

Circumnavigation

HELM – PwC Barometer of the Economy
of the Sea (World)

In-depth

January 2020
Edition nº5

PwC Blue Economy Global Centre of Excellence



"Pouring forth its seas everywhere, then, the ocean envelops the earth and fills its deeper chasms".

Nicolaus Copernicus

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Circumnavigation: HELM - PwC Economy of the Sea Barometer (World)

Edition nº5 - January 2020

Is a social responsibility initiative that include tree documents:

- Circumnavigation: HELM - PwC Economy of the Sea Barometer (World) Summary
- Circumnavigation: HELM - PwC Economy of the Sea Barometer (World) In Detail
- Map of the Economy of the Sea

The economy of the sea is an integrated vision of the diverse activities of the sea with the objective to promote growth and development in a sustainable way.

See more information on the project of social responsibility for the economy of the sea:

<http://www.pwc.pt/pt/temas-actuais/economia-mar.html>

Introduction





Introduction

The sea is a valuable global asset that needs to be preserved and valued.

Only with greater knowledge and an integrated view of this extensive resource are we able to ensure development in line with the principles of environmental, economic and social sustainability of marine resources.

Taking these principles into account and within the PwC social responsibility project aimed at the development of the sea economy and blue growth, we have built the HELM - PwC Economy of the Sea Barometer (World), with the aim of systematizing, in a summarized way, quantitative information on various industries of the sea, allowing not only to identify the trends and evolution of the industries of the sea, but also to build rankings that, superimposed on a world map, identify the intensity of ocean use in each region of the globe.

The results of this exercise are clear in a period from 2005 to 2017, when a global financial and economic crisis was experienced, in 2009, there was a decrease in the overall gross domestic product, Asia, and in particular China, took the lead, fishing, aquaculture, cargo handling in ports and shipbuilding. The ten largest content ports in the world are in Asia and seven of them are Chinese. In 2016, Chinese fishing and aquaculture accounted for 19% and 62% of the world's total fisheries and aquaculture respectively. It is only in offshore energy production, ownership and operation of merchant ships, tourism (cruises) and sport that America and Europe manage to be ahead of Asia. Africa and Latin America are regions of future opportunities in the field of the economy of the sea. Australia and New Zealand, in particular, are references to the ocean economy in Oceania and the World. This period was also a period of environmental tension and in terms of maritime piracy. Between 2011 and 2018, more than 3,400 people were targeted by sea piracy attacks, with more than 2,700 taken hostage and 23 killed. Over the years analysed, Nigeria, Indonesia and Bangladesh, are countries with high attack intensity. As for the defence sector Russia, China and the United States of America have the three largest armies on a global scale in 2018.

In biotechnology, the Americas are the leading region, having the highest market value. Regarding telecommunications, Indonesia stands out, being the country with the largest number of submarine cable contact points in the world. Plastic accumulation at sea represents a major challenge for the future of maritime sustainability. Asia is the region with the largest coastline extension affected by levels of maximum pollution originated on land.

The five oceans: the Atlantic Ocean, the Indian Ocean, the Pacific Ocean, the Arctic Ocean and the Antarctic Ocean, and the other seas of the world, are valuable assets that must be enjoyed by humankind in a sustainable way. Many industries operate on this vast natural resource, producing wealth and generating jobs. In order to take advantage of all this wealth in a sustainable manner, it is fundamental to know it better and in an integrated way, that is, as important as knowing each one of the industries, it is important to know how they interact with each other, what evolution they have had and how intensely they use the Sea in different parts of the globe.

In the background, the HELM - PwC Economy of the Sea Barometer (World) is a trip around the world looking to identify the main countries in each industry of the sea, reason why we denominate this document of "Circumnavigation".

Stephanie Hyde

Global Clients and Industries Leader

Miguel Marques

Economy of the Sea Partner

Executive Summary





Executive Summary

The HELM - PwC Economy of the Sea Barometer (World) - in depth has two parts:

1. A summary of quantitative information on various subsectors that make up the economy of the sea in the world, including trend analysis and a number of rankings of countries by industry.
2. An economy of the sea map made by overlapping different rankings of countries by industry on a map of the world.

The economy of the sea is part of the world economy and, as such, is affected by the general evolution of the macroeconomics, so, given the growth rates of the various countries, it can be said that the last few years have not been easy. In 2011 the world economy had a lower growth rate than 2010, remaining relatively stable over the following years. In 2017 there was a 3.1% growth, maintaining this forecast for 2018.



Executive Summary

Maritime transport, ports and logistics

The growth of global economy in recent years has not been strong. As most of the load volume is transported by sea, the maritime transport sector is impacted by the evolution of the global economy.

While oil and gas, as well as bulk cargoes, continue to be the most transported types of cargo by sea, containerized cargo is growing.

In terms of maritime trade, between 2006 and 2017 there was a change in the relative importance of developed economies to developing economies. In 2006, the developed economies accounted for about 53% of the tons of cargo transported by sea, which dropped to 36% in 2017.

However, the weight of the developing economies in 2006 was 46%, rising to 63% in 2017. This is mainly because America decreased its maritime trade from 19% in 2006 to 6% in 2017, while Asia increased from 48% in 2006 to 53% in 2017.

From 1980 to 2018 dry cargoes and container ships gained weight relative to oil tankers and general cargo vessels.

Greece, Japan, China, Germany and Singapore are the countries that concentrate the majority of vessel ownership.

Denmark, Switzerland, France, China, Germany and Japan are the countries where the headquarters of the main transport companies are located.

Panama, Liberia, Marshall Islands, China and Singapore are the countries with the largest ship registration.

The ten largest container ports in the world are Asian, with seven being Chinese.



Executive Summary

Shipbuilding, maintenance and equipment

Portfolio orders at shipyards registered growth between 2003 and 2008 and from that period until 2012, they declined. Between 2013 and 2015, this trend reversed, however, from 2016 onwards, it declined again, and the trend continued in 2017.

At the end of 2018, about 46% of vessel orders refer to solid bulk carriers, followed by orders for crude oil tankers (23%).

In 2018, China remains the country with the highest volume of ship orders (32.7%), followed immediately by South Korea (25.1%) and Japan (17.5%). Fourth, the European Union appears with 14.4%.

In the same year (2018), Asia (China, South Korea and Japan) accounted for about 82% of vessel production completed that year, at levels of 35.6%, 23.0% and 23.4%, respectively.

China, India, Bangladesh and Pakistan are the countries where there is more ship dismantling.

Offshore Energy

The Middle East continues to lead in terms of total oil reserves, followed by Central & South America and North America.

In 2018, more than 48% of the world's proven gas reserves belong to Iran, Qatar and Russia.

Saudi Arabia, Qatar and Norway were the top three offshore oil and gas producers in 2018.

Since the end of 2014, the price of a barrel of Brent crude oil has been below USD 100, which is in the middle of 2019, slightly above USD 60. Lowering the price of oil makes the profitability of offshore farms harder, which are more expensive than onshore holdings.

Offshore wind power capacity in the world is led by three countries (UK, Germany and China), which represent 81.81% of the total installed capacity in the world. Fourthly, Denmark represents 5.74% of that capacity.



Executive Summary

Naval Security, piracy and maritime disasters (oil spills and plastic islands)

In 2019, the country with the largest number of large-scale naval equipment (aircraft carriers, frigates, destroyers, corvettes and submarines) is China with 204, followed immediately by USA with 197. Russia occupy the third place with 165 large naval equipment.

In 2018, Nigeria was the country with the highest number of pirate attacks.

Between 2011 and 2018, 3,410 people were targeted by sea piracy attacks, with more than 2,700 hostages taken and 23 killed.

Accidents involving oil spills have been occurring over time, all over the world.

The main areas with the largest number and weight of plastic particles are the North Pacific Ocean (38% and 36%, respectively), the Indian Ocean (25% and 22%, respectively) and the North Atlantic Ocean (18% and 21%, respectively).

Asia is the region with the largest coastline extension affected by levels of maximum pollution originated on land.

Fisheries and Aquaculture

Between 2004 and 2016, in a scenario of world population growth, there was an increase in the consumption of fish and other food products of the sea per capita. In 2004, per capita consumption was 16.2 kg, with a per capita consumption of 20.4 kg in 2016. This increase in per capita consumption was achieved through increased production in Aquaculture. Production in inland and marine aquaculture in 2004 reached approximately 27.8 and 18.1 million tons respectively, while in 2016 it reached a production of 51.4 and 28.7 million tons. Catches of fish at sea, although they continue to represent the largest contribution in the supply of fish, have not increased in recent years, with a reduction between 2015 and 2016.

The top 10 countries at the fisheries level, led by China with 19.2% of catches, account for about 60% of total global fisheries.

The Pacific Ocean is the ocean where most of the fishing is done, accounting for about 58% of the total.

The fifteen main species caught represent about 1/3 of the fish.

Asia represents, in 2016, 89% of world aquaculture. Being the main continent responsible for the great growth of aquaculture globally, maintaining 2014 levels.

Inland aquaculture is the main contributor to aquaculture growth, with China being the most relevant country, accounting for 62% of global aquaculture production.

From 1974 to 2015, there was an increase in the pressure on fish stocks, causing a significant increase in the number of species with overfishing or in the limit of acceptable fishing.

Africa and Latin America are the regions of the world with the lowest per capita consumption of fish and other seafood.



Executive Summary

Entertainment, sport, tourism and culture

The revenue associated with cruise activity has consistently increased between 2009 and 2015. After a downward correction in 2016, it returned to growth in 2017.

North America and Europe are the markets where cruise activity is most representative.

The Caribbean continues to be the region with the largest market share in the cruise industry, followed by the Mediterranean and the rest of Europe.

The number of people participating in cruise travel has been increasing.

The United States of America is the country with the largest share of passengers in the cruise industry. They appear next, but with a significant distance, China, Germany and the United Kingdom.

The United States of America, Australia, New Zealand, Italy, France and the United Kingdom are reference countries in terms of marinas and recreational craft industry.

In the last four Olympic Games, Europe was the continent with the most medallists in canoeing, with Germany leading the way with 32 medals. In sailing, although the European countries, led by the United Kingdom, with 19 medals in the last Olympic Games remain well classified, Australia appears in the second place in the ranking with 11 medals. In the rowing, the UK leads with 24 medals, soon followed by Australia (15), New Zealand, and Germany (12 each).

In recent years, Australia and the United States of America have led in surfing.

New uses of the sea

Indonesia is the country with the higher number of submarine cable landing points (12%), followed by the United States of America (11%).

Americas are the region with the major market share in blue biotechnology, with more than 40% of the global market.

HELM - PwC Economy of the Sea Barometer (World)





HELM - PwC Economy of the Sea Barometer (World)

More than 2/3 of the area of our planet is sea.

The five principal oceans: Atlantic, Indian, Pacific, Arctic and Antarctic, and the set of seas are valuable assets that must be enjoyed by humankind in a sustainable way.

In this huge natural resource various industries operate, producing wealth and generating employment.

In order to enhance this wealth in a sustainable way, it is essential to understand it better, becoming familiar with each of the industries and how they interact with each other, their evolution, and how intensively they use the sea around the world.

The concept of Economy of the Sea is related to the valuation of the ocean in environmental, social and economic terms, seeking to have a holistic view of all the human action in the Sea. It includes industries such as shipping, ports and logistics, shipbuilding, ship maintenance and repair, offshore energy, security and defence, fishing and aquaculture, entertainment, sports, tourism and leisure.

Getting to know the oceans better means also knowing better the industries of the Sea, in particular, it is fundamental to quantify their economic evolution in each region. With some quantitative information per industry, there are not many jobs that quantify the economic evolution of all the industries of the Sea.

With the HELM - PwC Economy of the Sea Barometer (World) we intend to build a tool to clarify the current situation of the Sea resource in the world, as well as its prospects for future evolution. The HELM aims to be an observation tool that allows its users to retrieve useful information in an easy and fast way.

The HELM is a long-term project, which will act as a compilation of data to monitor, over time, the evolution of the world economy of the sea and, at the same time, make it possible to analyse the trends and the choices that are being made be carried out by the various economic agents.

Several efforts have been made by various entities to quantitatively assess the importance of the economy of the sea. Some progress has been made, however, the weight of economic activities related to the sea in the world economy, as a whole remains difficult to measure and assess. The existing indicators do not allow us to accurately and continuously measure the real impact of these activities on the global economy.



HELM - PwC Economy of the Sea Barometer (World)

The HELM - PwC Economy of the Sea Barometer (World) consists of two components:

1. Summary of quantitative information on various subsectors that make up the world economy of the sea, with a view to the analysis of trends and construction of some rankings of countries, by industry.
2. Construction of the Map of the Economy of the Sea from the overlap of the different rankings of countries, by industry, referencing this overlap in a world map.

Sea industries considered

- Subsectors relevant to the world sea economy considered in the summary of quantitative information:
- Maritime transports. ports and logistics
- Shipbuilding, maintenance and repair
- Offshore energy
- Security and Defence
- Fisheries and aquaculture
- Entertainment, sport, tourism and leisure
- New uses of the sea (submarine cables and blue biotechnology)

There is yet another set of subsectors, such as offshore mineral resources and blue biotechnology, which, while revealing enormous potential, will still take some time to gain relevance in the global economy.

Rankings

Taking into account the existing quantitative information and respective representativeness that the variable has in the industry under analysis, the following variables were selected for the elaboration of the rankings considered in the Map of the Economy of the Sea:

- Ownership / use of the global fleet (top countries);
- Larger container terminals;
- Complete naval constructions (top countries);
- Offshore oil and gas production (top countries);
- Installed capacity of offshore wind farms (top countries);
- Aircraft Carrier + Frigates + Destroyers + Corvettes + Submarines (top countries);
- Locations of pirate attacks;
- Sea fisheries catch (top countries);
- Aquaculture (top countries);
- Cruises (major markets);
- Olympic sailing medals (top countries);
- Navigation corridor with more commercial traffic;
- Submarine Cables;
- Plastic Islands;
- Blue Biotechnology Market.



Helm - PwC Economy of the Sea Barometer (World)

Updating of quantitative information

As noted above, quantifying and measuring the economy of the sea remains difficult. However, as time passes, new sources of information arise and new reliable indicators can be used. In this context, every year we make a careful review of all the variables that make up the summary of quantitative information and we update it with the relevant information that, however, has become available. In the same way, every year we reconfirm that the comparative data sources of the quantitative information summary remain stable.

In case of publication of new data, by the issuing entity, we update the quantitative information summary.

International context





International context

Exclusive Economic Zones

Countries with larger exclusive economic zones have a greater potential for harnessing the extraordinary value of the oceans. Below is the ranking of the 25 countries with the largest exclusive economic zone.

Table 1 Top 25 Exclusive Economic Zones, February 2018 (millions of km²)

EEZ			
(millions of km ²)			
USA	12.2	Federated States of Micronesia	3.0
France	10.1	Denmark	2.6
Australia	9.1	Norway	2.4
Russia	7.6	Papua New Guinea	2.4
United Kingdom	6.8	India	2.3
Indonesia	6.0	Marshall Islands	2.0
Canada	5.7	Philippines	1.8
New Zealand	4.1	Portugal	1.7
Japan	4.0	Solomon Islands	1.6
Brazil	3.7	South Africa	1.5
Chile	3.7	Seychelles	1.3
Kiribati	3.5	Republic of Mauritius	1.3
Mexico	3.3		

Source: Marineregions.org



International context

World Economic Growth

The economy of the sea is part of the world economy and as such is affected by the general evolution of the macroeconomy, so, given the growth rates of the various countries, it can be said that the last few years have not been easy.

In 2011 the world economy had a lower growth rate than 2010, remaining relatively stable over the following years. In 2017 there was a 3.1% growth, maintaining this forecast for 2018.

Table 2 World GDP growth, 2010-2018^a (annual percentage change)

Region/Country	2010	2011	2012	2013	2014	2015	2016	2017	2018 ^b
World	4.3%	3.1%	2.5%	2.6%	2.8%	2.8%	2.5%	3.1%	3.1%
Developed countries	2.6%	1.5%	1.1%	1.2%	1.9%	2.3%	1.7%	2.3%	2.1%
of which:									
Japan	4.2%	-0.1%	1.5%	2.0%	0.4%	1.4%	1.0%	1.7%	0.9%
USA	2.5%	1.6%	2.2%	1.7%	2.6%	2.9%	1.5%	2.2%	2.7%
European Union (EU-28)	2.1%	1.7%	-0.4%	0.3%	1.7%	2.3%	2.0%	2.5%	2.0%
Transition Economies	4.8%	4.7%	3.3%	2.0%	1.0%	-2.2%	0.3%	2.1%	2.2%
of which:									
Russian Federation	4.5%	4.3%	3.5%	1.3%	0.7%	-2.8%	-0.2%	1.5%	1.7%
Developing Countries	7.8%	6.1%	5.0%	5.0%	4.5%	4.0%	3.9%	4.4%	4.6%
Africa	5.4%	1.3%	5.9%	2.3%	3.7%	3.3%	1.7%	3.0%	3.5%
Latin America and the Caribbean	5.9%	4.4%	2.8%	2.8%	1.0%	-0.3%	-1.1%	1.1%	1.7%
Asia	8.8%	7.4%	5.6%	6.1%	5.7%	5.4%	5.7%	5.5%	5.5%
of which:									
China	10.6%	9.5%	7.9%	7.8%	7.3%	6.9%	6.7%	6.9%	6.7%
India	11.0%	6.2%	4.8%	6.1%	7.0%	7.6%	7.9%	6.2%	7.0%
Oceania	5.8%	1.7%	2.4%	2.6%	6.9%	5.2%	2.4%	2.3%	2.4%

^a Calculations based on GDP at constant 2010 dollars

^b Forecasts

Source: UNCTAD – Trade and Development Report 2018

Maritime transports, ports and logistics





Maritime transports, ports and logistics

Globally, the growth rate of the volume of merchandise imports and exports grew significantly between 2016 and 2017.

The growth rate of merchandise exports was 1.8% and in 2017 it was 4.7%. The growth rate of merchandise imports and exports was the same, in 2016 was 1.8% and in 2017 it was 4.7%. This growth in the growth rate of exports between 2015 and 2017 is mainly due to growth in developing economies. Growth in the growth rate of imports and exports between 2016 e 2017 is due to the growth of economies in transition.

Table 3 Growth in the volume of merchandise trade, 2015–2017 (annual percentage change)

Exports			Country/Regions	Imports		
2015	2016	2017		2015	2016	2017
2.5%	1.8%	4.7%	World	2.5%	1.8%	4.7%
2.3%	1.1%	3.5%	Developed Economies	4.3%	2.0%	3.1%
2.4%	2.3%	5.7%	Developing Economies	0.6%	1.9%	7.2%
0.8%	0.6%	4.2%	North America	5.4%	0.1%	4.0%
1.8%	1.9%	2.9%	Latin America and the Caribbean	-6.4%	-6.8%	4.0%
2.9%	1.1%	3.5%	Europe	3.7%	3.1%	2.5%
1.5%	2.3%	6.7%	Asia	4.0%	3.5%	9.6%
5.5%	2.6%	2.3%	Africa, Eastern Asia and transition economies	-5.6%	0.2%	0.9%

Source: UNCTAD - Review of Maritime Transport 2018

Note: Information on volumes traded are derived from values deflated by UNCTAD indexes.



Maritime transports, ports and logistics

Most cargo is transported by sea and, consequently, the maritime transport sector was impacted by slowing growth of exports and imports globally.

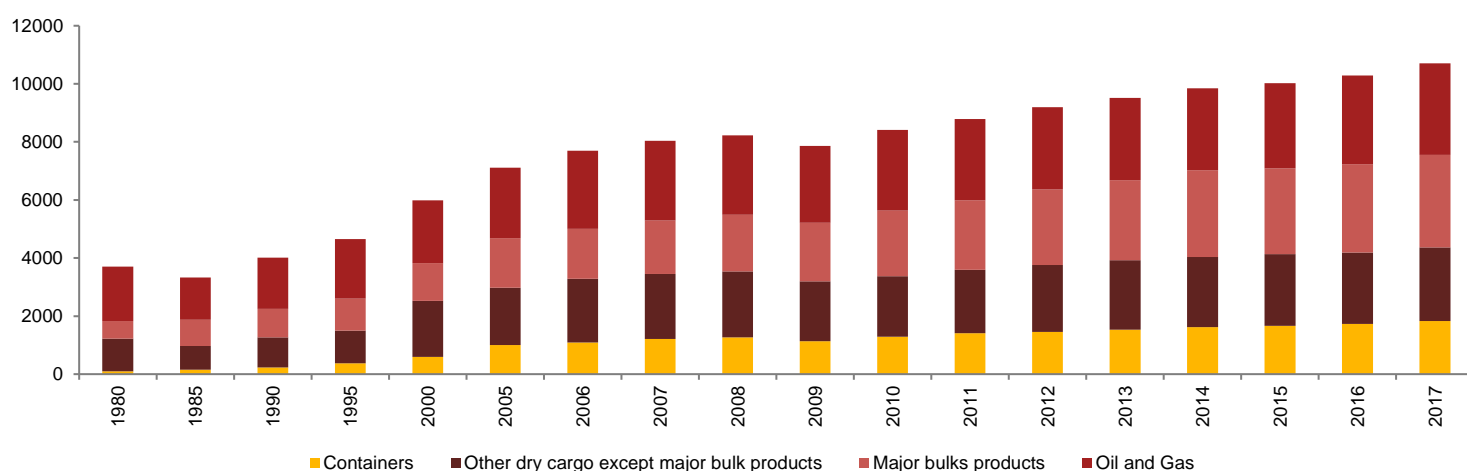
Continuing to be oil and gas, as well as bulk cargoes, the types of cargo most transported by sea, containerized cargo has been growing.

