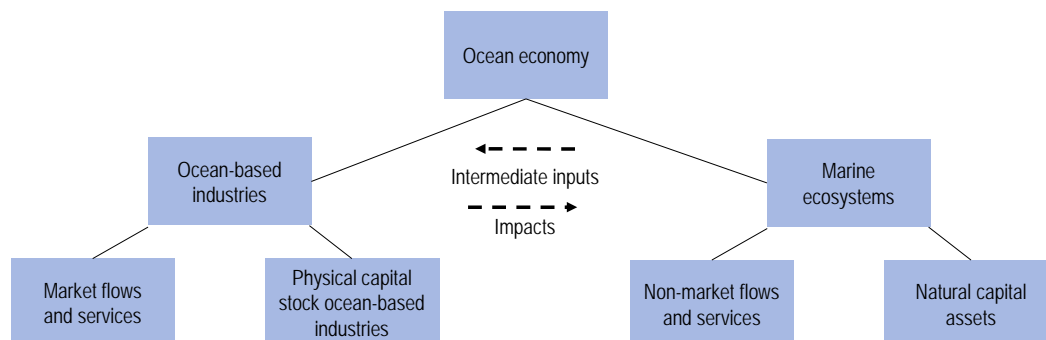
For example, shipping and port activities are moving increasingly to highly sophisticated levels of automation; coastal aquaculture is well established in some countries, but at industrial scale it is becoming a highly science- and technology-intensive activity and is looking to expand further offshore; ocean monitoring and surveillance are benefiting from massive advances in satellite technology, tracking and imaging; and the cruise industry is turning its attention to new destinations such as the Arctic and Antarctica.

What is the size of the ocean economy?

The world’s ocean and seas hold the promise of immense resource wealth. Moreover, they are increasingly recognised as indispensable for addressing many of the global challenges facing the planet in the decades to come, from world food security and climate change to the provision of energy, natural resources and improved medical care.

The global ocean economy, measured in terms of the ocean-based industries’ contribution to economic output and employment, is significant. Calculations on the basis of the OECD’s *Ocean Economy Database* estimate the ocean economy’s output in 2010 (the base year for the calculations) at USD 1.5 trillion in value added, or approximately 2.5% of world gross value added (GVA). This is roughly equivalent to the size of the Canadian economy that same year. In terms of employment, the ocean-based industries contributed some 31 million direct full-time jobs in 2010 (roughly equal to France’s entire labour force that year). These are very conservative estimates, not least because several important activities in the ocean economy (e.g. marine business and finance, ocean surveillance, marine biotechnology) are not captured due to lack of data.

Figure 1. Scope of the Ocean Economy



Source: OECD (2016), *The Ocean Economy in 2030*, <http://dx.doi.org/10.1787/9789264251724-en>.

How much could the ocean economy grow by 2030?

There is a marked acceleration of economic activity in the ocean, based on the rapidly expanding ocean industries combined with expectations of moderate growth in already large industries like maritime and coastal tourism, offshore oil and gas, shipbuilding and maritime equipment.

The global ocean economy could double in size by 2030, reaching a gross value added of around USD 3 trillion (roughly equivalent to the size of the German economy in 2010) following the business-as-usual scenario. The value added of some ocean industries is set to grow faster than the world economy. These include for example marine aquaculture, capture fisheries, fish processing, offshore wind, and port activities. Employment in ocean-based industries as a whole is also set to more than double by 2030 to more than 40 million (roughly the size of Germany's current labour force), thereby outpacing markedly the overall growth rate of the global workforce. Above-average job growth is expected in almost all the sectors included in the study, with especially rapid employment growth occurring for example in marine aquaculture, fish processing, offshore wind and port activities.

As a consequence, it is almost inevitable that pressures on the ocean's natural assets will increase in the coming years, as demands continue to grow on marine sources of food, energy, minerals, leisure pursuits and so on. Similarly, ocean space in many regions of the world risks becoming ever more crowded, as maritime trade, marine aquaculture, ocean renewable energy, and marine and coastal tourism, etc. gather momentum and, by virtue of their growth, generate further demand in related, interconnected ocean-based industries.

What policy recommendations to foster a sustainable ocean economy?

In order to boost the long-term development prospects of emerging ocean industries and their contribution to growth and employment, while managing the ocean in responsible, sustainable ways, four recommendations follow that include in particular areas in which the OECD is well positioned to make a useful contribution to international efforts. Policy-makers would need to:

1. Foster greater international co-operation in maritime science and technology as a means to stimulate innovation and strengthen the sustainable development of the ocean economy. This would involve for example undertaking international comparative analyses and reviews of the role of government policy on technological innovations in marine and maritime activities.
2. Strengthen integrated ocean management. In particular, this should involve making greater use of economic analysis and economic tools in integrated ocean management, for example by establishing international platforms for the exchange of knowledge, experience and best practice, and by stepping up efforts to evaluate the economic effectiveness of public investment in marine research and observation.
3. Improve the statistical and methodological base at national and international level for measuring the scale and performance of ocean-based industries and their contribution to the overall economy. This could include, among other tasks, the further development of the OECD's *Ocean Economy Database*.
4. Build more national and international capacity for ocean industry foresight, including the assessment of future changes in ocean-based industries.

Table 1. The ocean economy includes established and emerging industries

Established	Emerging
Capture fisheries	Marine aquaculture
Seafood processing	Deep- and ultra-deep water oil and gas
Shipping	Offshore wind energy
Ports	Ocean renewable energy
Shipbuilding and repair	Marine and seabed mining
Offshore oil and gas (shallow water)	Maritime safety and surveillance
Marine manufacturing and construction	Marine biotechnology
Maritime and coastal tourism	High-tech marine products and services
Marine business services	Others
Marine R&D and education	
Dredging	

Source: OECD (2016), *The Ocean Economy in 2030*, <http://dx.doi.org/10.1787/9789264251724-en>.

Further reading

OECD (2016), *The Ocean Economy in 2030*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264251724-en>.

Website

OECD Ocean Group website, <http://oe.cd/oceaneconomy>.

Directorate for Science, Technology and Innovation Policy Note

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