Table 4 International seaborne trade, selected years (millions of tonnes loaded)

Year	Containers	Other dry cargo except major bulk products	Major Bulk Products	Oil and Gas
1980	102	1,123	608	1,871
1985	152	819	900	1,459
1990	234	1,031	988	1,755
1995	371	1,125	1,105	2,050
2000	598	1,928	1,295	2,163
2005	1,001	1,975	1,711	2,422
2006	1,092	2,197	1,713	2,698
2007	1,215	2,232	1,840	2,747
2008	1,272	2,269	1,946	2,742
2009	1,134	2,060	2,022	2,642
2010	1,291	2,087	2,259	2,772
2011	1,411	2,188	2,392	2,794
2012	1,458	2,304	2,594	2,841
2013	1,532	2,392	2,761	2,829
2014	1,622	2,408	2,988	2,825
2015	1,660	2,471	2,961	2,932
2016	1,734	2,459	3,041	3,055
2017	1,834	2,526	3,196	3,146

Source: UNCTAD - Review of Maritime Transport 2018

Figure 1 International seaborne trade, selected years (millions of tonnes loaded)



Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

In terms of maritime trade, between 2006 and 2017 there was a change in the relative importance of developed economies to developing economies. In 2006, the developed economies accounted for about 53% of the tons of cargo transported by sea, which dropped to 36% in 2017.

However, the weight of the developing economies in 2006 was 46%, rising to 63% in 2017. This is mainly because America decreased its maritime trade from 19% in 2006 to 6% in 2017, while Asia increased from 48% in 2006 to 53% in 2017.

Table 5 World seaborne trade in 2006–2017, by type of cargo, country group and region (millions of tonnes and percentage share)

Region/Country	Year	Goods unloaded (million tonnes)				Share of Total
		Total	Crude	Petroleum products and gas	Dry cargo	
World	2006	7,878	1,931	894	5,053	100%
	2016	10,280	1,990	1,236	7,054	100%
	2017	10,666	2035	1282	7349	100%
Developed Economies	2006	4,165	1,282	536	2,347	53%
	2016	3,840	1,001	508	2,332	37%
	2017	3,838	957	509	2,373	36%
Transition Economies	2006	71	6	3	62	1%
	2016	60	0	4	55	1%
	2017	66	1	3	62	1%
Developing Economies	2006	3,643	644	355	2,644	46%
	2016	6,380	989	724	4,667	62%
	2017	6,762	1,077	769	4,915	63%
Africa	2006	350	41	39	269	4%
	2016	493	39	81	373	5%
	2017	500	34	91	375	5%
America	2006	1,522	551	216	756	19%
	2016	566	52	128	386	6%
	2017	608	55	142	412	6%
Asia	2006	3,770	772	333	2,665	48%
	2016	5,308	897	511	3,900	52%
	2017	5,640	988	533	4,120	53%
Europe	2006	2,133	541	286	1,306	27%
	2016	3,899	1,001	512	2,387	38%
	2017	3,904	957	512	2,434	37%
Oceania	2006	103	26	20	57	1%
	2016	14	1	4	8	0%
	2017	14	1	4	8	0%

Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

Most oil production in 2017 took place in Western Asia and North America. The largest oil consumption took place in Asia Pacific and North America.

Table 6 Major producers and consumers of oil and natural gas, 2017 (% world market share)

World oil production		World oil consumption	
West Asia	34%	Asia Pacific	35%
North America	19%	North America	23%
Transition Economies	15%	Europe	15%
Developing Americas	10%	West Asia	10%
Africa	9%	Developing Americas	9%
Asia Pacific	9%	Transition Economies	4%
Europe	4%	Africa	4%
Oil refinery capacity		Oil refinery throughput	
Asia Pacific	34%	Asia Pacific	35%
North America	21%	North America	22%
Europe	15%	Europe	16%
West Asia	10%	West Asia	10%
Transition Economies	9%	Transition Economies	8%
Developing Americas	8%	Developing Americas	6%
Africa	3%	Africa	3%
World natural gas production		World natural gas consumption	
North America	25%	North America	23%
Transition Economies	22%	Asia Pacific	21%
West Asia	18%	Transition Economies	16%
Asia Pacific	17%	West Asia	15%
Europe	7%	Europe	14%
Developing Americas	6%	Developing Americas	7%
Africa	5%	Africa	4%

Note: Oil includes crude oil, shale oil, sand oil and liquid natural gas. This concept excludes liquid fuels from other sources such as biomass and coal derivatives.

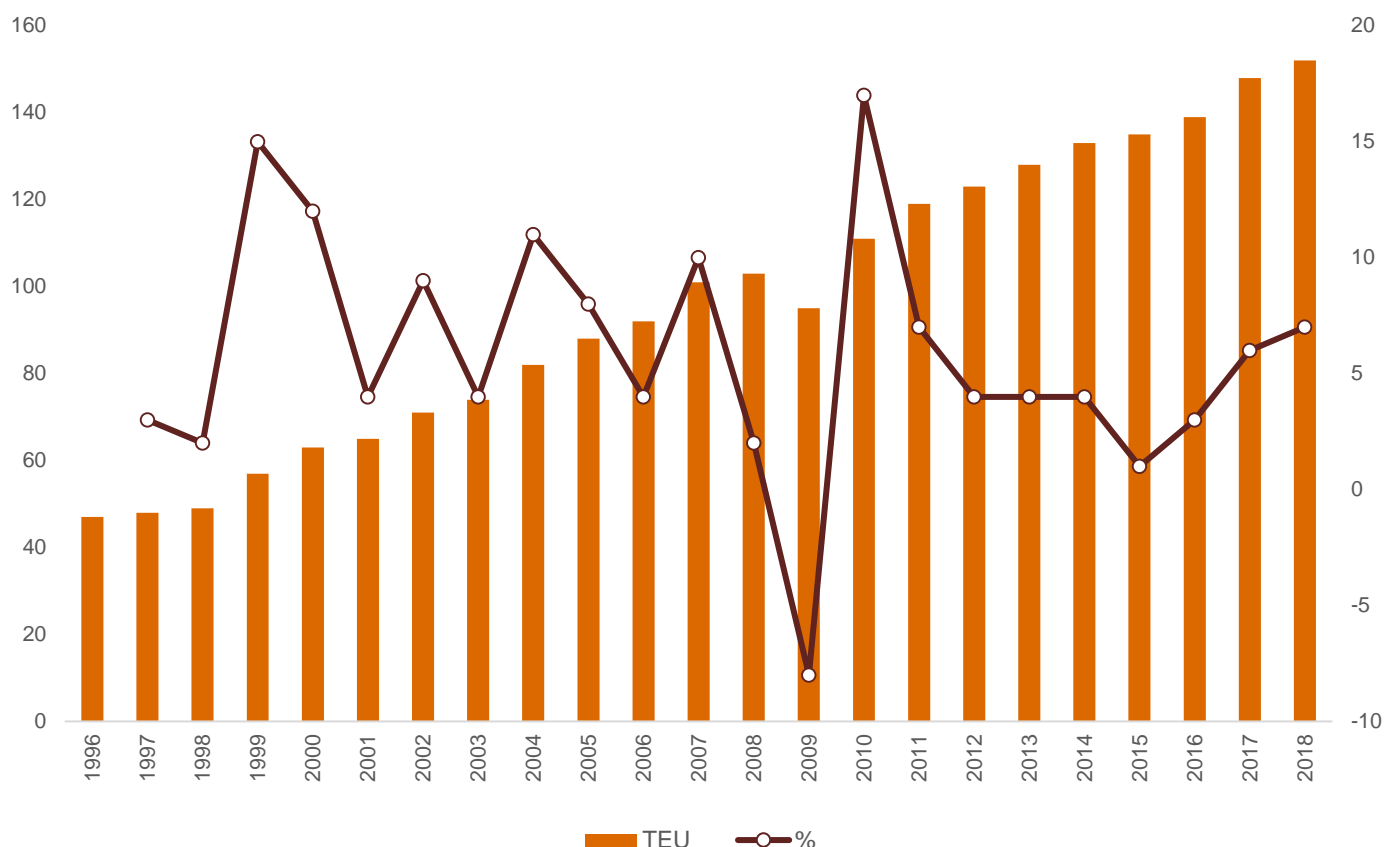
Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

Globally, containerized transport has been increasing a lot, but the global crisis of 2009, with decreasing global gross domestic product, has led to a negative growth in containerization in that year.

Figure 2 Global containerized trade, 1996–2018 (millions of TEUs and annual percentage change)



Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

East Asia continues to be largely responsible for exports to the rest of the world.

Table 7 Distribution of global containerized trade by route (million TEU)

Year	Oriental Asia - North America	North America - Oriental Asia	North Europe & Mediterranean - Oriental Asia	Oriental Asia - North Europe & Mediterranean	North America - North Europe & Mediterranean	North Europe & Mediterranean - North America
(millions of TEUs)						
2015	16.8	7.2	6.8	14.9	2.7	4.1
2016	17.7	7.7	7.1	15.3	2.7	4.2
2017	18.7	7.9	7.6	16.4	3	4.6
2018 ^a	19.5	8.1	7.8	16.9	3.2	4.9
(Variation of TEUs in %)						
2015-2016	5.4%	7.3%	3.8%	2.7%	0.5%	2.8%
2016-2017	5.6%	2.1%	6.9%	7.1%	8.0%	8.3%
2017-2018 ^a	4.1%	3.0%	3.2%	3.3%	7.3%	7.1%

Source: UNCTAD - Review of Maritime Transport 2018

Note: ^a Forecasts

Table 8 Containerized cargo flows on major East-West container trade routes, 2014-2018 (millions de TEUs)

Year	Transpacific	Europe-Asia-Europe	Transatlantic
(millions of TEUs)			
2014	23	22	7
2015	24	22	7
2016	25	22	7
2017	27	24	8
2018 ^a	28	25	8

Source: UNCTAD - Review of Maritime Transport 2018

Note: ^a Forecasts



Maritime transports, ports and logistics

Asia, and in particular China, is the main importer of iron, coal and cereals, while the Americas and Australia are the main exporters of these strategic products. In the case of steel, China is the country that produces the most steel, also being its largest consumer.

Table 9 Some major dry bulks and steel: Main producers, users, exporters and importers, 2017 (% world market share)

Steel Producers		%	Steel Consumers		%
China		49%	China		46%
Japan		6%	USA		6%
India		6%	India		5%
USA		5%	Japan		4%
Russian Federation		4%	Republic of Korea		4%
Republic of Korea		4%	Germany		3%
Germany		3%	Russian Federation		3%
Turkey		2%	Turkey		2%
Brazil		2%	Mexico		2%
Other		19%	Other		25%
Iron Ore Exporters		%	Iron Ore Importers		%
Australia		56%	China		72%
Brazil		26%	Japan		9%
South Africa		4%	Europe		8%
Canada		3%	Republic of Korea		5%
India		2%	Other		6%
Other		9%			
Coal Exporters		%	Coal Importers		%
Indonesia		32%	China		18%
Australia		30%	India		17%
Colombia		7%	Japan		15%
USA		7%	Europe		13%
South Africa		7%	Republic of Korea		12%
Canada		2%	Taiwan		6%
Other		15%	Malaysia		3%
			Other		16%
Grain Exporters		%	Grain Importers		%
USA		25%	Eastern and Southern Asia		34%
Russian Federation		23%	Africa		21%
Ukraine		15%	Developing America		20%
Argentina		11%	Western Asia		16%
Europe		9%	Europe		7%
Australia		8%	Transition economies		2%
Canada		7%			
Others		2%			

Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

From 1980 to 2018 dry cargoes and container ships gained weight relative to oil tankers and general cargo vessels.

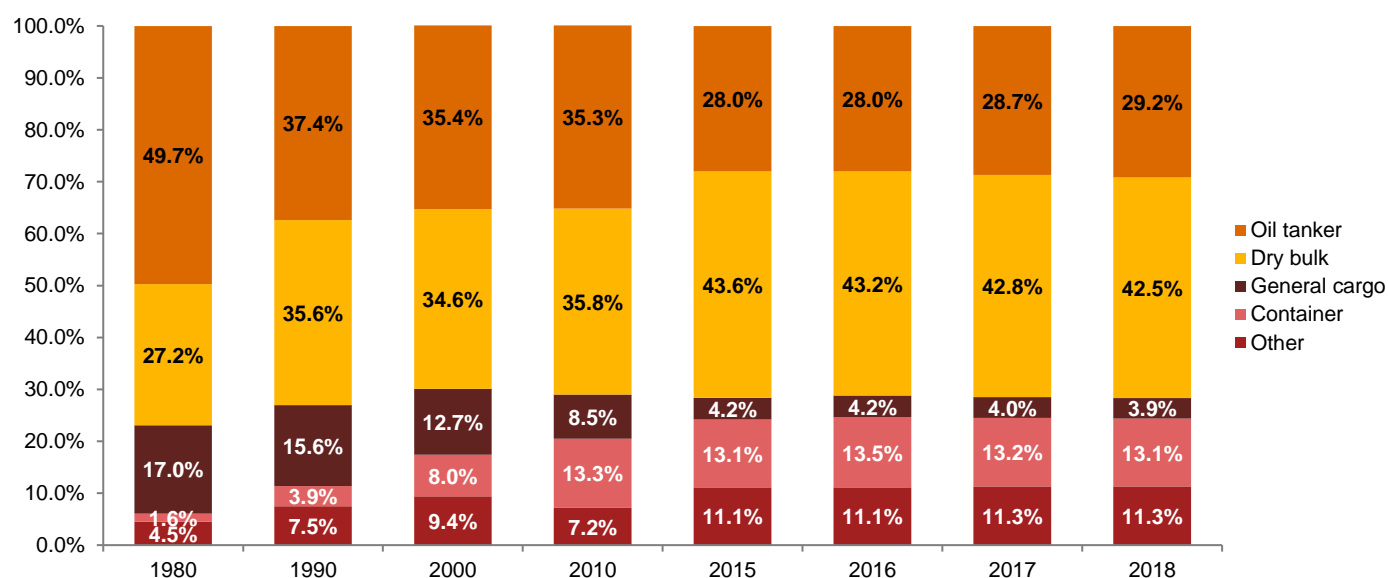
Table 10 World fleet by principal vessel types, 1980–2018 (beginning-of-year figures, % share of DWT)

Year	Other	Container	General cargo	Dry bulk	Oil tanker
1980	4.5%	1.6%	17.0%	27.2%	49.7%
1990	7.5%	3.9%	15.6%	35.6%	37.4%
2000	9.4%	8.0%	12.7%	34.6%	35.4%
2010	7.2%	13.3%	8.5%	35.8%	35.3%
2015	11.1%	13.1%	4.2%	43.6%	28.0%
2016	11.1%	13.5%	4.2%	43.2%	28.0%
2017	11.3%	13.2%	4.0%	42.8%	28.7%
2018	11.3%	13.1%	3.9%	42.5%	29.2%

Note: All propelled seagoing merchant vessels of 100 GT and above, excluding inland waterway vessels, fishing vessels, military vessels, yachts, and offshore fixed and mobile platforms and barges (with the exception of FPSOs and drill ships). Beginning-of-year figures.

Source: UNCTAD - Review of Maritime Transport 2018

Figure 3 World fleet by principal vessel types, 1980–2018 (beginning-of-year figures, % share of DWT)



Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

Greece, Japan, China, Germany and Singapore are the countries that concentrate the majority of vessel ownership.

Table 11 Ownership of the world fleet, as of January 1st, 2018 (thousands of DWT and no. of ships)

Beneficial Owner Location ^a	Dead weight tonnage (thousand DWT)	Number of Ships
Greece	330,176	4,371
Japan	223,615	3,841
China	183,094	5,512
Germany	107,119	2,869
Singapore	103,583	2,629
Hong Kong SAR (China)	97,806	1,592
Republic of Korea	77,277	1,626
USA	68,930	2,071
Norway	59,380	1,982
Bermuda	54,252	494
Taiwan	50,422	987
United Kingdom	49,989	1,354
Monaco	39,323	421
Denmark	39,212	944
Turkey	27,241	1,522
India	24,852	1,011
Switzerland	24,805	411
Belgium	23,630	272
Russian Federation	22,219	1,707
Indonesia	20,299	1,948
Italy	19,750	746

Note: Vessels of 1,000 GT and above.

^a "Beneficial ownership location" indicates the country/economy in which the company that has the main commercial responsibility for the vessel is located

Source: UNCTAD - Review of Maritime Transport 2018



Ranking
included in the map
of the economy of
the
sea.



Maritime transports, ports and logistics

Denmark, Switzerland, France, China, Germany and Japan are the countries where the headquarters of the main transport companies are located.

Table 12 The 20 leading liner companies (headquarters' country) (number of ships and total shipboard capacity deployed, in TEUs, ranked by TEU)

Ranking	Headquarters	Vessels			TEU		
		2016	2017	Jun -2018	2016	2017	Jun -2018
1	Denmark	655	621	700	3,323,064	3,201,871	3,879,439
2	Switzerland	458	469	473	2,803,830	2,935,464	3,118,108
3	France	460	441	476	2,227,600	2,220,474	2,554,264
4	China	254	277	330	1,508,207	1,603,341	1,972,491
5	Germany	171	180	217	987,892	1,038,483	1,550,874
6	Japan	-	-	228	-	-	1,536,312
7	Taiwan	188	186	200	990,792	995,147	1,110,708
8	Hong Kong	101	107	99	594,550	666,558	689,986
9	Taiwan	101	100	100	584,839	588,389	609,749
10	Singapore	132	132	132	360,939	361,752	413,334
11	Israel	80	69	83	359,945	307,934	398,926
12	Republic of Korea	67	69	65	455,841	458,247	382,144
13	Taiwan	94	96	100	235,596	248,880	255,082
14	Singapore	102	92	89	160,184	145,454	126,715
15	Republic of Kores	75	72	57	150,386	140,365	124,460
16	Iran	27	26	28	92,674	89,374	102,518
17	China	75	75	67	92,043	100,195	94,669
18	Republic of Korea	-	11	20	-	41,406	78,318
19	Turkey	46	48	44	82,491	86,157	75,276
20	Hong Kong	40	38	33	86,131	74,188	73,512

Note: Includes all container transport ships operated by maritime companies. Date from May 1, 2018

Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

Panama, Marshall Islands, Liberia, China and Singapore are the countries with the largest ship registration.

Table 13 The 20 flags of registration with the largest registered fleets, as of January 1st, 2018 (DWT)

Flag of Registration	Number of vessels		Dead weight tonnage (thousand DWT)		Share of World Total (DWT)	
	2017	2018	2017	2018	2017	2018
Panama	8,052	7,914	343,398	335,888	18.44%	17.46%
Marshall Islands	3,199	3,419	216,616	237,826	11.63%	12.36%
Liberia	3,296	3,321	219,397	223,668	11.78%	11.63%
China, Hong Kong SAR	2,576	2,615	173,318	181,488	9.31%	9.43%
Singapore	3,558	3,526	124,238	127,880	6.67%	6.65%
Malta	2,170	2,205	99,216	108,759	5.33%	5.65%
China	4,287	4,608	78,400	84,184	4.21%	4.38%
Bahamas	1,440	1,418	79,842	76,659	4.29%	3.98%
Greece	1,364	1,343	74,638	72,345	4.01%	3.76%
Japan	5,289	5,299	34,529	37,536	1.85%	1.95%
Cyprus	1,022	1,020	33,765	34,848	1.81%	1.81%
Isle of Man	-	412	-	27,275	-	1.42%
Indonesia	8,782	9,053	20,144	22,313	1.08%	1.16%
Portuguese International Register of shipping (Madeira)	466	422	17,753	19,105	0.74%	0.99%
India	1,674	1,719	17,254	18,481	0.93%	0.96%
Danish International Register of shipping	654	452	16,893	18,165	0.91%	0.94%
Norwegian International Register of shipping	1,585	519	21,900	18,056	1.18%	0.94%
United Kingdom	1,551	1,157	40,986	16,764	2.20%	0.87%
Italy	1,430	1,405	15,944	15,090	0.86%	0.78%
Republic of Korea	1,907	1,897	15,171	14,426	0.81%	0.75%
Rest of world	38,859	40,445	218,450	233,246	11.96%	12.13%
World Total	93,161	94,169	1,861,852	1,924,002	100%	100%

Note: Propelled seagoing merchant vessels of 100 GT and above; ranked by dead weight tonnage

Source: UNCTAD - Review of Maritime Transport 2017 e 2018



Maritime transports, ports and logistics

Most vessel owners record their ships in a different location from the country where they are located.

Table 14 Top 20 ship owning nations, beneficial ownership, 1st January 2018
(1,000 DWT, by country/economy of ownership)

	National Flag		Foreign Flag	
	2017	2018	2017	2018
Greece	65,597	64,977	243,240	265,199
Japan	31,586	38,053	192,270	185,562
China	76,147	83,639	89,282	99,455
Germany	10,340	11,730	101,688	95,389
Singapore	63,672	2,255	40,743	101,327
Hong Kong, China	71,177	2,411	22,452	95,396
Republic of Korea	14,592	14,019	66,385	63,258
USA	9,575	13,319	57,525	55,611
Norway	18,336	4,944	33,489	54,437
Bermuda	514	1,215	47,545	53,036
Taiwan	4,396	6,732	42,469	43,690
United Kingdom	9,949	9,496	41,202	40,494
Monaco	0	3,856	31,630	35,467
Denmark	15,996	1,521	20,359	37,691
Turkey	7,884	8,034	19,848	19,207
India	16,466	17,974	6,199	6,878
Switzerland	1,758	1,565	21,931	23,240
Belgium	7,581	12,405	15,969	11,225
Russian Federation	7,193	7,589	14,857	14,630
Indonesia	17,297	19,414	1,496	885

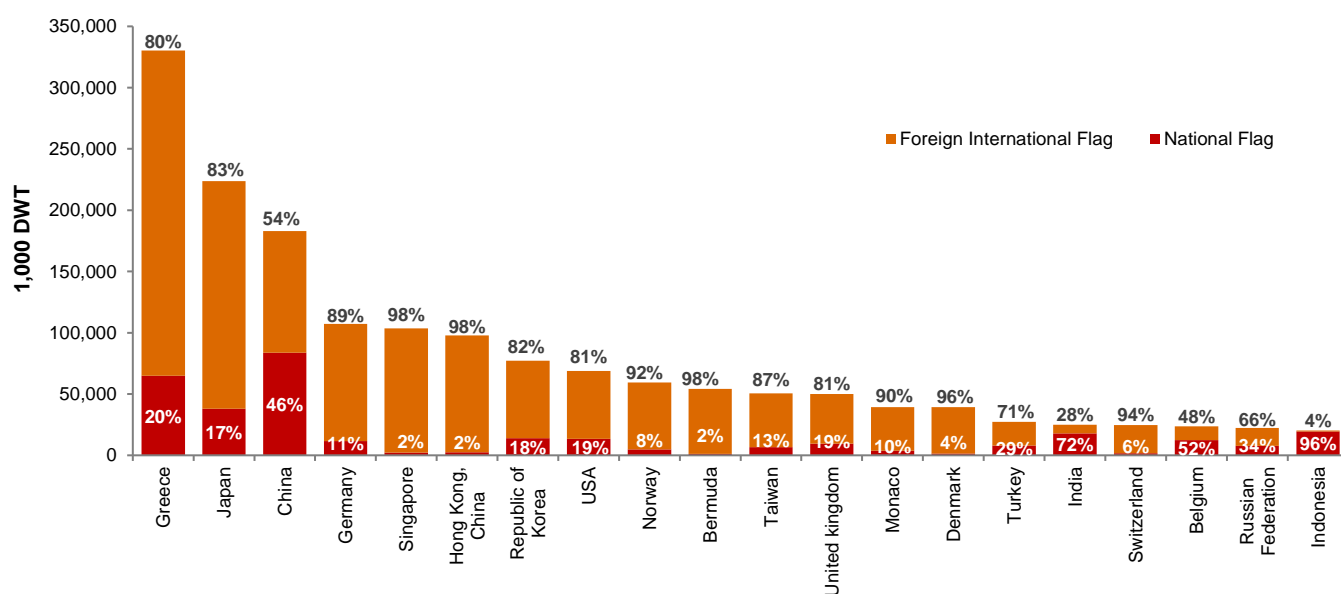
Note: Propelled seagoing merchant vessels of 1,000 GT and above; ranked by DWT

Source: UNCTAD - Review of Maritime Transport 2016, 2017 e 2018 | PwC Analysis



Maritime transports, ports and logistics

Figure 4 Top 20 ship owning nations, beneficial ownership, 1st January 2018
(1,000 DWT, by country/economy of ownership)



Note: Propelled seagoing merchant vessels of 1,000 GT and above;

Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

Most vessels are registered in developing countries.

Table 15 Distribution of DWT capacity of vessel types, by country group of registration, 2018
(beginning-of year figures, % of DWT)

	Total fleet	Oil tankers	Dry cargoes	General cargo	Container ships	Others
World Total	100%	100%	100%	100%	100%	100%
Developed countries	23.14%	25.21%	18.66%	27.87%	29.02%	26.24%
Countries with transition economies	0.67%	0.88%	0.19%	5.54%	0.05%	1.06%
Developing Countries	75.94%	73.81%	81.13%	65.20%	70.85%	71.43%
of which:						
In Africa	12.49%	13.87%	11.23%	6.98%	18.17%	8.91%
In America	23.47%	19.63%	27.27%	20.37%	16.44%	28.30%
In Asia	27.21%	24.45%	28.91%	35.01%	30.45%	21.53%
In Oceania	12.76%	2.84%	13.72%	2.84%	5.78%	12.69%
In others and unknown	0.25%	0.10%	0.03%	1.38%	0.09%	1.27%

Note: Propelled seagoing merchant vessels of 100 GT and above. Numbers from the beginning of the year.

Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

In general, the freight price has gone down.

Table 16 Container freight markets and rates

Freight Market	2011	2012	2013	2014	2015	2016	2017
Transpacific	(\$ per 40-FEU)						
Shanghai-USA West Coast	1,667	2,287	2,033	1,970	1,506	1,272	1,485
Percentage change	-28%	37%	-11%	-3%	-24%	-16%	17%
Shanghai-USA East Coast	3,008	3,416	3,290	3,720	3,182	2,094	2,457
Percentage change	-14%	14%	-4%	13%	-15%	-34%	17%
Far East-Europe	(\$ per 20-FEU)						
Shanghai-North Europe	881	1,353	1,084	1,161	629	690	876
Percentage change	-51%	54%	-20%	7%	-46%	10%	27%
Shanghai-Mediterranean	973	1,336	1,151	1,253	739	684	817
Percentage change	-44%	37%	-14%	9%	-41%	-7%	19%
North-South	(\$ per 20-FEU)						
Shanghai-South America (Santos)	1,483	1,771	1,380	1,103	455	1,647	2,679
Percentage change	-34%	19%	-22%	-20%	-59%	262%	63%
Shanghai-Australia/New Zealand (Melbourne)	772	925	818	678	492	526	677
Percentage change	-35%	20%	-12%	-17%	-27%	7%	29%
Shanghai-West Africa (Lagos)	1,908	2,092	1,927	1,838	1,449	1,181	1,770
Percentage change	-17%	10%	-8%	-5%	-21%	-19%	50%
Shanghai-South Africa (Durban)	991	1,047	805	760	693	584	1,155
Percentage change	-33%	6%	-23%	-6%	-9%	-16%	98%
Intra-Asia	(\$ per 20-FEU)						
Shanghai-Southeast Asia (Singapore)	210	256	231	233	187	70	148
Percentage change	-34%	22%	-10%	1%	-20%	-63%	111%
Shanghai-East Japan	337	345	346	273	146	185	215
Percentage change	7%	2%	0%	-21%	-47%	27%	16%
Shanghai-South Korea	198	183	197	187	160	104	141
Percentage change	3%	-8%	8%	-5%	-14%	-35%	36%
Shanghai-Hong Kong (China)	155	131	85	65	56	55	-
Percentage change	34%	-16%	-35%	-24%	-14%	-2%	-
Shanghai-Persian Gulf (Dubai)	838	981	771	820	525	399	618
Percentage change	-9%	17%	-21%	6%	-36%	-24%	55%

Note: Date based on yearly averages. FEU: 40-foot equivalent unit.

Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

In the period 2007-2017, the supply of containerized transportation has decreased.

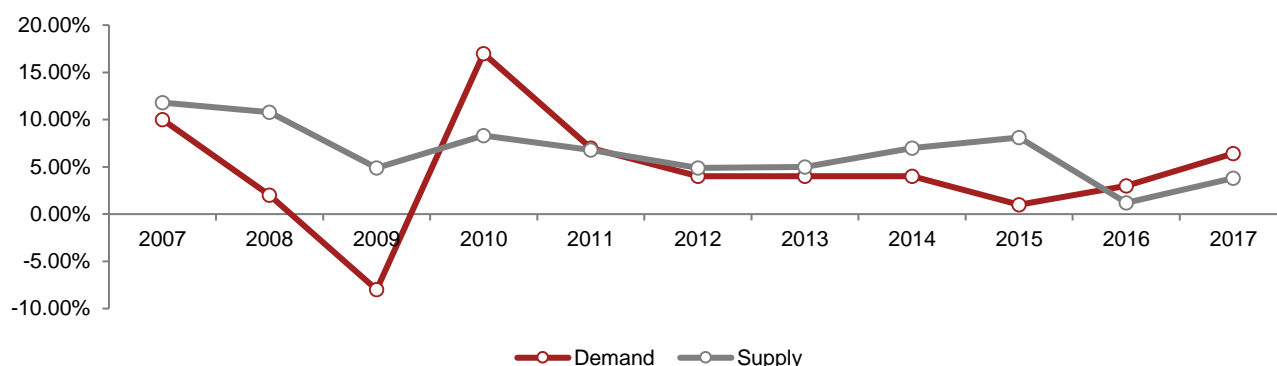
Table 17 Growth of demand and supply in container shipping, 2007–2017 (annual growth rates)

Year	Demand	Supply
2007	10.00%	11.80%
2008	2.00%	10.80%
2009	-8.00%	4.90%
2010	17.00%	8.30%
2011	7.00%	6.80%
2012	4.00%	4.90%
2013	4.00%	5.00%
2014	4.00%	7.00%
2015	1.00%	8.10%
2016	3.00%	1.20%
2017	6.40%	3.80%

e = estimative

Source: UNCTAD - Review of Maritime Transport 2018

Figure 5 Growth of demand and supply in container shipping, 2007–2017 (annual growth rates)



e = estimative

Note: Supply data refer to the total capacity of the container-carrying fleet, including multi-purpose and other vessels with some degree of container carrying capacity. Demand growth is based on million TEU lifts. The data for 2017 are projected figures

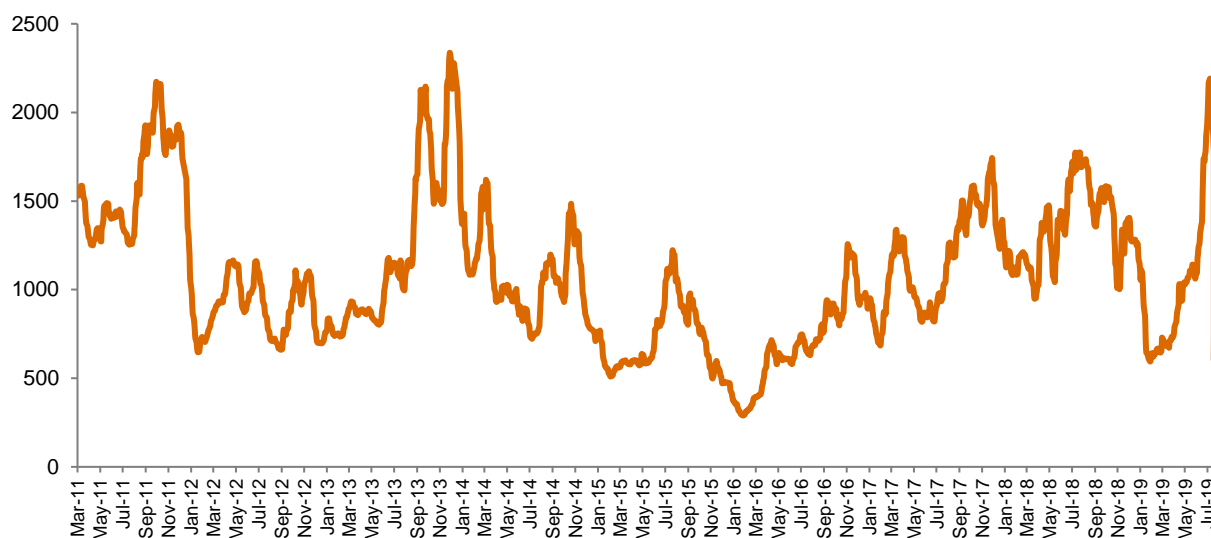
Source: UNCTAD - Review of Maritime Transport 2018



Maritime transports, ports and logistics

The Baltic Dry Index is a benchmark in the analysis of the price of shipping.

Figure 6 Baltic Exchange Dry Index, 2011–2019 (06 August 2019) (Index base year 1985 = 1,000 points)



Note: The BDI is a composite of three sub-indices, each covering a different carrier size: Capesize, Panamax, and Supramax. Capesize carriers are the largest ships with a capacity greater than 150,000 DWT. Panamax refers to the maximum size allowed for ships travelling through the Panama Canal, typically 65,000 – 80,000 DWT. The Supramax Index covers carriers with a capacity of 50,000 – 60,000 DWT.

Source: www.quandl.com/data/LLOYDS/BDI-Baltic-Dry-Index. The data refers to the first day of each month.



Maritime transports, ports and logistics

The ten largest container ports in the world are Asian, with seven being Chinese.

Table 18 Top 20 container terminals and their throughput for 2016 and 2017

Port name	Country	2016	2017	Percentage change
		million TEUs		2016/2017
Shanghai	China	37.1	40.2	8.3%
Singapura	Singapore	30.9	33.7	9.0%
Shenzhen	China	24.0	25.2	5.1%
Ningbo	China	21.6	24.6	14.1%
Busan	Republic of Korea	19.9	21.4	7.8%
Hong Kong	Hong Kong (China)	19.8	20.8	4.8%
Guangzhou	China	18.9	20.4	8.0%
Qingdao	China	18.0	18.3	1.4%
Dubai	United Arab Emirates	14.8	15.4	4.5%
Tianjin	China	14.5	15.2	5.0%
Rotterdam	Netherlands	12.4	13.6	9.8%
Port Kelang	Malaysia	13.2	12.1	-8.4%
Antwerp	Belgium	10.0	10.5	4.1%
Xiamen	China	9.6	10.4	8.0%
Kaohsiung	Taiwan	10.5	10.2	-2.2%
Dalian	China	9.6	9.7	1.0%
Los Angeles	USA	8.9	9.3	5.5%
Hamburg	Germany	8.9	9.6	7.7%
Tanjung Pelepas	Malaysia	8.3	8.3	0.6%
Laem Chabang	Thailand	7.2	7.8	7.4%
Top 20 Total		318	337	5.9%

Source: UNCTAD - Review of Maritime Transport 2018



Ranking included in the map of the economy of the sea.



Maritime transports, ports and logistics

The average time that a ship passes in port can be influenced by a number of factors from the port's operating hours (there are 24-hours ports), its automation, the size of the vessels that supply it, as well as the goods (type, quantity and volume).

As can be seen are container ships that spend less time in port.

Table 19 Average time in port (days in port and total arrivals) by vessel, world, in 2017

Vessel Type	Days in port	Total arrivals
Container ships	0.92	447,626
Oil tankers	1.30	301,713
Gas carriers	1.10	64,603
Bulk carriers	2.68	236,407
Dry cargo and passenger ships	1.02	3,995,242
Total	1.31	5,045,591

Source: UNCTAD - Review of Maritime Transport 2017 e 2018

Table 20 Average time in port (days in port and total arrivals), by vessel type, 2016

Country	Container ships		Country	Oil tankers	
	Days in port	Total arrivals		Days in port	Total arrivals
China	0.83	60,795	Japan	0.45	54,015
Japan	0.29	38,415	Singapore	0.98	19,047
South Korea	0.49	23,545	China	3.12	18,702
USA	0.97	19,844	Netherlands	0.95	18,077
Thailand	0.40	16,895	USA	1.54	17,526
Singapore	0.80	16,159	South Korea	0.92	11,894
Malaysia	0.93	15,678	Russia	1.40	10,560
Germany	0.46	14,784	United Kingdom	0.94	9,950
Spain	0.51	14,018	Germany	0.58	8,509
Netherlands	1.14	12,264	France	0.96	8,205
World total	0.87	445,990	World total	1.36	309,994

Country	Dry cargoes		Country	Gas carriers	
	Days in port	Total arrivals		Days in port	Total arrivals
China	2.60	41,908	Japan	-	22,279
Japan	1.08	32,239	Thailand	0.88	6,318
USA	1.88	14,104	China	1.16	4,904
Australia	2.12	12,840	South Korea	0.95	2,817
Canada	1.50	11,278	Indonesia	1.41	2,146
India	2.83	8,885	United Kingdom	0.99	1,932
Brazil	2.70	7,814	Qatar	1.20	1,400
Indonesia	3.48	7,338	Singapore	1.10	1,219
South Korea	2.89	5,987	Belgium	1.26	1,159
Russia	3.40	4,579	Netherlands	0.88	1,156
World total	2.72	213,497	World total	1.05	59,183

Source: UNCTAD - Review of Maritime Transport 2017

Shipbuilding, maintenance and equipment





Shipbuilding, maintenance and equipment

Portfolio orders at shipyards registered growth between 2003 and 2008 and from that period until 2012, they declined. Between 2013 and 2015, this trend reversed, however, from 2016 onwards, it declined again, slightly increasing in 2018.

Table 21 Summary of activity in World Shipyards (thousands of CGT)

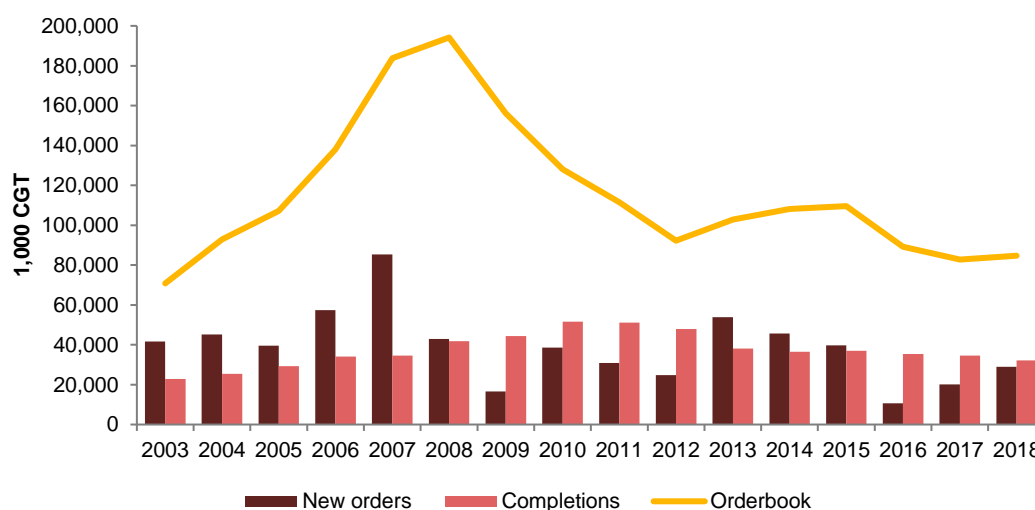
Year	Orderbook	New orders	Completions
2003	70,807	41,705	22,824
2004	92,800	45,128	25,461
2005	107,200	39,588	29,353
2006	138,000	57,315	34,123
2007	183,740	85,277	34,640
2008	194,160	42,953	41,873
2009	156,200	16,554	44,401
2010	128,010	38,581	51,573
2011	111,440	30,823	51,126
2012	92,300	24,713	47,967
2013	102,900	53,839	38,068
2014	108,140	45,592	36,450
2015	109,660	39,644	37,025
2016	89,208	10,689	35,336
2017	82,809	20,206	34,597
2018	84,681	29,031	32,137

Note: **CGT** –Compensated Gross Tonnage, international unit of measurement that makes it easier to compare shipbuilding production regardless of type of ship. The conversion factor varies with each type of vessel. The CGT of a vessel is calculated using the OECD published conversion factor table.

GT - Gross Tonnage; unit of 100 cubic feet or 2,831 cubic meters, used in the calculation of gross tonnage.

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019

Figure 7 Summary of activity in World Shipyards (thousands of CGT)



Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

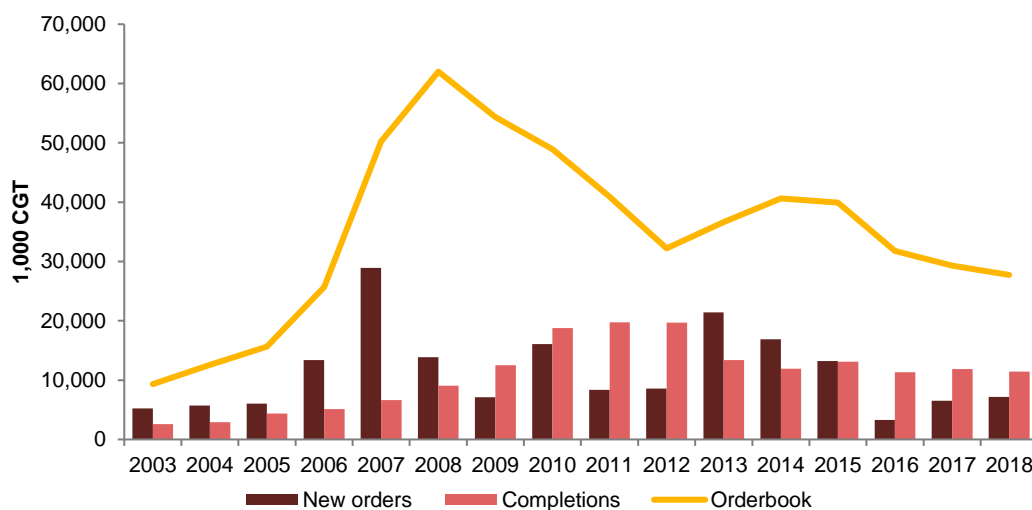
The evolution of the activity in the Chinese shipyards has followed the trend observed in the shipyards at global level, and the growth between 2003 and 2008 was much more expressive than in other areas of the globe.

Table 22 Summary of activity in Chinese shipyards (thousands of CGT)

Year	Orderbook	New orders	Completions
2003	9,327	5,235	2,604
2004	12,589	5,691	2,929
2005	15,629	6,067	4,343
2006	25,701	13,366	5,148
2007	50,221	28,925	6,638
2008	62,011	13,864	9,053
2009	54,359	7,113	12,520
2010	48,923	16,102	18,801
2011	40,878	8,339	19,739
2012	32,209	8,555	19,701
2013	36,649	21,402	13,377
2014	40,641	16,900	11,907
2015	39,925	13,228	13,124
2016	31,781	3,305	11,356
2017	29,288	6,524	11,860
2018	27,719	7,175	11,448

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019

Figure 8 Summary of activity in Chinese shipyards (thousands of CGT)



Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

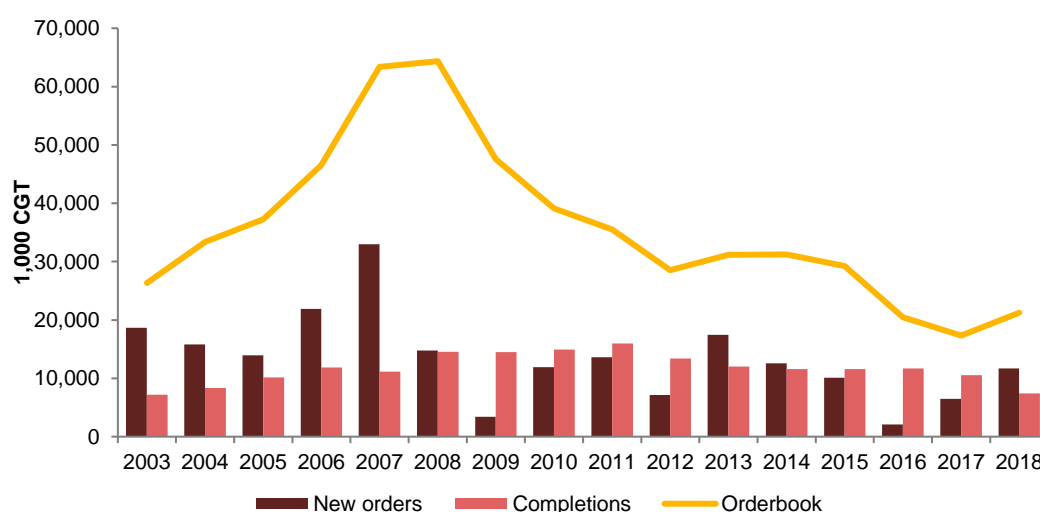
In 2018 completed shipbuilding declined from 2017.

Table 23 Summary of activity in South Korean shipyards (thousands of CGT)

Year	Orderbook	New orders	Completions
2003	26,368	18,671	7,167
2004	33,365	15,806	8,348
2005	37,243	13,960	10,136
2006	46,544	21,884	11,868
2007	63,389	32,969	11,135
2008	64,357	14,780	14,535
2009	47,576	3,383	14,463
2010	39,145	11,915	14,906
2011	35,529	13,615	15,954
2012	28,517	7,111	13,393
2013	31,169	17,437	12,027
2014	31,244	12,588	11,606
2015	29,257	10,120	11,577
2016	20,488	2,067	11,699
2017	17,325	6,478	10,534
2018	21,252	11,698	7,386

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019

Figure 9 Summary of activity in South Korean shipyards (thousands of CGT)



Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

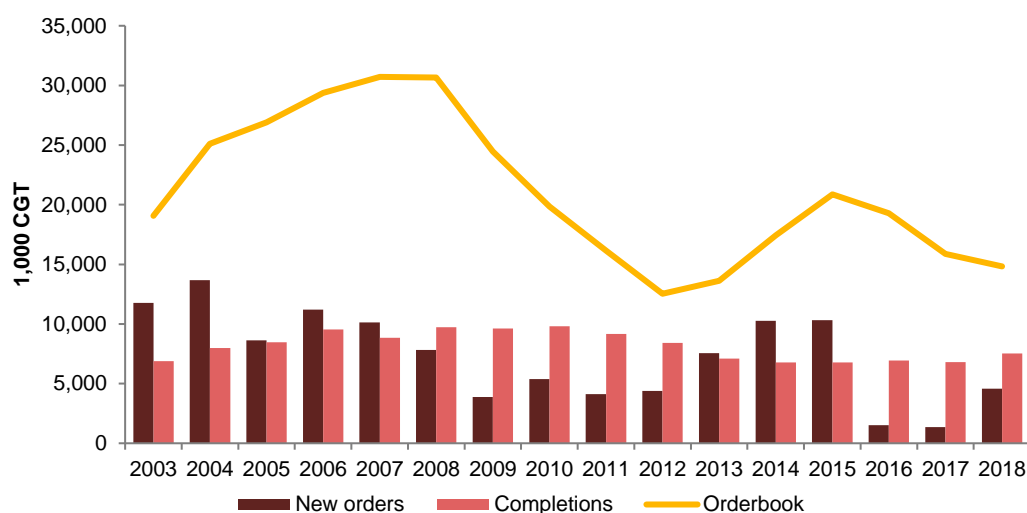
In 2018 completed naval shipments increased compared to 2017.

Table 24 Summary of activity of Japanese shipyards (thousands of CGT)

Year	Orderbook	New orders	Completions
2003	19,076	11,779	6,887
2004	25,113	13,675	7,996
2005	26,894	8,620	8,479
2006	29,372	11,193	9,551
2007	30,714	10,125	8,851
2008	30,649	7,820	9,741
2009	24,460	3,877	9,628
2010	19,836	5,374	9,821
2011	16,132	4,118	9,162
2012	12,534	4,396	8,415
2013	13,615	7,550	7,092
2014	17,442	10,256	6,768
2015	20,855	10,312	6,773
2016	19,276	1,513	6,934
2017	15,875	1,361	6,794
2018	14,831	4,581	7,536

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019

Figure 10 Summary of activity of Japanese shipyards (thousands of CGT)



Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

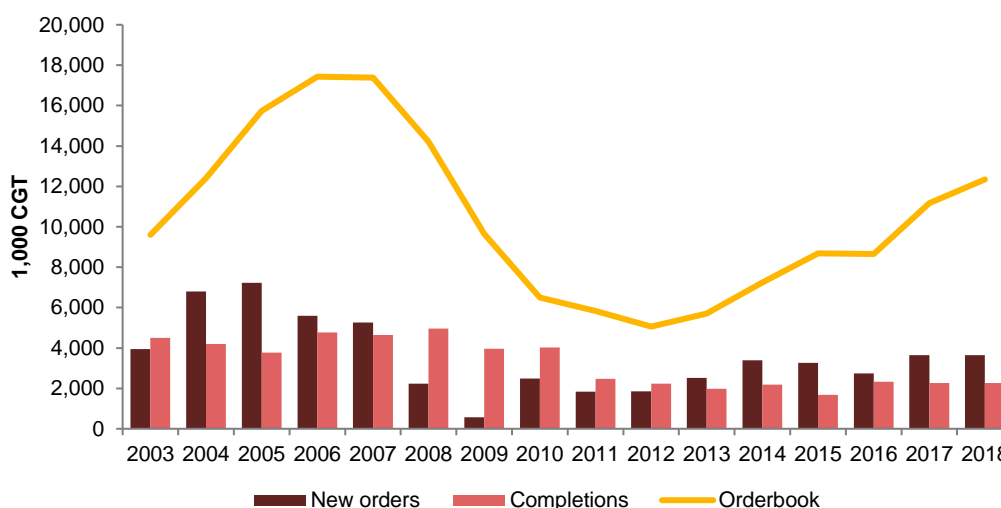
The activity of the European and Norwegian yards has been significantly lower than that of the Asian shipyards. In 2018 completed naval shipments maintained equal to 2017.

Table 25 Summary of activity of EU28 and Norway shipyards (thousands of CGT)

Year	Orderbook	New orders	Completions
2003	9,610	3,951	4,498
2004	12,406	6,798	4,194
2005	15,738	7,226	3,766
2006	17,430	5,597	4,762
2007	17,376	5,257	4,637
2008	14,209	2,229	4,962
2009	9,647	571	3,966
2010	6,495	2,487	4,020
2011	5,836	1,830	2,474
2012	5,058	1,859	2,232
2013	5,705	2,515	1,975
2014	7,247	3,394	2,179
2015	8,678	3,258	1,677
2016	8,645	2,745	2,322
2017	11,176	3,639	2,262
2018	12,341	3,638	2,264

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019

Figure 11 Summary of activity of EU28 and Norway shipyards (thousands of CGT)



Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

At the end of 2018, about 46% of vessel orders refer to solid bulk carriers, followed by orders for crude oil tankers (23%).

Table 26 Orderbook by Ship Types, 31st December 2018

Types	NO.	1,000 GT	1,000 CGT	1,000 DWT	% DWT
Crude Oil Tanker	241	24,716	8,109	46,109	22.6%
Oil Products Tanker	107	999	765	1,601	0.8%
Chemical Tanker	385	7,100	4,800	11,439	5.6%
Other Liquids	3	1	5	1	0.0%
Tankers	736	32,816	13,678	59,148	28.9%
Bulk Dry	883	49,182	19,174	91,537	44.8%
Bulk Dry / Oil	5	270	142	418	0.2%
Self-Discharging Bulk Dry	4	87	51	103	0.1%
Other Bulk Dry	38	1,019	493	1,284	0.6%
Bulk Carriers	930	50,558	19,860	93,342	45.7%
General cargo	310	2,018	2,029	2,815	1.4%
Containers	372	26,381	12,540	27,316	13.4%
Refrigerated Cargo	8	62	92	66	0.0%
Ro-Ro Cargo	104	3,348	1,978	1,114	0.5%
Other Dry Cargo	8	334	190	398	0.2%
Dry cargoes	802	32,143	16,828	31,709	15.5%
LNG Tanker	128	13,365	10,366	10,601	5.2%
LPG Tanker	95	2,752	1,856	3,043	1.5%
Gas Tankers	223	16,117	12,222	13,644	6.7%
Passenger/Ro-Ro Cargo	161	2,160	2,333	466	0.2%
Passenger (Cruise)	123	10,289	10,721	848	0.4%
Other Passenger Vessels/Ferries	101	110	203	26	0.0%
Ferries / Passenger Ships	385	12,559	13,257	1,340	0.7%
Fish Catching	240	428	1,046	201	0.1%
Other Fishing	24	33	90	8	0.0%
Offshore Supply	400	993	2,218	933	0.5%
Other Offshore	159	3,690	2,984	3,354	1.6%
Research	34	123	220	28	0.0%
Towing / Pushing	475	192	873	56	0.0%
Dredging	51	333	488	377	0.2%
Other Activities	211	606	916	302	0.1%
Other Non-Cargo Vessels	1,594	6,398	8,853	5,260	2.6%
Total	4,670	150,592	84,681	204,442	100.0%

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

In 2018, China remains the country with the highest volume of ship orders (32.7%), followed immediately by South Korea (25.1%) and Japan (17.5%). Fourth, the European Union appears with 14.4%.

Table 27 Orderbook by Country, 31st December 2018

Country	NO.	1,000 GT	%	1,000 CGT	%
Croatia	28	418	0.30%	410	0.50%
Finland	7	1,247	0.80%	1,127	1.30%
France	20	1,732	1.20%	1,586	1.90%
Germany	30	2,139	1.40%	2,057	2.40%
Italy	54	4,387	2.90%	4,705	5.60%
Netherlands	75	190	0.10%	316	0.40%
Poland	67	251	0.20%	424	0.50%
Romania	45	456	0.30%	664	0.80%
Spain	69	661	0.40%	620	0.70%
Others EU-28	52	110	0.10%	245	0.30%
EU-28	447	11,591	7.70%	12,154	14.40%
Norway	44	89	0.10%	187	0.20%
Russia	113	1,055	0.70%	1,002	1.20%
Serbia	1	0.0	0.00%	1	0.20%
Turkey	172	389	0.30%	733	0.90%
Ukraine	11	53	0.00%	76	0.10%
Others European	341	1,586	1.10%	1,999	2.40%
Japan	771	30,894	20.50%	14,831	17.50%
South Korea	464	44,564	29.60%	21,252	25.10%
China	1,649	53,841	35.80%	27,719	32.70%
Brazil	51	1,141	0.80%	847	1.00%
India	92	267	0.20%	439	0.50%
Indonesia	98	195	0.10%	311	0.40%
Malaysia	83	86	0.10%	223	0.30%
Philippines	60	2,140	1.40%	1,038	1.20%
Singapore	45	176	0.10%	249	0.30%
Taiwan	22	882	0.60%	453	0.50%
USA	45	375	0.20%	348	0.40%
Vietnam	153	1,130	0.80%	900	1.10%
Others	349	1,726	1.10%	1,918	2.30%
Rest of the World	998	8,117	5.40%	6,726	7.90%
World Total	4,670	150,592	100.00%	84,681	100.00%

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

At the end of 2018, 36% of new ship orders refer to new orders for solid bulk carriers, followed immediately by new orders for crude oil tankers (26%) and container ships (19%).

Table 28 New Orders by Ship types, 2018

Type	NO.	1,000 GT	1,000 CGT	1,000 DWT	% DWT
Crude Oil Tanker	80	9,200	2,885	17,394	25.60%
Oil Products Tanker	28	160	142	268	0.39%
Chemical Tanker	110	2,092	1,359	3,334	4.91%
Other Liquid Tankers	0	0	0	0	0.00%
Tankers	218	11,452	4,386	20,996	30.90%
Bulk Dry	223	12,630	4,911	23,529	34.63%
Bulk Dry / Oil	3	162	85	251	0.37%
Self-Discharging Bulk Dry	3	67	39	78	0.11%
Other Bulk Dry	24	551	274	709	1.04%
Bulk Carriers	253	13,410	5,309	24,567	36.16%
General cargo	97	693	648	985	1.45%
Containers	178	12,165	5,964	12,841	18.90%
Refrigerated Cargo	0	0	0	0	0.00%
Ro-Ro Cargo	34	1,241	729	452	0.67%
Other Dry Cargo	0	0	0	0	0.00%
Dry cargoes	309	14,099	7,341	14,278	21.01%
LNG Tanker	66	6,636	5,215	5,410	7.96%
LPG Tanker	39	1,143	749	1,240	1.82%
Gas tankers	105	7,779	5,964	6,649	9.79%
Passenger/Ro-Ro Cargo	81	1,194	1,257	262	0.39%
Passenger (Cruise)	45	2,887	3,220	254	0.37%
Other Passenger Vessels/ Ferries	33	24	53	5	0.01%
Ferries / Passenger Ships	159	4,105	4,531	522	0.77%
Fish Catching	113	197	476	94	0.14%
Other Fishing	9	9	28	1	0.00%
Offshore Supply	11	3	15	0	0.00%
Other Offshore	11	447	300	633	0.93%
Research	5	17	35	3	0.00%
Towing / Pushing	146	55	259	15	0.02%
Dredging	13	122	166	134	0.20%
Other Activities	49	135	221	55	0.08%
Other Non-Cargo Vessels	357	986	1,499	935	1.38%
Total	1,401	51,829	29,031	67,947	100.00%

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

Table 29 New Orders by country, 2018

Country	NO.	1,000 GT	%	1,000 CGT	%
Croatia	8	38	0.10%	86	0.30%
Denmark	7	13	0.00%	31	0.10%
Finland	1	112	0.20%	118	0.40%
France	6	178	0.30%	165	0.60%
Germany	9	618	1.20%	553	1.90%
Italy	20	1,693	3.30%	1,882	6.50%
Netherlands	28	51	0.10%	93	0.30%
Poland	22	58	0.10%	107	0.40%
Romania	14	138	0.30%	245	0.80%
Spain	30	112	0.20%	173	0.60%
United Kingdom	6	1	0.00%	6	0.00%
Others UE-28	10	23	0.10%	64	0.20%
EU-28	161	3,035	5.90%	3,523	12.10%
Norway	26	64	0.10%	115	0.40%
Russia	23	317	0.60%	263	0.90%
Turkey	79	174	0.30%	353	1.20%
Ukraine	0	0	0.00%	0	0.00%
Others European	128	555	1.10%	731	2.50%
Japan	296	9,942	19.20%	4,581	15.80%
South Korea	251	23,237	44.80%	11,698	40.30%
China	372	13,241	25.50%	7,175	24.70%
Brazil	8	4	0.00%	17	0.10%
India	7	10	0.00%	19	0.10%
Indonesia	29	41	0.10%	83	0.30%
Malaysia	16	6	0.00%	24	0.10%
Philippines	14	564	1.10%	278	1.00%
Singapore	19	31	0.10%	59	0.20%
Taiwan	14	574	1.10%	319	1.10%
USA	5	6	0.00%	16	0.10%
Vietnam	37	220	0.40%	178	0.60%
Others	44	363	0.70%	328	1.10%
Rest of the World	193	1,819	3.50%	1,321	4.60%
World Total	1,401	51,829	100.00%	29,031	100.00%

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

By the end of 2018, 34.5% of the finished ships worldwide were for bulk carriers, while 29.1% of the finished ships were for crude oil tankers.

Table 30 Completions by Ship types, 2018

Types	NO.	1,000 GT	1,000 CGT	1,000 DWT	% DWT
Crude Oil Tanker	132	12,445	4,227	23,471	29.10%
Oil Products Tanker	124	697	717	1,015	1.30%
Chemical Tanker	199	2,870	2,085	4,635	5.70%
Other Liquid Tankers	3	5	8	5	0.00%
Tankers	458	16,017	7,037	29,127	36.10%
Bulk Dry	277	14,799	5,729	24,424	34.00%
Bulk Dry / Oil	0	0	0	0	0.00%
Self-Discharging Bulk Dry	5	131	67	188	0.20%
Other Bulk Dry	15	176	110	224	0.30%
Bulk Carriers	297	15,107	5,904	27,835	34.50%
General cargo	167	999	988	1,437	1.80%
Containers	178	13,601	6,326	14,106	17.50%
Refrigerated Cargo	9	92	124	96	0.10%
Ro-Ro Cargo	54	1,200	734	381	0.50%
Other Dry Cargo	10	204	133	225	0.30%
Dry cargoes	418	16,096	8,304	16,245	20.10%
LNG Tanker	53	6,128	4,656	4,639	5.80%
LPG Tanker	40	935	716	1,058	1.30%
Gas tankers	93	7,063	5,373	5,698	7.10%
Passenger/Ro-Ro Cargo	86	483	669	117	0.10%
Passenger (Cruise)	24	1,332	1,381	107	0.10%
Other Passenger Vessels/ Ferries	99	73	177	24	0.00%
Ferries / Passenger Ships	209	1,888	2,227	248	0.30%
Fish Catching	286	252	772	94	0.10%
Other Fishing	14	21	57	11	0.00%
Offshore Supply	103	236	502	198	0.20%
Other Offshore	51	1,035	880	890	1.10%
Research	4	7	17	2	0.00%
Towing / Pushing	353	129	598	73	0.10%
Dredging	14	84	134	88	0.10%
Other Activities	101	165	332	133	0.20%
Other Non-Cargo Vessels	926	1,929	3,292	1,488	1.80%
Total	2,401	58,101	32,137	80,642	100.00%

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

In 2018, Asia (China, South Korea and Japan) accounted for about 82% of vessel production completed that year, at levels of 35.6%, 23.0% and 23.4%, respectively.

Table 31 Completions by country, 2018

Country	NO.	1,000 GT	%	1,000 CGT	%
Croatia	13	17	0.00%	46	0.10%
Finland	3	138	0.20%	152	0.50%
France	10	361	0.60%	332	1.00%
Germany	9	463	0.80%	428	1.30%
Italy	7	477	0.80%	520	1.60%
Netherlands	29	47	0.10%	87	0.30%
Poland	34	57	0.10%	133	0.40%
Romania	33	142	0.20%	196	0.60%
Spain	38	225	0.40%	186	0.60%
Others UE-28	37	28	0.20%	77	0.30%
EU-28	213	1,955	3.40%	2,157	6.70%
Norway	23	57	0.10%	107	0.30%
Russia	18	92	0.20%	122	0.40%
Turkey	64	113	0.20%	221	0.70%
Others	2	1	0.00%	5	0.00%
Other European countries	107	264	0.50%	454	1.40%
Japan	457	14,526	25.00%	7,536	23.40%
South Korea	212	14,320	24.60%	7,386	23.00%
China	782	22,840	39.30%	11,448	35.60%
Brazil	21	384	0.70%	237	0.70%
India	20	15	0.00%	39	0.10%
Indonesia	174	163	0.30%	371	1.20%
Malaysia	73	30	0.10%	117	0.40%
Philippines	39	1,996	3.40%	880	2.70%
Singapore	20	79	0.10%	82	0.30%
Taiwan	41	333	0.60%	292	0.90%
USA	60	268	0.50%	312	1.00%
Vietnam	72	482	0.80%	364	1.10%
Others	110	447	0.80%	462	1.40%
Rest of the World	630	4,196	7.20%	3,155	9.80%
World Total	2,401	58,101	100.00%	32,137	100.00%

Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019

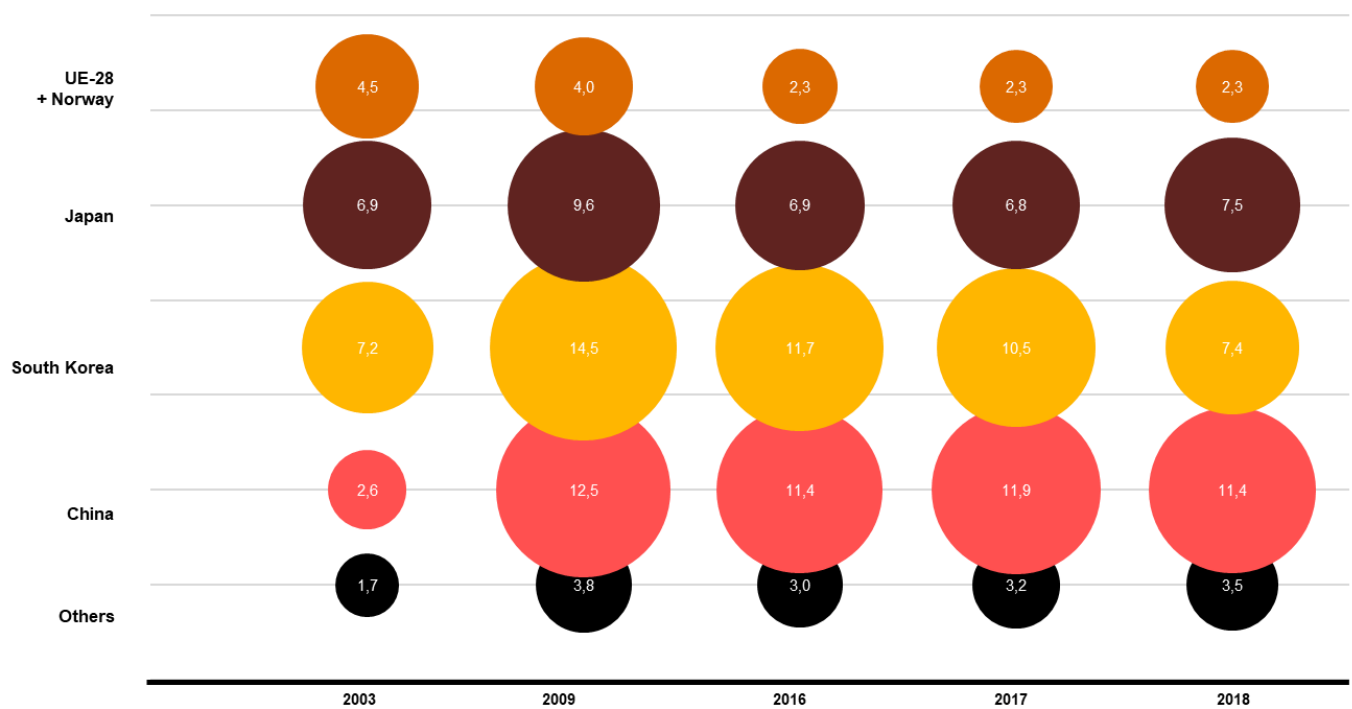


Ranking included in the map of the economy of the sea.



Shipbuilding, maintenance and equipment

Figure 12 Completions in global shipyards (in millions of CGT)



Source: Sea Europe, Shipbuilding Market Monitoring, Report No 46, 2019



Shipbuilding, maintenance and equipment

China, India, Bangladesh and Pakistan are the countries where ship dismantling is highest.

Table 32 Tonnage reported sold for demolition, major vessel types and countries where demolished in 2016 and 2017 (thousands of GT)

	China		India		Bangladesh		Pakistan		Other Asian countries		Turkey		Others		World Total	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Oil tankers	266	1	142	1,935	224	3,245	448	0	103	749	7	12	63	40	1,253	5,982
Dry cargoes	1,823	2,464	3,269	1,062	5,756	1,460	3,742	2,527	1,049	470	121	139	58	0	15,818	8,123
General cargo	44	82	519	420	152	155	66	102	37	0	192	312	36	108	1,046	1,178
Container Ships	569	650	3,922	1,755	1,675	892	119	748	1,056	140	104	309	110	3	7,556	4,498
Gas Carriers	3	4	147	145	25	59	48	0	-	0	171	173	3	5	397	387
Chemical Tankers	1	2	168	109	-	35	-	0	28	44	28	0	1	6	226	196
Offshore	24	90	340	318	64	57	249	77	218	157	46	128	122	404	1,064	1,230
Ferries and Passenger Ships	-	0	51	165	-	35	-	5	-	0	77	51	39	21	166	277
Others	356	152	375	415	344	321	-	0	81	0	252	133	33	23	1,442	1,044
Total	3,086	3,445	8,933	6,323	8,240	6,260	4,672	3,459	2,572	1,560	998	1,257	465	611	28,968	22,916

Note: Propelled seagoing merchant vessels of 100 GT and above.
Source: UNCTAD - Review of Maritime Transport 2017 and 2018

Offshore Energy





Offshore Energy

The Middle East continues to lead in terms of total oil reserves (48,3%), followed by Central & South America (18,8%) and North America (13,7%).

Table 33 Total onshore and offshore proved reserves of Oil by country (billion barrels and total world share)

	1998 end of year	2008 end of year	2017 end of year	2018 end of year (billion barrels)	Share of World Total (%)
USA	28.6	28.4	61.2	61.2	3.5%
Canada	49.8	176.3	168.9	167.8	9.7%
Mexico	21.6	11.9	7.7	7.7	0.4%
Total North America	100.0	216.6	237.8	236.7	13.7%
Argentina	2.8	2.5	2.0	2.0	0.1%
Brazil	7.4	12.8	12.8	13.4	0.8%
Venezuela	76.1	172.3	302.8	303.3	17.5%
Others Centro & South America	9.3	8.4	6.4	6.4	0.4%
Total Central & South America	95.6	196.0	324.0	325.1	18.8%
Azerbaijan	1.2	7.0	7.0	7.0	0.4%
Kazakhstan	5.4	30.0	30.0	30.0	1.7%
Norway	11.7	7.5	7.9	8.6	0.5%
Russia	113.1	106.4	106.3	106.2	6.1%
United Kingdom	5.1	3.1	2.5	2.5	0.1%
Other Europe & CIS	6.0	5.0	4.7	4.7	0.4%
Total Europe & CIS	142.5	159.0	158.4	159.0	9.2%
Iran	93.7	137.6	155.6	155.6	9.0%
Iraq	112.5	115.0	147.2	147.2	8.5%
Kuwait	96.5	101.5	101.5	101.5	5.9%
Oman	5.4	5.6	5.4	5.4	0.3%
Qatar	13.5	26.8	25.2	25.2	1.5%
Saudi Arabia	261.5	264.1	296.0	297.7	17.2%
Syria	2.3	2.5	2.5	2.5	0.1%
United Arab Emirates	97.8	97.8	97.8	97.8	5.7%
Yemen	1.9	2.7	3.0	3.0	0.2%
Other Middle East	0.2	0.1	0.1	0.2	0.0%
Total Middle East	685.2	753.7	834.3	836.1	48.3%
Algeria	11.3	12.2	12.2	12.2	0.7%
Angola	4.0	9.5	8.4	8.4	0.5%
Egypt	3.8	4.2	3.3	3.3	0.2%
Libya	29.5	44.3	48.4	48.4	2.8%
Nigeria	22.5	37.2	37.5	37.5	2.2%
South Sudan	n/a	n/a	3.5	3.5	0.2%
Others Africa	6.1	13.0	12.0	12.0	0.6%
Total Africa	77.2	120.4	125.3	125.3	7.2%
Australia	4.8	4.2	4.0	4.0	0.2%
China	17.4	21.2	25.9	25.9	1.5%
India	5.4	5.8	4.5	4.5	0.3%
Indonesia	5.1	3.7	3.2	3.2	0.2%
Malaysia	3.4	5.5	3.0	3.0	0.2%
Vietnam	1.9	4.7	4.4	4.4	0.3%
Others Asia-Pacific	2.8	2.9	2.7	2.6	0.1%
Total Asia-Pacific	40.8	48.0	47.7	47.6	2.8%
World total	1,141.2	1,493.8	1,727.5	1,729.7	100.0%

Source: BP Statistical Review 2019



Offshore Energy

By 2018, more than 48 percent of the world's proven gas reserves belong to Iran, Qatar and Russia.

Table 34 Total proved reserves of natural gas by country (trillion cubic meters and total world share)

	1998 end of year	2008 end of year	2017 end of year	2018 end of year	Share of World Total
			(trillion cubic meters)		(%)
USA	4.4	6.6	11.9	11.9	6.0%
Others North America	2.6	2.1	2.2	2.0	1.1%
Total North America	7.0	8.7	14.1	13.9	7.1%
Venezuela	4.6	5.5	6.3	6.3	3.2%
Others Central & South America	2.2	2.0	1.9	1.9	1.0%
Total Central & South America	6.8	7.5	8.2	8.2	4.2%
Russia	33.4	34.0	38.9	38.9	19.8%
Turkmenistan	2.5	8.2	19.5	19.5	9.9%
Others Europe & CIS	8.9	9.2	7.5	8.3	4.2%
Total Europe & CIS	44.8	51.4	65.9	66.7	33.9%
Iran	22.8	28.0	31.9	31.9	16.2%
Iraq	3.0	3.0	3.6	3.6	1.8%
Qatar	11.3	26.3	24.7	24.7	12.5%
Saudi Arabia	5.8	7.1	5.7	5.9	3.0%
United Arab Emirates	5.8	5.9	5.9	5.9	3.0%
Other Middle East	2.8	3.4	3.5	3.5	1.9%
Total Middle East	51.5	73.7	75.3	75.5	38.4%
Algeria	3.9	4.3	4.3	4.3	2.2%
Nigeria	3.3	5.0	5.3	5.3	2.7%
Others Africa	3.1	4.7	4.8	4.8	2.4%
Total Africa	10.3	14.0	14.4	14.4	7.3%
Australia	1.6	2.7	2.4	2.4	1.2%
China	1.4	2.7	6.1	6.1	3.1%
Others Asia Pacific	7.5	9.6	9.7	9.6	4.9%
Total Asia Pacific	10.5	15.0	18.2	18.1	9.2%
World total	130.9	170.3	196.1	196.8	100%

Source: BP Statistical Review 2019



Offshore Energy

Since the end of 2014, the price of a barrel of Brent crude oil has been below USD 100, which is in the middle of 2019, slightly above USD 60. Lowering the price of oil makes the profitability of offshore farms harder, which are more expensive than onshore holdings.

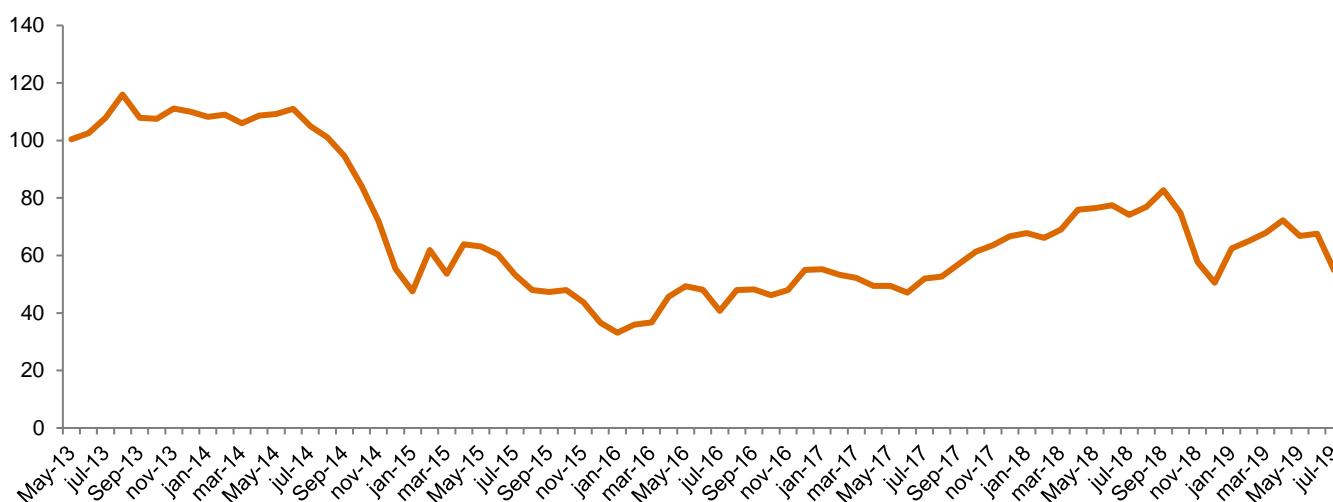
Table 35 Evolution of the Brent's price (USD/barrel)

Date	USD price per barrel	Date	USD price per barrel	Date	USD price per barrel	Date	USD price per barrel	Date	USD price per barrel
May-13	100.43	Aug-14	101.12	Nov-15	43.73	Feb-17	53.36	May-18	76.45
Jun-13	102.49	Sep-14	94.67	Dec-15	36.61	Mar-17	52.2	Jun-18	77.44
Jul-13	107.89	Oct-14	84.17	Jan-16	33.14	Apr-17	49.46	Jul-18	74.16
Aug-13	115.97	Nov-14	71.89	Feb-16	35.92	May-17	49.4	Aug-18	76.94
Sep-13	107.85	Dec-14	55.27	Mar-16	36.75	Jun-17	47.08	Sep-18	82.72
Oct-13	107.53	Jan-15	47.52	Apr-16	45.64	Jul-17	51.99	Oct-18	74.84
Nov-13	111.07	Feb-15	61.89	May-16	49.26	Aug-17	52.69	Nov-18	57.71
Dec-13	109.95	Mar-15	53.69	Jun-16	48.05	Sep-17	57.02	Dec-18	50.57
Jan-14	108.16	Apr-15	63.9	Jul-16	40.76	Oct-17	61.35	Jan-19	62.46
Feb-14	108.98	May-15	63.16	Aug-16	47.94	Nov-17	63.53	Feb-19	65.03
Mar-14	105.95	Jun-15	60.31	Sep-16	48.24	Dec-17	66.73	Mar-19	67.93
Apr-14	108.63	Jul-15	53.29	Oct-16	46.2	Jan-18	67.78	Apr-19	72.19
May-14	109.21	Aug-15	47.97	Nov-16	47.95	Feb-18	66.08	May-19	66.78
Jun-14	111.03	Sep-15	47.29	Dec-16	54.96	Mar-18	69.02	Jun-19	67.52
Jul-14	104.94	Oct-15	48	Jan-17	55.25	Apr-18	75.92	Jul-19	62.29*

Note: The price corresponds to the last day of the month.

Source: Federal Reserve Bank of St. Louis

Figure 13 Evolution of the Brent's price (USD)



Note: The price corresponds to the last day of the month.

Source: Federal Reserve Bank of St. Louis



Offshore Energy

In 2018, Saudi Arabia (10%), Qatar (8,8%) and Norway (8,2%) were the top three offshore oil and gas producers.

Table 36 Top 25 Producing countries of offshore Oil & Gas (million bbl.)

Country	2011	2012	2013	2014	2015	2016	2017	2018
Saudi Arabia	1,123.88	1,134.83	1,270.04	1,401.52	1,511.07	1,643.54	1,532.95	1,630.71
Qatar	1,359.87	1,393.71	1,416.33	1,397.86	1,420.07	1,406.34	1,416.17	1,409.62
Norway	1,279.43	1,308.85	1,242.77	1,253.15	1,322.54	1,334.52	1,370.09	1,318.59
Iran	666.58	655.32	685.75	713.31	881.04	989.77	1126.36	1,270.89
Brazil	781.22	774.95	766.55	851.76	927.68	959.17	1026.86	1,007.97
USA	844.42	771.45	743.89	786.4	817.47	831.08	839.43	845.90
UAE	580.13	579.13	618.56	611.24	643.17	671.7	656.72	705.79
Mexico	832.83	832.54	837.1	827.39	784.37	746.12	693.68	651.94
Australia	388.87	407.25	404.48	423.49	410.9	438.28	527.18	625.83
United Kingdom	629.02	536.13	492.35	492.96	561.98	574.54	568.4	600.82
Malaysia	565.54	572.76	581.53	590.51	603.79	586.43	607.91	595.26
Nigeria	714.14	712.44	653.72	646.59	685.45	591.95	598.61	566.49
Angola	613.56	639.54	624.32	610.32	641.21	622.15	588.43	539.35
China	380.91	363.71	363.22	379.46	445.71	418.01	411.31	409.42
Azerbaijan	416.09	408.24	408.34	410.7	407.36	398.48	380.9	386.87
Russia	209.58	210.74	214.63	223.89	247.62	270.03	312.57	350.35
Indonesia	400.97	374.52	364.02	356.07	354.75	336.84	325.62	322.04
Egypt	342.79	329.96	307.16	278.44	242.32	206.61	230.55	301.72
India	382.35	334.56	289.00	281.78	278.02	275.59	286.83	282.85
Thailand	221.11	250.56	249.29	247.57	252.58	257.79	253.37	241.57
Trinidad and Tobago	264.3	267.26	270.56	253.36	237.15	208.23	218.81	233.39
Vietnam	144.81	160.57	158.18	168.46	182.07	164.01	149.42	143.07
Equatorial Guinea	148.57	162.19	150.8	149.58	142.55	132.56	130.6	117.34
Venezuela	240.14	232.08	223.20	214.62	206.32	203.33	162.4	113.38
Netherlands	135.95	127.32	123.46	112.53	108.67	100.31	89.72	80.94
Other countries	1,328.96	1,322.11	1,332.54	1,287.67	1,221.13	1,246.80	1,312.03	1,332.17
Total	14,996.02	14,862.72	14,791.79	14,970.63	15,536.99	15,614.18	15,816.92	16,084.27

Source: Rystad Energy Ucube (consulted on August 2, 2019)



Ranking included in the map of the economy of the sea.



Offshore Energy

The capacity of offshore wind power in the world is led by three countries (UK, Germany and China), which represent 81.81% of the total installed capacity accumulated in the world. Fourth, Denmark accounts for 5.74% of this capacity.

Table 37 Global cumulative offshore wind capacity (MW)

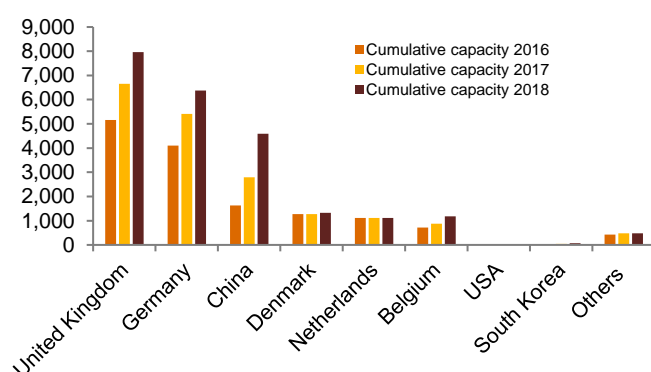
	Total 2013	Total 2014	Total 2015	Total 2016	Total 2017	Total 2018	Share of Total
	(MW)						
United Kingdom	3,681	4,500	5,100	5,156	6,651	7,963	34.41%
Germany	520	1,012	3,295	4,108	5,411	6,380	27.57%
China	429	654	1,035	1,627	2,788	4,588	19.83%
Denmark	1,271	1,271	1,271	1,271	1,268	1,329	5.74%
Netherlands	247	247	427	1,118	1,118	1,118	4.83%
Belgium	572	712	712	712	877	1,186	5.13%
USA	0.02	0.02	0.02	30	30	30	0.13%
South Korea	5	5	5	35	38	73	0.32%
Others	321	323	322	426	477	473	2.04%
Total	7,046	8,724	12,167	14,483	18,658	23,140	100.00%

Source: Global Wind Report Market update 2018



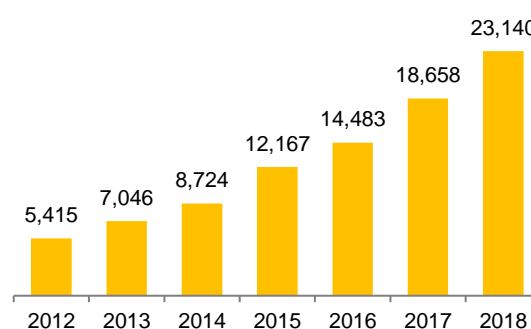
Ranking included in the map of the economy of the sea.

Figure 14 Global cumulative offshore wind capacity (MW)



Source: Global Wind Report Market update 2016-2018

Figure 15 Accumulated offshore global capacity, annual 2012-2018 (MW)

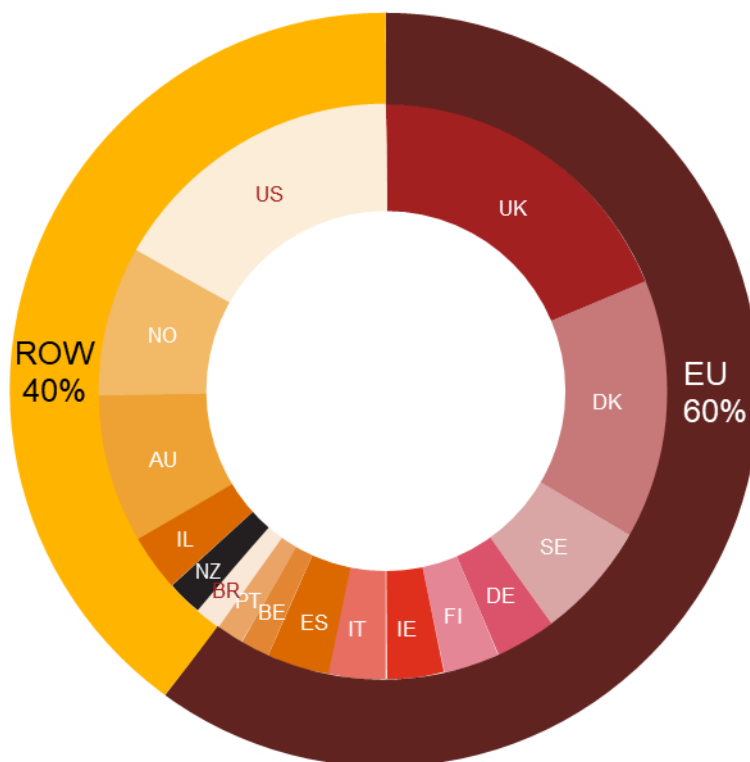


Source: Global Wind Report Market update 2012-2018



Offshore Energy

Figure 16 Distribution of wave energy developers in the world, 2016

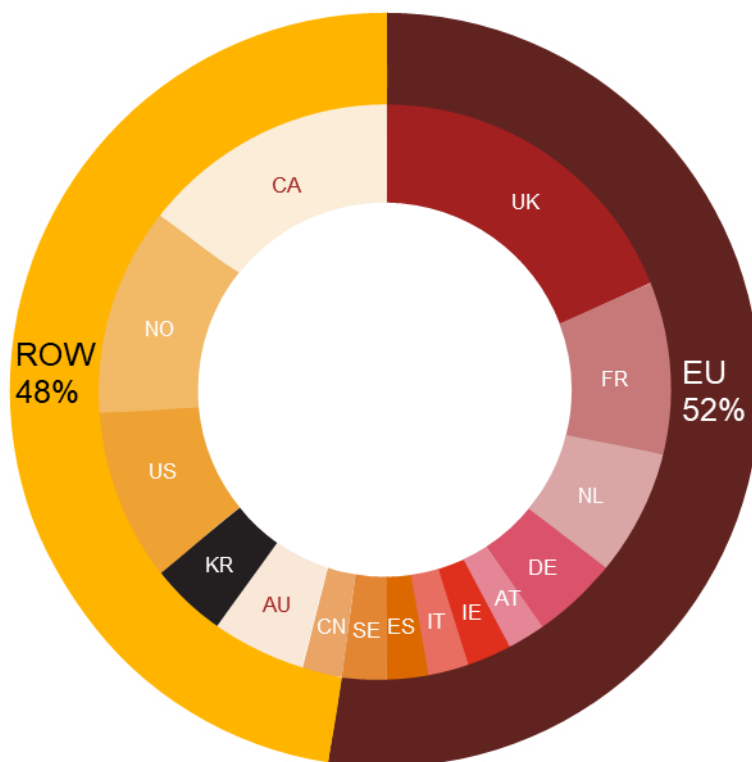


Source: 2016 JRC Ocean Energy Status Report



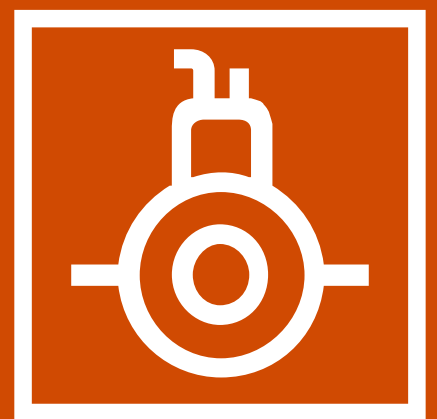
Offshore Energy

Figure 17 Distribution of tidal energy developers in the world, 2016



Source: 2016 JRC Ocean Energy Status Report

Naval security, piracy and maritime disasters (oil spills and plastic islands)





Naval security, piracy and maritime disasters (oil spills and plastic islands)

In 2019, the country with the largest number of large-scale naval equipment (aircraft carriers, frigates, destroyers, corvettes and submarines) is China with 204, followed immediately by USA with 197. Russia occupies the third place with 165 large naval equipment.

Table 38 Total Naval Ship Power by Countries (Sum of the number Aircraft Carriers, Frigates, Destroyers, Corvettes and Submarines)

		Total (Aircraft Carriers+ Frigates + Destroyers + Corvettes + Submarines)			
Top 25		2016	2017	2018	2019
1	China	175	190	192	204
2	USA	162	160	161	197
3	Russia	161	166	163	165
4	North Korea	75	89	98	96
5	Japan	63	69	63	65
6	India	66	66	64	63
7	South Korea	57	57	55	55
8	Iran	42	41	41	43
9	Turkey	37	37	38	38
10	France	36	29	37	37
11	Indonesia	18	35	35	37
12	Taiwan	29	29	29	33
13	United Kingdom	30	32	31	30
14	Italy	30	31	30	30
15	Vietnam	23	26	29	29
16	Greece	24	24	24	24
17	Egypt	21	18	21	22
18	Germany	20	21	21	21
19	Australia	22	19	19	20
20	Peru	19	20	18	18
21	Algeria	20	27	29	17
22	Pakistan	0	0	0	17
23	Brazil	19	18	17	16
24	Canada	17	16	16	16
25	Colombia	-	-	-	16

Source: Global Firepower – July 2019



Ranking included in the map of the economy of the sea.



Naval security, piracy and maritime disasters (oil spills and plastic islands)

In 2018, Nigeria was the country with the highest number of pirate attacks (24%).

Table 39 Locations of actual and attempted attacks (2011-2018)

Region	Countries	2011	2012	2013	2014	2015	2016	2017	2018	Total
Southeast Asia	Indonesia	46	81	106	100	108	49	43	36	569
	Malaysia	16	12	9	24	13	7	7	11	99
	Singapore Straits	11	6	9	8	9	2	4	3	52
	Philippines	5	3	3	6	11	10	22	10	70
	Others Asia	2	2	1	3	6	-	-	-	14
East Asia	South China Sea	13	2	4	1	-	-	-	-	20
	Vietnam	8	4	9	7	27	9	2	4	70
	Others Far East	2	1	0	-	4	7	2	3	19
Indian Sub-Continent	Bangladesh	10	11	12	21	11	3	11	12	91
	India	6	8	14	13	13	14	4	6	78
South America	Brazil	3	1	1	1	-	-	-	4	10
	Colombia	4	5	7	2	5	4	6	1	34
	Ecuador	6	4	3	-	-	-	2	4	19
	Guyana	1	0	2	1	-	2	1	2	9
	Haiti	2	2	0	-	2	4	1	3	14
	Peru	2	3	4	-	-	11	2	4	26
	Venezuela	4	0	0	1	1	5	12	11	34
	Others South America	3	2	1	-	-	1	-	-	7
Africa	Benin	20	2	0	-	-	1	-	5	28
	Egypt	3	7	7	-	1	-	-	-	18
	Guinea	5	3	1	-	3	3	2	3	20
	Gulf of Aden ^a	37	13	6	4	-	1	3	1	65
	Ivory Coast	1	5	4	3	1	1	1	1	17
	Nigeria	10	27	31	18	14	36	33	48	217
	Red Sea ^a	39	13	2	4	-	-	1	-	59
	Somalia ^a	160	49	7	3	-	1	5	2	227
	Togo	6	15	7	2	-	1	-	1	32
	The Congo	3	4	3	7	5	6	1	6	35
	Others Africa	11	12	11	16	12	13	15	20	110
Total		439	297	264	245	246	191	180	201	2,063

Note: All Incidents with ^a above are attributed to Somali pirates.

Source: ICC International Maritime Bureau - Piracy e Armed Robbery against Ships



Ranking
included in the map
of the economy of
the sea.



Naval security, piracy and maritime disasters (oil spills and plastic islands)

Since 2011 there has been a downward trend in the number of pirate attacks at sea.

Of the 2,063 attacks recorded between 2011 and 2018, only 333 had no more serious consequences. In 1,367 times, pirates were able to get on board ships. In 140 of the attacks were recorded if abductions of people.

Table 40 Comparisons of the type of attacks (2011–2018)

Category	2011	2012	2013	2014	2015	2016	2017	2018	Total
Attempted	105	67	28	28	27	22	22	34	333
Boarded	176	174	202	183	203	150	136	143	1,367
Fired upon	113	28	22	13	1	12	16	18	223
Hijack	45	28	12	21	15	7	6	6	140
Total	439	297	264	245	246	191	180	201	2,063

Source: ICC International Maritime Bureau - Piracy e Armed Robbery Against Ships

Between 2011 and 2018, 3,410 people were targeted by sea piracy attacks, with more than 2,700 hostages taken and 23 killed.

Table 41 Types of violence to crew (2011–2018)

Types of Violence	2011	2012	2013	2014	2015	2016	2017	2018	Total
Assaulted	6	4	0	1	14	5	6	0	36
Hostage	802	585	304	442	271	151	91	141	2787
Injured	42	28	21	13	14	8	6	8	140
Kidnap/Ransom	10	26	36	9	19	62	75	83	320
Killed	8	6	1	4	1	0	3	0	23
Missing	0	0	1	1	0	0	0	0	2
Threatened	27	13	10	9	14	10	10	9	102
Total	895	662	373	479	333	236	191	241	3,410

Source: ICC International Maritime Bureau - Piracy e Armed Robbery Against Ships



Naval security, piracy and maritime disasters (oil spills and plastic islands)

By 2018 the types of ships most attacked were chemical carriers, followed by bulk carriers.

Table 42 Types of vessels attacked (2011-2018)

Type	2011	2012	2013	2014	2015	2016	2017	2018	Total
Bulk Carrier	100	66	53	55	86	52	38	59	509
Container	62	39	30	20	30	10	23	18	232
General cargo	35	15	17	14	15	11	12	6	125
Tanker Chem / Product	100	76	82	86	62	56	42	50	554
Tanker Crude Oil	61	32	39	24	20	13	19	16	224
Trawler/Fishing	11	5	2	3	2	1	1	12	37
Tug	32	23	18	7	10	14	11	11	126
Other	38	41	23	36	21	34	34	29	256
Total at year end	439	297	264	245	246	191	180	201	2,063

Source: ICC International Maritime Bureau - Piracy e Armed Robbery Against Ships

Of the 201 ships attacked in 2018, 39 had flag of the Marshall Islands, 29 had flag of Singapore and 27 had flag of Panama.

Table 43 Nationalities of ships attacked (2011-2018)

Flag State	2011	2012	2013	2014	2015	2016	2017	2018	Total
Antigua Barbuda	16	5	7	5	9	-	3	2	47
Bahamas	11	16	7	4	5	5	6	9	63
Hong Kong (SAR)	21	17	20	16	19	9	6	16	124
Liberia	57	45	43	20	28	17	26	19	255
Malaysia	14	12	10	9	12	6	4	7	74
Malta	25	8	8	6	11	5	8	7	78
Marshall Islands	45	21	31	36	40	36	29	39	277
Panama	71	49	32	44	38	46	27	27	334
Singapore	32	43	39	32	32	21	31	29	259
Others	147	81	67	73	52	46	40	46	552
Total at year end	439	297	264	245	246	191	180	201	2,063

Source: ICC International Maritime Bureau - Piracy e Armed Robbery Against Ships



Naval security, piracy and maritime disasters (oil spills and plastic islands)

Accidents, involving oil spills, have been occurring over time, all over the world.

Table 44 Location of major shipping oil spills (since 1967)

Top 20				Spill size (thousand tonnes)
	Ship name	Year	Location	
1	Atlantic Empress	1979	Off Tobago, West Indies	287
2	ABT Summer	1991	700 nautical miles off, Angola	260
3	Castillo de Bellver	1983	Off Saldanha Bay, South Africa	252
4	Amoco Cadiz	1978	Off Brittany, France	223
5	Haven	1991	Genova, Italy	144
6	Odyssey	1988	700 nautical miles off Nova Scotia, Canada	132
7	Torrey Canyon	1967	Scilly Isles, United Kingdom	119
8	Sea Star	1972	Oman Golf	115
9	Sanchi*	2018	Off Shanghai, China	113
10	Irenes Serenidade	1980	Navarino Bay, Greece	100
11	Urquiola	1976	La Coruna, Spain	100
12	Hawaiian Patriot	1977	300 nautical miles off Honolulu, Australia	95
13	Independenta	1979	Bosphorus, Turkey	95
14	Jakob Maersk	1975	Oporto, Portugal	88
15	Braer	1993	Shetle Isles, United Kingdom	85
16	Aegean Sea	1992	La Coruna, Spain	74
17	Sea Empress	1996	Milford Haven, United Kingdom	72
18	Khark 5	1989	120 nautical miles off Atlantic, coast of Morocco	70
19	Nova	1985	Off Kharg Island, Iran Golf	70
20	Katina P	1992	Off Maputo, Mozambique	67

* Single non persistent oil spill
Source: ITOPF – Oil Tanker Spill Statistics 2018

Table 45 Other relevant offshore spills

	Description	Year	Location
1	Deepwater Horizon	2010	Mexican Gulf
2	Ixtoc 1 Oil Well	1979	Bay of Campeche, Mexico
3	Nowruz Oil Field	1983	Persian Gulf

Source: The Telegraph



Naval security, piracy and maritime disasters (oil spills and plastic islands)

The main areas with the largest number and weight of plastic particles are the North Pacific Ocean (38% and 36%, respectively), the Indian Ocean (25% and 22%, respectively) and the North Atlantic Ocean (18% and 21%, respectively).

Table 46 Main areas of plastic accumulation

	Size	Region Name						Total
		North Pacific	Indian Ocean	North Atlantic	South Pacific	South Atlantic	Mediterranean Sea	
Number	0.33 - 1.00 mm	68.8	45.5	32.4	17.6	10.6	8.5	183.0
	1.01 - 4.75 mm	116.0	74.9	53.2	26.9	16.7	14.6	302.0
	4.76 - 200mm	13.2	9.2	7.3	4.4	2.4	1.6	38.1
	>200 mm	0.3	0.2	0.2	0.1	0.1	0.0	0.9
	Total	199.0	130.0	93.0	49.1	29.7	24.7	525.0
Weight	0.33 - 1.00 mm	21.0	14.6	10.4	6.5	3.7	14.1	70.4
	1.01 - 4.75 mm	100.0	60.1	42.1	16.9	11.7	53.8	285.0
	4.76 - 200mm	109.0	64.6	45.2	17.8	12.4	57.6	306.0
	>200 mm	734.0	452.0	467.0	169.0	100.0	106.0	2028.0
	Total	964.0	591.3	564.7	210.2	127.8	231.5	2689.4

Source: Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Borerro JC, et al. (2014) Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. PLoS ONE 9(12): e111913. <https://doi.org/10.1371/journal.pone.0111913>
 Note: Number: (n x 10¹⁰ pieces); Weight: (g x 10⁶; or g x 10² tons).

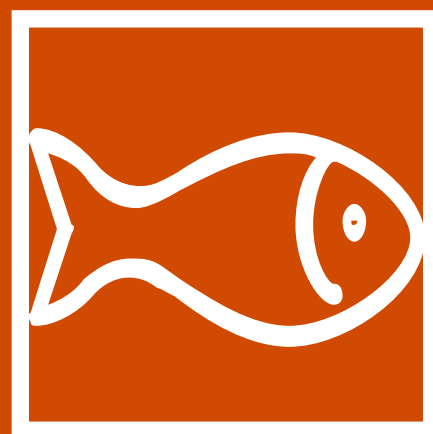
Asia is the region with the largest coastline extension affected by levels of maximum pollution originated on land.

Maximum pollution originated on land



Source: The Sustainable Development Goals Report 2019, UN.

Fisheries and aquaculture





Fisheries and aquaculture

Between 2004 and 2016, as the world population has grown, there was an increase in the consumption of fish and other food products of the sea per capita. In 2004, per capita consumption was 16.2 kg, with a per capita consumption of 20.4 kg in 2016. This increase in per capita consumption was achieved through increased production in Aquaculture. Production in inland and marine aquaculture in 2004 reached approximately 27.8 and 18.1 million tons respectively, while in 2016 it reached a production of 51.4 and 28.7 million tons. Catches of fish at sea, although they continue to represent the largest contribution in the supply of fish, have not increased in recent years, with a reduction between 2015 and 2016.

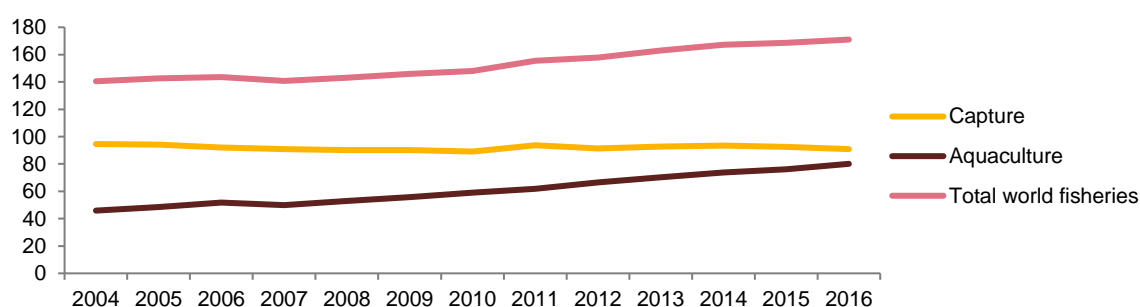
Table 47 World fisheries and aquaculture production and utilisation (million tonnes)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Production	(million tonnes)												
Inland													
Capture	8.9	9.7	9.8	10.1	10.3	10.5	11.3	10.7	11.2	11.2	11.3	11.4	11.6
Aquaculture	27.8	29.6	31.3	29.9	32.4	34.3	36.9	38.6	42.0	44.8	46.9	48.6	51.4
Total Inland	36.7	39.3	41.1	40.0	42.7	44.8	48.2	49.3	53.2	56.0	58.2	60.0	63.0
Marine													
Capture	85.7	84.5	80.2	80.7	79.9	79.7	77.9	81.5	78.4	79.4	79.9	81.2	79.3
Aquaculture	18.1	18.9	16.0	20.0	20.5	21.4	22.1	23.2	24.4	25.4	26.8	27.5	28.7
Total Marine	103.8	103.4	96.2	100.7	100.4	101.1	100.0	104.7	102.8	95.8	106.7	108.7	108.0
Total Capture	94.6	94.2	90.0	90.8	90.1	90.2	89.1	92.2	89.6	81.6	91.2	92.6	90.9
Total Aquaculture	45.9	48.5	47.3	49.9	52.9	55.7	59.0	61.8	66.4	70.2	73.7	76.1	80.1
Total world fisheries	140.5	142.7	137.3	140.7	143.1	145.9	148.1	154.0	156.0	151.8	164.9	168.7	171.0
Utilisation¹													
Human consumption	104.5	107.1	110.4	117.3	120.9	123.8	128.1	130.0	136.4	140.1	144.8	148.4	151.2
Non-food uses	36.0	35.6	33.3	23.4	22.2	22.0	20.0	24.0	19.6	20.6	20.0	20.3	19.7
Population (billions)	6.4	6.5	6.6	6.7	6.8	6.8	6.9	7.0	7.1	7.2	7.3	7.3	7.4
Per capita food fish supply (kg)	16.2	16.4	16.7	17.6	17.9	18.1	18.5	18.6	19.2	19.5	19.8	20.3	20.4

¹: Utilization for 2014-2016 are provision estimate

Source: FAO - The State of the World Fisheries and Aquaculture, 2018

Figure 18 Total capture, total aquaculture and total world fisheries (million tonnes)



Source: FAO - The State of the World Fisheries and Aquaculture, 2018



Fisheries and aquaculture

The top 10 countries at the fisheries level, led by China with 19.2% of catches, account for about 60% of total global fisheries, and have significantly increased their catch in the last 10 years.

Table 48 Marine capture fisheries: major producer countries (million tonnes and % change)

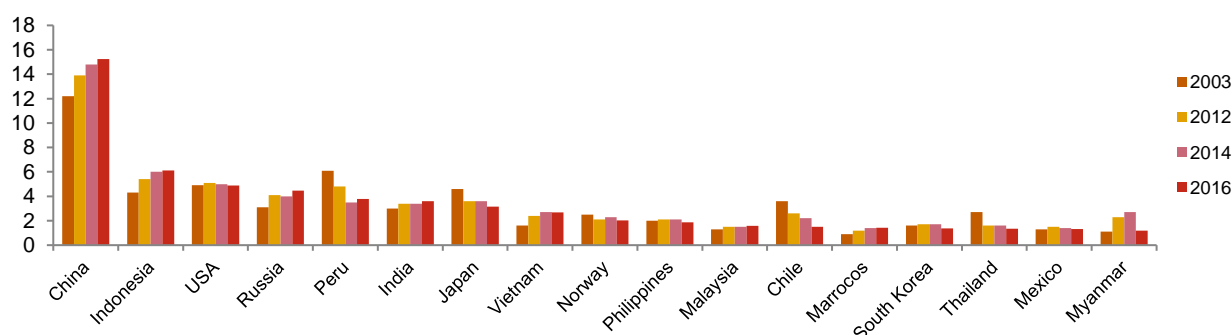
2016 Ranking	Country	2003	2011	2012	2013	2014	2015	2016	Weight 2016	Percentage Change 2015/2016	Percentage Change 2003/2016
(million tonnes)									(percentage)		
1	China	12.20	13.50	13.90	14.00	14.80	15.31	15.25	19.23%	-0.44%	24.97%
2	Indonesia	4.30	5.30	5.40	5.60	6.00	6.22	6.11	7.71%	-1.72%	42.07%
3	USA	4.90	5.10	5.10	5.10	5.00	5.02	4.90	6.18%	-2.43%	-0.06%
4	Russia	3.10	4.00	4.10	4.10	4.00	4.17	4.47	5.63%	7.05%	44.06%
5	Peru	6.10	8.20	4.80	5.80	3.50	4.79	3.77	4.76%	-21.15%	-38.13%
6	India	3.00	3.30	3.40	3.40	3.40	3.50	3.60	4.54%	2.92%	19.97%
7	Japan	4.60	3.70	3.60	3.60	3.60	3.42	3.17	3.99%	-7.48%	-31.15%
8	Vietnam	1.60	2.30	2.40	2.60	2.70	2.61	2.68	3.38%	2.72%	67.38%
9	Norway	2.50	2.30	2.10	2.10	2.30	2.29	2.03	2.56%	-11.34%	-18.68%
10	Philippines	2.00	2.20	2.10	2.10	2.10	1.95	1.87	2.35%	-4.26%	-6.75%
11	Malaysia	1.30	1.40	1.50	1.50	1.50	1.49	1.57	1.99%	5.92%	21.08%
12	Chile	3.60	3.10	2.60	1.80	2.20	1.79	1.50	1.89%	-16.07%	-58.36%
13	Morocco	0.90	1.00	1.20	1.20	1.40	1.35	1.43	1.81%	6.08%	59.00%
14	South Korea	1.60	1.70	1.70	1.60	1.70	1.64	1.38	1.74%	-16.04%	-13.94%
15	Thailand	2.70	1.60	1.60	1.60	1.60	1.32	1.34	1.69%	1.97%	-50.26%
16	Mexico	1.30	1.50	1.50	1.50	1.40	1.32	1.31	1.65%	-0.30%	0.85%
17	Myanmar	1.10	2.20	2.30	2.50	2.70	1.11	1.19	1.49%	7.05%	7.73%
Total 17 major countries		56.80	62.40	59.30	60.10	59.90	59.28	57.55	72.60%	-2.90%	1.33%
Rest of the World		22.90	20.20	20.40	21.20	21.60	21.97	21.72	27.40%	-1.14%	-5.14%
World total		79.70	82.60	79.70	81.00	81.50	81.25	79.28	100.00%	-2.43%	-0.53%
Share 17 major countries (%)		71.30	75.50	74.40	73.80	73.50	72.96	72.60			

Source: FAO - The State of the World Fisheries and Aquaculture, 2018



Ranking
included in the map
of the economy of
the sea.

Figure 19 Marine capture fisheries: major producer countries (million tonnes)



Source: FAO - The State of the World Fisheries and Aquaculture, 2018



Fisheries and aquaculture

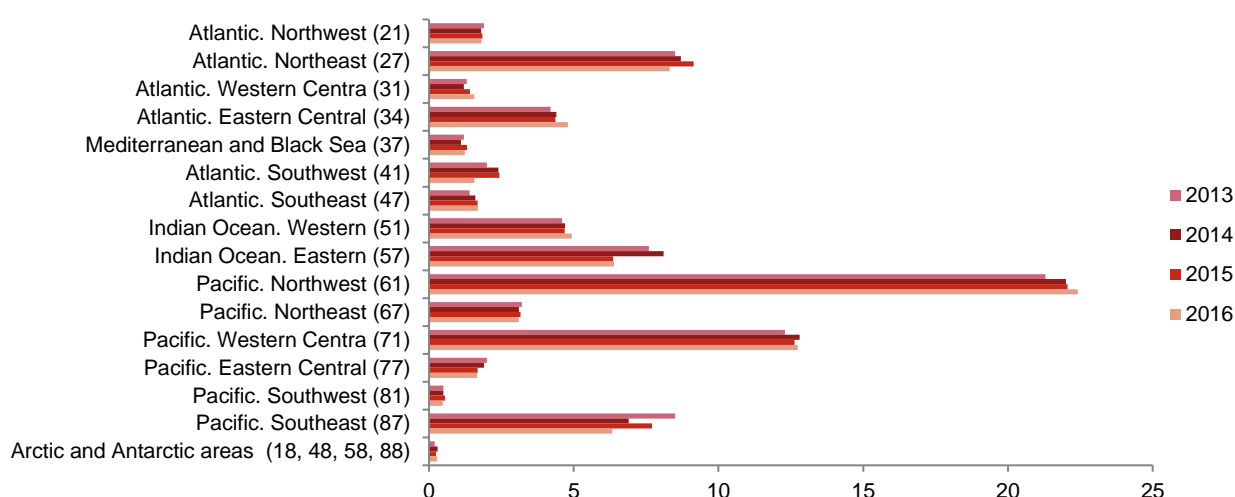
The Pacific Ocean is where most of the fishing takes place, representing about 58% of the total.

Table 49 Marine capture: major fishing areas (million tonnes and % change)

Fishing area name (area code)	2003	2011	2012	2013	2014	2015	2016	Weight 2016	Percentage Change 2003/2016
	(million tonnes)							(percentage)	
Atlantic. Northwest (21)	2.30	2.00	2.00	1.90	1.80	1.84	1.81	1.99%	-21.26%
Atlantic. Northeast (27)	10.30	8.00	8.10	8.50	8.70	9.14	8.31	9.14%	-19.29%
Atlantic. Western Central (31)	1.80	1.50	1.50	1.30	1.20	1.41	1.56	1.72%	-13.17%
Atlantic. Eastern Central (34)	3.60	4.30	4.10	4.20	4.40	4.36	4.80	5.27%	33.19%
Mediterranean and Black Sea (37)	1.50	1.40	1.30	1.20	1.10	1.31	1.24	1.36%	-17.60%
Atlantic. Southwest (41)	2.00	1.80	1.90	2.00	2.40	2.43	1.56	1.72%	-21.85%
Atlantic. Southeast (47)	1.70	1.30	1.60	1.40	1.60	1.68	1.69	1.86%	-0.71%
Indian Ocean. Western (51)	4.40	4.20	4.50	4.60	4.70	4.69	4.93	5.42%	12.07%
Indian Ocean. Eastern (57)	5.30	7.10	7.40	7.60	8.10	6.36	6.39	7.03%	20.51%
Pacific. Northwest (61)	19.90	21.40	21.50	21.30	22.00	22.06	22.41	24.65%	12.62%
Pacific. Northeast (67)	2.90	3.00	2.90	3.20	3.10	3.16	3.09	3.40%	6.62%
Pacific. Western Central (71)	10.80	11.60	12.10	12.30	12.80	12.63	12.74	14.02%	17.98%
Pacific. Eastern Central (77)	1.80	1.90	1.90	2.00	1.90	1.68	1.66	1.82%	-8.00%
Pacific. Southwest (81)	0.70	0.60	0.60	0.50	0.50	0.55	0.47	0.52%	-32.29%
Pacific. Southeast (87)	10.60	12.30	8.30	8.50	6.90	7.70	6.33	6.96%	-40.29%
Arctic and Antarctic areas (18, 48, 58, 88)	0.10	0.20	0.20	0.20	0.30	0.24	0.28	0.31%	178.00%
World total	79.70	82.60	79.70	81.00	81.50	92.66	90.91	100.00%	14.06%

Source: FAO - The State of the World Fisheries and Aquaculture, 2018

Figure 20 Marine capture: major fishing areas (million tonnes)



Source: FAO - The State of the World Fisheries and Aquaculture, 2018



Fisheries and aquaculture

The fifteen main fish species account for about 1/3 of all fish in the world.

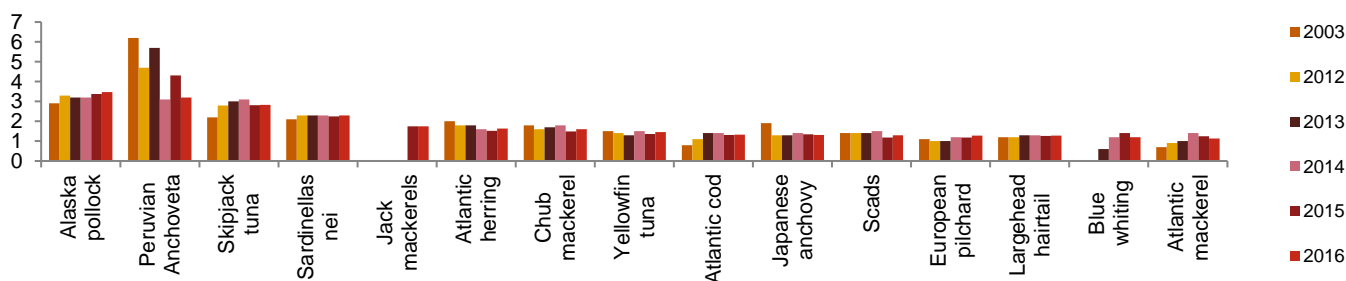
Table 50 Marine capture: major species and genera (million tonnes and % change)

	Scientific Name	English Name	2003	2011	2012	2013	2014	2015	2016	Weight 2016	Change 2015/2016	Change 2003/2016
			(million tonnes)							(percentage)		
1	<i>Theragra chalcogramma</i>	Alaska pollock	2.9	3.2	3.3	3.2	3.2	3.4	3.5	4.38%	3.08%	19.86%
2	<i>Engraulis ringens</i>	Peruvian Anchovy	6.2	8.3	4.7	5.7	3.1	4.3	3.2	4.03%	-25.94%	-48.52%
3	<i>Katsuwonus Pelamis</i>	Skipjack tuna	2.2	2.6	2.8	3	3.1	2.8	2.8	3.57%	0.71%	28.59%
4	<i>Sardinella spp.</i>	Sardinellas nei	2.1	2.3	2.3	2.3	2.3	2.2	2.3	2.89%	2.28%	9.00%
5	<i>Trachurus spp.</i>	Jack mackerels	-	-	-	-	-	1.7	1.7	2.20%	0.29%	
6	<i>Clupea harengus</i>	Atlantic herring	2	1.8	1.8	1.8	1.6	1.5	1.6	2.07%	8.40%	-18.05%
7	<i>Scomber Japonicus</i>	Chub mackerel	1.8	1.7	1.6	1.7	1.8	1.5	1.6	2.02%	7.68%	-11.22%
8	<i>Thunnus Albacares</i>	Yellowfin tuna	1.5	1.2	1.4	1.3	1.5	1.4	1.5	1.84%	7.82%	-2.53%
9	<i>Gadus morhua</i>	Atlantic cod	0.8	1.1	1.1	1.4	1.4	1.3	1.3	1.68%	2.00%	66.13%
10	<i>Engraulis Japonicus</i>	Japanese anchovy	1.9	1.3	1.3	1.3	1.4	1.3	1.3	1.64%	-2.40%	-31.37%
11	<i>Decapterus spp.</i>	Scads nei	1.4	1.4	1.4	1.4	1.5	1.2	1.3	1.64%	9.44%	-7.29%
12	<i>Sardina Pilchardus</i>	European pilchard	1.1	1	1	1	1.2	1.2	1.3	1.62%	9.11%	16.45%
13	<i>Trichiurus Lepturus</i>	Largehead hairtail	1.2	1.3	1.2	1.3	1.3	1.3	1.3	1.61%	0.87%	6.67%
14	<i>Micromesistius poutassou</i>	Blue whiting	-	-	-	0.6	1.2	1.4	1.2	1.50%	-15.84%	
15	<i>Scomber scombrus</i>	Atlantic mackerel	0.7	0.9	0.9	1	1.4	1.2	1.1	1.44%	-8.81%	62.57%
Total 15 main species and genera			26.20	29.00	25.80	27.80	27.20	27.75	27.05	34.12%	-2.53%	3.24%
Rest of the World			53.50	53.60	53.90	53.20	54.40	53.50	52.23	65.88%	-2.37%	-2.38%
World total			79.70	82.60	79.70	81.00	81.60	81.25	79.28	100.00%	-2.43%	-0.53%
Weight das 15 main species and genera (percentage)			32.90	35.10	32.40	34.30	33.30	34.15	34.12			

Catches of individual species were added to those reported for the genera.

Source: FAO - The State of the World Fisheries and Aquaculture, 2018

Figure 21 Marine capture: major species (million tonnes)



Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

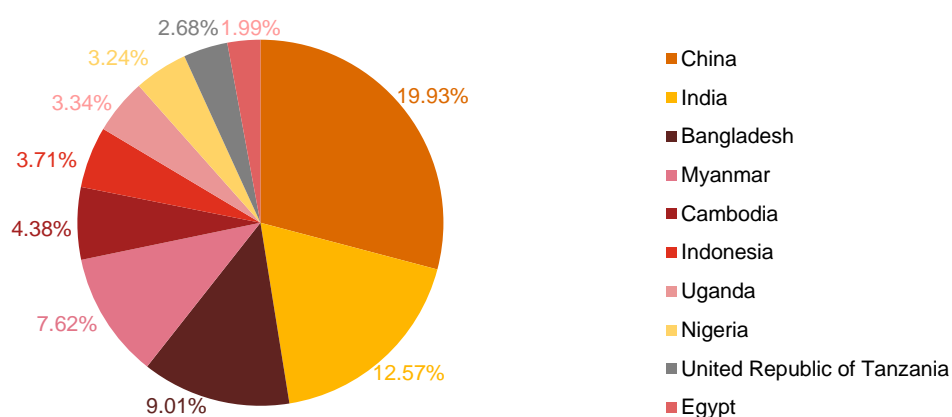
In the world the catch of fish in inland waters is also led by China.

Table 51 Inland waters capture production, by country

Country	2003	2011	2012	2013	2014	2015	2016	Weight 2016	Percentage Change 2015/2016	Percentage Change 2003/2016
	(million tonnes)							(%)		
1 China	2.10	2.20	2.30	2.30	2.30	2.28	2.32	19.93%	1.80%	10.38%
2 India	0.80	1.10	1.50	1.20	1.30	1.35	1.46	12.57%	8.62%	82.75%
3 Bangladesh	0.70	1.10	1.00	1.00	1.00	1.02	1.05	9.01%	2.44%	49.71%
4 Myanmar	0.30	1.20	1.20	1.30	1.40	0.86	0.89	7.62%	2.67%	195.33%
5 Cambodia	0.30	0.40	0.40	0.50	0.50	0.49	0.51	4.38%	4.52%	69.67%
6 Indonesia	0.30	0.40	0.40	0.40	0.40	0.47	0.43	3.71%	-8.47%	44.00%
7 Uganda	0.20	0.40	0.40	0.40	0.50	0.40	0.39	3.34%	-1.77%	94.50%
8 Nigeria	0.20	0.30	0.30	0.30	0.40	0.34	0.38	3.24%	11.87%	88.50%
9 United Republic of Tanzania	0.30	0.30	0.30	0.30	0.30	0.31	0.31	2.68%	0.97%	4.00%
10 Egypt	0.30	0.30	0.20	0.30	0.20	0.24	0.23	1.99%	-4.15%	-23.00%
Total 10 main countries	5.50	7.70	8.00	8.00	8.30	7.75	7.96	68.46%	2.75%	44.80%
Rest of the World	3.10	3.40	3.60	3.70	3.60	3.66	3.67	31.54%	0.33%	18.35%
World total	8.60	11.10	11.60	11.70	11.90	11.41	11.63	100.00%	1.97%	35.27%
Weight 10 main countries (percentage)	64.00%	69.40%	69.00%	68.40%	69.70%	67.94%	68.46%			

Source: FAO - The State of the World Fisheries and Aquaculture, 2018

Figure 22 Aquaculture production, by country, in 2016 (weight in %)



Source: FAO - The State of the World Fisheries and Aquaculture, 2018



Fisheries and aquaculture

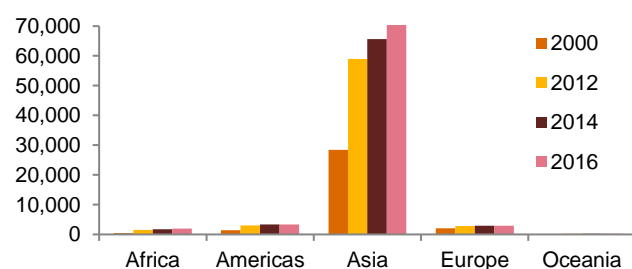
Asia accounted for 89% of world aquaculture in 2016 and is the main continent responsible for the great growth of aquaculture globally.

Table 52 Aquaculture production by region: quantity of world total production (thousand tonnes and % change)

Regions	2000	2010	2015	2016	Weight 2016	Percentage Change 2015/2016	Percentage Change 2000/2016
	(thousand tonnes)				(%)		
Africa	400	1,286	1,772	1,982	2%	12%	396.00%
North Africa	345	930	1,196	1,394	2%	17%	304.18%
Sub-Saharan	55	357	576	588	1%	2%	974.95%
Americas	1,423	2,514	3,274	3,348	4%	2%	135.21%
Chile	392	701	1,046	1,035	1%	-1%	164.03%
Latin America	447	1,154	1,615	1,667	2%	3%	272.93%
North America	585	659	613	645	1%	5%	10.35%
Asia	28,423	52,452	67,881	71,546	89%	5%	151.72%
China	21,522	36,734	47,053	49,244	62%	5%	128.81%
India	1,943	3,786	5,260	5,700	7%	8%	193.36%
Indonesia	789	2,305	4,343	4,950	6%	14%	527.38%
Vietnam	499	2,683	3,438	3,625	5%	5%	626.45%
Bangladesh	657	1,309	2,060	2,204	3%	7%	235.46%
Other Asia	3,013	5,635	5,727	5,823	7%	2%	93.29%
Europe	2,051	2,523	2,941	2,945	4%	0%	43.61%
Norway	491	1,020	1,381	1,326	2%	-4%	170.06%
EU-28	1,403	1,263	1,264	1,292	2%	2%	-7.91%
Rest of Europe	157	240	296	327	0%	10%	108.68%
Oceania	122	187	186	210	0%	13%	72.84%
World	32,418	58,962	76,054	80,031	100%	5%	147%

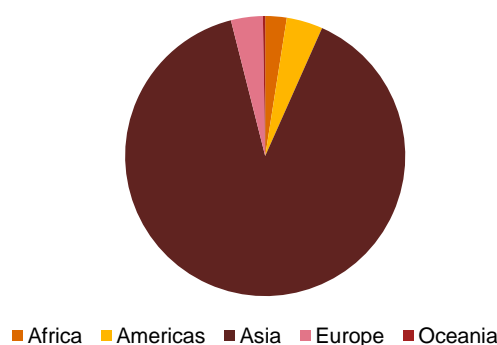
Source: FAO - The State of the World Fisheries and Aquaculture, 2018

Figure 23 Aquaculture production by region: quantity of world total production (thousand tonnes)



Source: FAO - The State of the World Fisheries and Aquaculture, 2018

Figure 24 Aquaculture production by region: quantity of world total production, 2016 (weight in %)



Source: FAO - The State of the World Fisheries and Aquaculture, 2018



Fisheries and aquaculture

Inland aquaculture is the main contributor to aquaculture growth, with China being the most relevant country, accounting for 62% of global aquaculture production.

Table 53 Main producers of farmed aquatic animals (thousand tonnes and total world share)

Producer	Total aquatic animals production				Share in total world
	2010	2012	2014	2016	2016
China	36,734	41,108	45,469	49,244	62%
India	3,786	4,210	4,881	5,700	7%
Indonesia	2,305	3,068	4,254	4,950	6%
Vietnam	2,683	3,085	3,397	3,625	5%
Bangladesh	1,309	1,726	1,957	2,204	3%
Norway	1,020	1,321	1,333	1,326	2%
Egypt	920	1,018	1,137	1,371	2%
Chile	701	1,071	1,215	1,035	1%
Top 8 subtotal	49,458	56,607	63,643	69,455	87%
Rest of the World	9,504	9,859	10,141	10,576	13%
World	58,962	66,466	73,784	80,031	100%

Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Ranking included in the map of the economy of the sea.

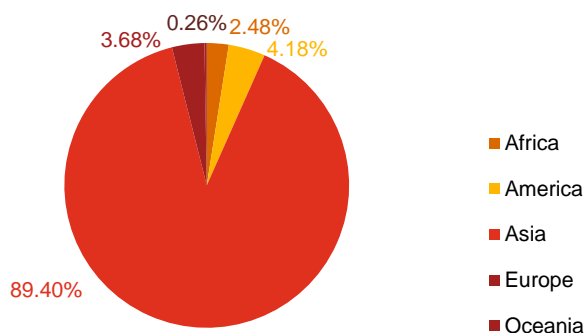
Table 54 Aquaculture of aquatic animals, by type of production, 2016 (thousand tonnes and total world share)

Producer	Fish			Total aquatic animals production	Share of world total
	Inland aquaculture	Marine/Coastal aquaculture	Other species ^a		
	(thousand tonnes)				(%)
Africa	1,954	17	11	1,982	2.48%
Americas	1,072	906	1,370	3,348	4.18%
Asia	43,983	3,739	23,823	71,545	89.40%
Europe	502	1830	613	2,945	3.68%
Oceania	5	82	124	211	0.26%
World	47,516	6,574	25,941	80,031	100.00%

^a The column other species includes crustaceans, bivalves, molluscs and other species.

Source: FAO - The State of the World Fisheries and Aquaculture in 2018

Figure 25 Market share of aquaculture animal production, 2016 (in % of total)



Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

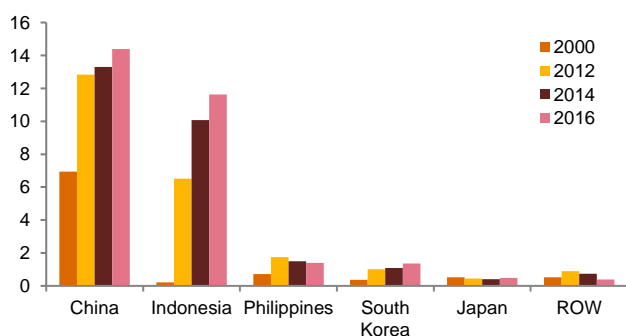
Asia is responsible for the production of more than 90% of seaweed aquaculture, where China represents the most expressive producer, followed by Indonesia, which has been increasing its production considerably and is already quite close to the Chinese production figures.

Table 55 Aquaculture production of farmed aquatic plants in the world and selected major producers (million tonnes and % change)

	2000	2010	2012	2014	2015	2016	Weight 2016	Percentage Change 2000/2016
	(million tonnes)						(%)	
China	6.94	11.00	12.75	13.24	13.84	14.39	47.9%	107.3%
Indonesia	0.21	3.92	6.52	10.08	11.27	11.63	38.7%	5438.6%
Philippines	0.71	1.80	1.75	1.55	1.57	1.41	4.7%	97.9%
South Korea	0.37	0.90	1.02	1.09	1.20	1.35	4.5%	265.1%
North Korea	0.53	0.44	0.44	0.49	0.49	0.49	1.6%	-7.7%
Japan	0.02	0.43	0.44	0.37	0.40	0.39	1.3%	1855.0%
Subtotal	8.78	18.49	22.93	26.82	28.76	29.65	98.7%	237.7%
Rest of the World	0.53	0.41	0.55	0.45	0.52	0.40	1.3%	-25.3%
World	9.31	18.90	23.48	27.27	29.28	30.05	100.0%	222.8%

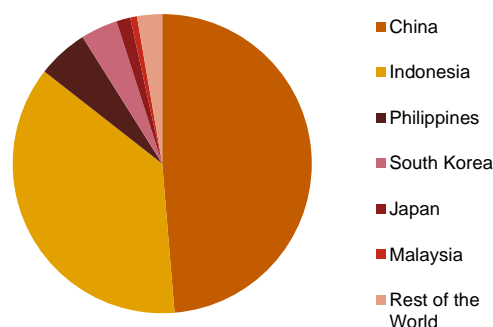
Source: FAO - The State of the World Fisheries and Aquaculture in 2018

Figure 26 Aquaculture production of farmed aquatic plants in the world and selected major producers (million tonnes)



Source: FAO - The State of the World Fisheries and Aquaculture in 2018

Figure 27 Aquaculture production of farmed aquatic plants in the world and selected major producers, 2016 (% of world total)



Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

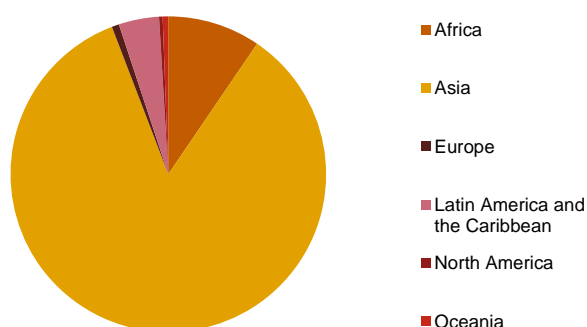
Asia is the continent with the largest number of fishermen and aquaculture producers, registering a growth of 27.3% between 2000 and 2016. Africa's growth stands out (35.8%), followed by Latin America (39%) and Oceania (171.4%) and the decrease in Europe (-42.9%) and North America (-37%).

Table 56 World fishers and fish farmers, by region (thousands and % change)

	2000	2010	2012	2014	2015	2016	Weight 2016	Percentage Change 2000/2016
	(thousands)						(%)	
Africa	4,175	5,027	5,885	5,674	5,992	5,671	29.43%	35.83%
Asia	39,646	49,345	49,040	47,730	50,606	50,468	261.89%	27.30%
Europe	779	662	647	394	455	445	2.31%	-42.88%
Latin America and the Caribbean	1,774	2,185	2,251	2,444	2,482	2,466	12.80%	39.01%
North America	346	324	323	325	220	218	1.13%	-36.99%
Oceania	126	124	127	46	343	342	1.77%	171.43%
World	46,845	57,667	58,272	56,613	60,098	59,610	309.32%	27.25%
of which, fish farmers								
Africa	91	231	298	261	305	304	1.58%	234.07%
Asia	12,211	17,915	18,175	17,540	18,528	18,478	95.89%	51.32%
Europe	103	102	103	66	88	91	0.47%	-11.65%
Latin America and the Caribbean	214	248	269	352	378	381	1.98%	78.04%
North America	6	9	9	9	9	9	0.05%	50.00%
Oceania	5	5	6	6	9	8	0.04%	60.00%
World	12,632	18,510	18,860	18,234	19,317	19,271	100.00%	52.56%

Source: FAO - The State of the World Fisheries and Aquaculture in 2018

Figure 28 Number of fisherman and fisher farmers, by region, in 2016 (thousands)



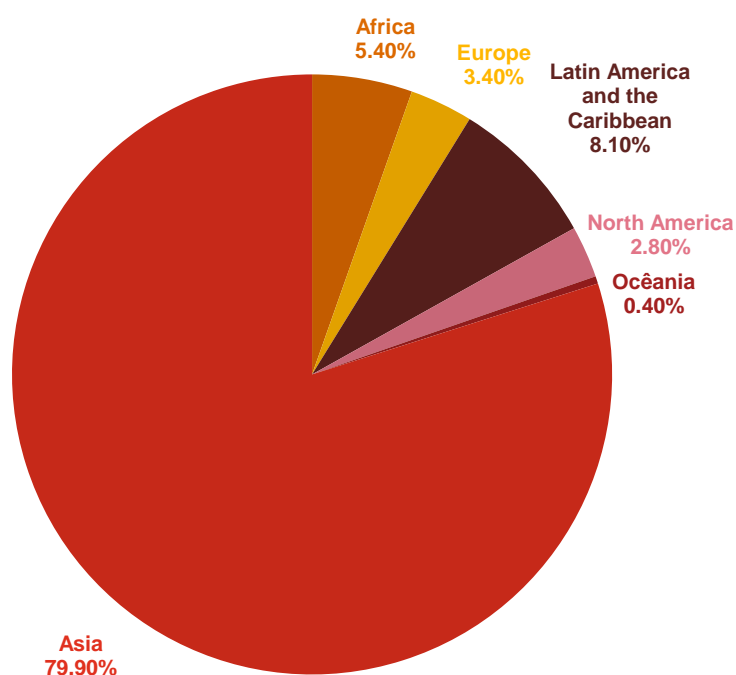
Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

Asia represents, in 2016, 80% of motorized fishing vessels.

Figure 29 Distribution of motorized fishing vessels by region in 2016 (%)



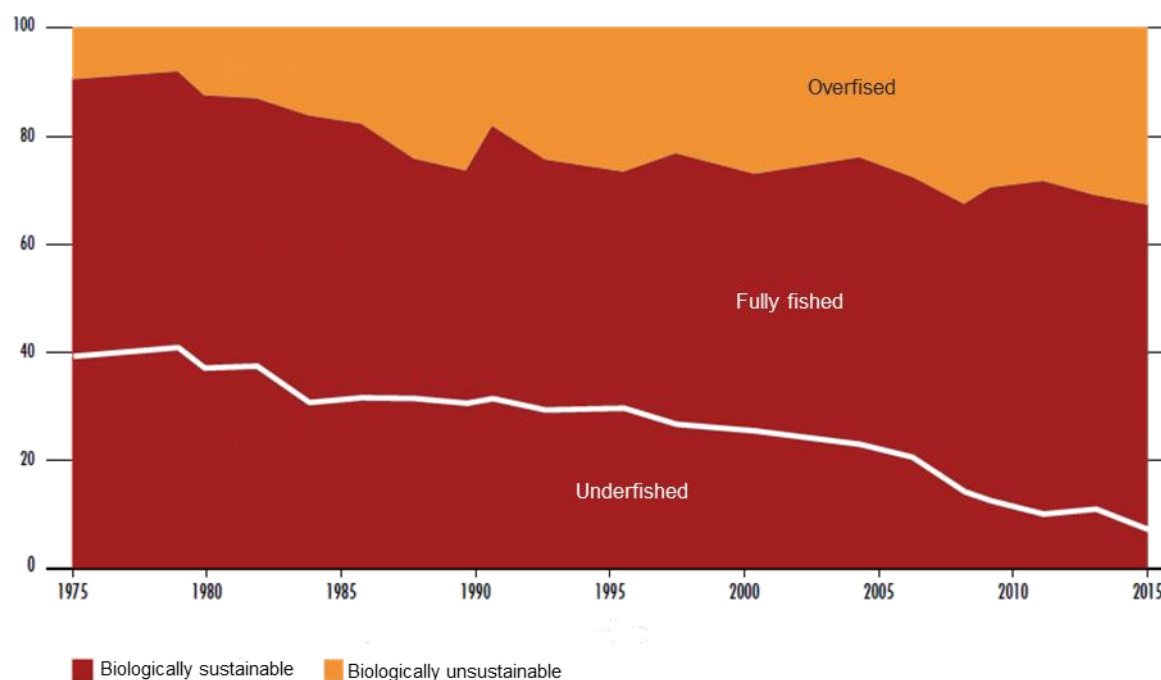
Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

From 1974 to 2015, there was an increase in the pressure on fish stocks, causing a significant increase in the number of species with overfishing or in the limit of acceptable fishing.

Figure 30 Global trends in the state of world marine fish stocks, 1974–2015 (%)



Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

China is the largest exporter of seafood products, while the United States of America is the most importing country.

Table 57 Top ten exporters and importers of fish and fishery products (million USD and % annual growth)

	2004	2014	2016	Percentage change 2014/2016
	(million USD)			%
Exporters				
China	6,637	20,980	20,131	-4%
Norway	4,132	10,803	10,770	0%
Vietnam	2,444	8,029	7,320	-9%
Thailand	4,060	6,565	5,893	-10%
USA	3,851	6,144	5,812	-5%
India	1,409	5,604	5,546	-1%
Chile	2,501	5,854	5,143	-12%
Canada	3,487	4,503	5,004	11%
Denmark	3,566	4,765	4,696	-1%
Sweden	a	a	4,418	
Top 10 subtotal	34,539	77,802	74,733	-4%
Rest of the world total	37,330	70,346	67,797	-4%
World total	71,869	148,148	142,530	-4%
Importers				
USA	11,964	20,317	20,547	1%
Japan	14,560	14,844	13,878	-7%
China	3,126	8,501	8,783	3%
Spain	5,222	7,051	7,108	1%
France	4,176	6,670	6,177	-7%
Germany	2,805	6,205	6,153	-1%
Italy	3,904	6,166	5,601	-9%
Sweden	1,301	4,783	5,187	8%
South Korea	2,250	4,271	4,604	8%
United Kingdom	2,812	4,638	4,210	-9%
Top 10 subtotal	52,120	83,446	82,248	-1%
Rest of the world total	23,583	57,169	52,789	-8%
World total	75,702	140,616	135,037	-4%

Note : a - In previous years Sweden was not in the top 10

Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

Africa and Latin America are the regions of the world with the lowest per capita consumption of fish and other seafood.

Table 58 Per capita food fish consumption by continent and economic grouping (kg/year)

	<i>Per capita sea food consumption</i>		
	2010	2013	2015
	(kg/year)		
World	18.9	19.7	20.2
World (except China)	15.4	15.3	15.5
Africa	9.7	9.8	9.9
North America	21.8	21.4	21.6
Latin America and the Caribbean	9.7	9.4	9.8
Asia	21.6	23	24
Europe	22	22.2	22.5
Oceania	25.4	24.8	25
Developed countries	27.4	26.8	24.9
Least Developed Countries	11.5	12.4	12.6
Others Developing Countries	18.9	20	20.5
LIFDCs - Low-income food-deficit countries.	10.9	7.6	7.7

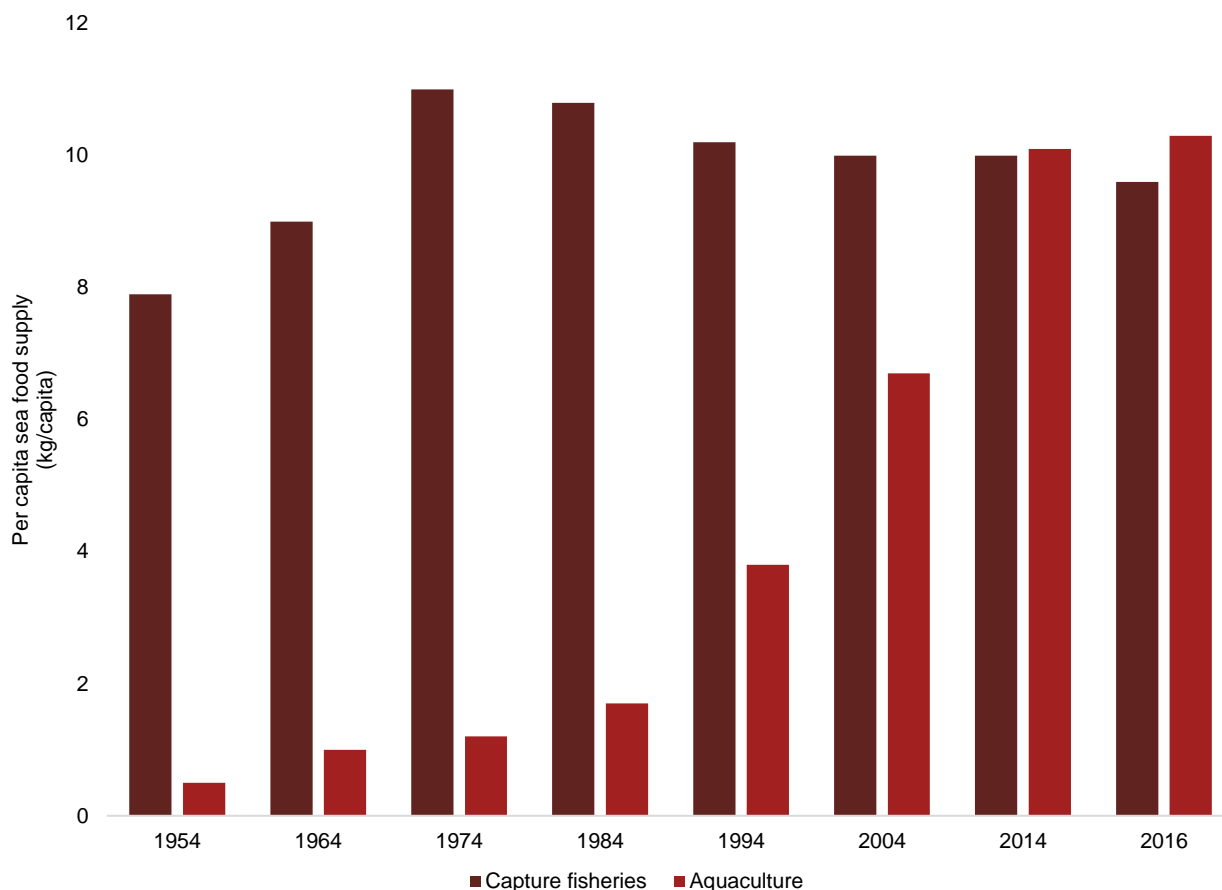
Source: FAO - The State of the World Fisheries and Aquaculture in 2018



Fisheries and aquaculture

Since 1970, Aquaculture has increased its relative importance in the sea food chain, having reached, in terms of human food, a weight similar to that of fishing.

Figure 31 Relative contribution of aquaculture and capture fisheries to fish for human consumption (kg *per capita*)



Source: FAO - The State of the World Fisheries and Aquaculture in 2018

Entertainment, sport, tourism and culture

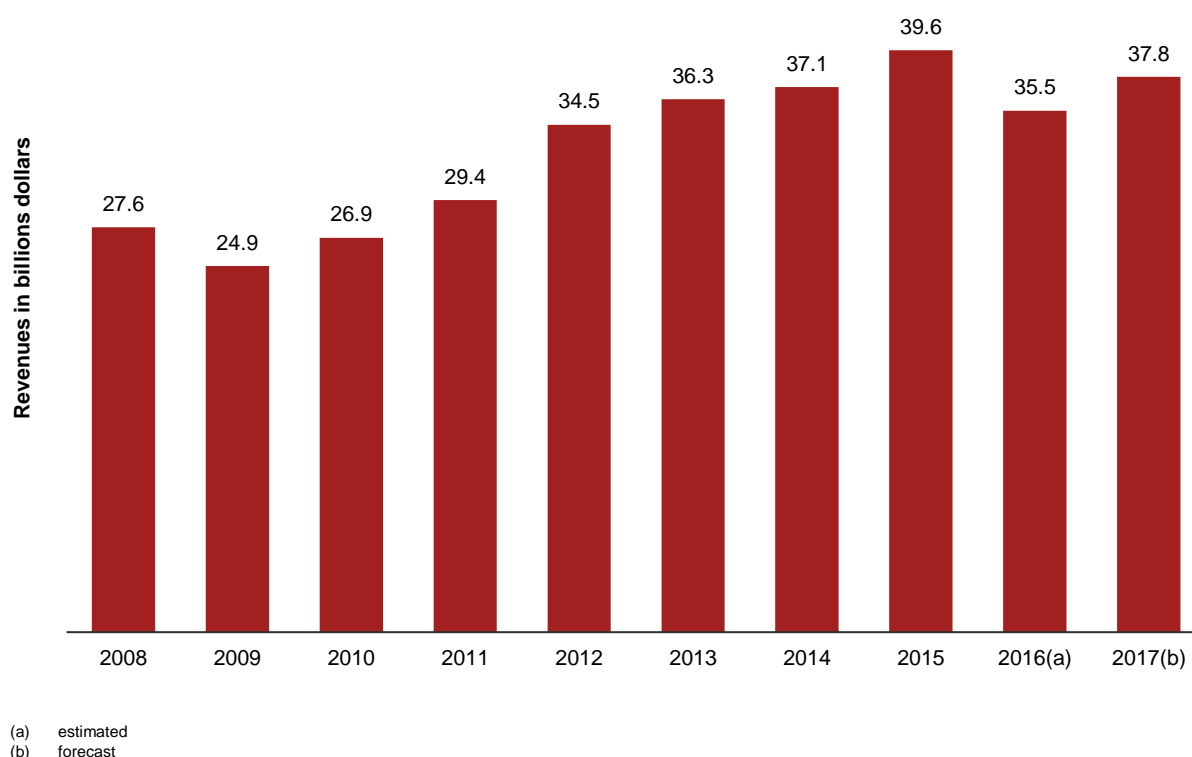




Entertainment, sport, tourism and culture

The revenue associated with cruise activity has consistently increased between 2009 and 2015. After a downward correction in 2016, it returned to growth in 2017.

Figure 32 Revenue of the cruise industry worldwide, 2008-2017 (in billion U.S. dollars)



Source: Cruise industry - Statista Dossier, 2017



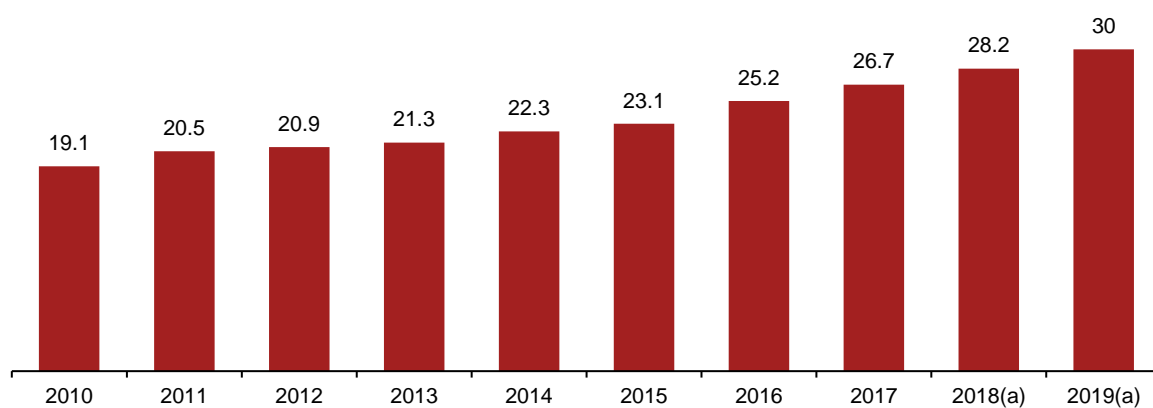
Entertainment, sport, tourism and culture

The cruise industry had the fastest growth in the leisure travel market.

The number of cruise passengers has been increasing in the last 9 years at a compound annual growth rate of 5.4%.

It is expected that in 2019 the number of cruise passengers will reach 30 million.

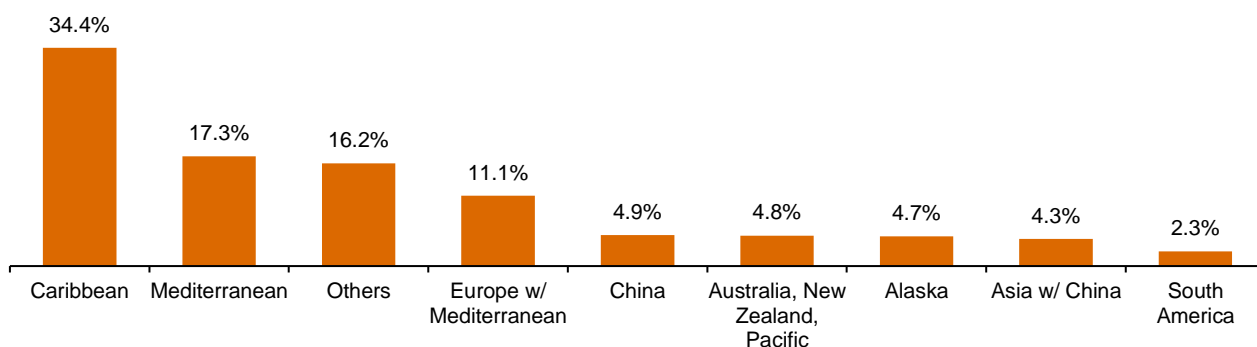
Figure 33 Number of cruise passengers, globally (in millions)



(a)projection

Source: CLIA - State of the Cruise Industry Outlook 2019

Figure 34 Passengers by region of destination, in 2019



Source: CLIA - State of the Cruise Industry Outlook 2019



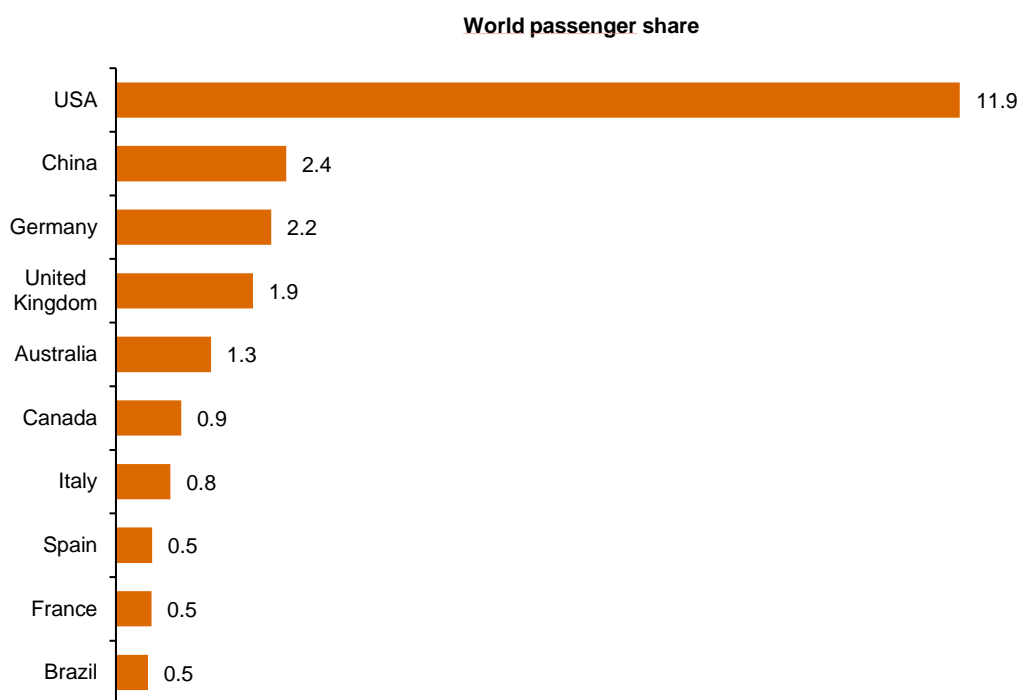
Ranking included in the map of the economy of the sea.



Entertainment, sport, tourism and culture

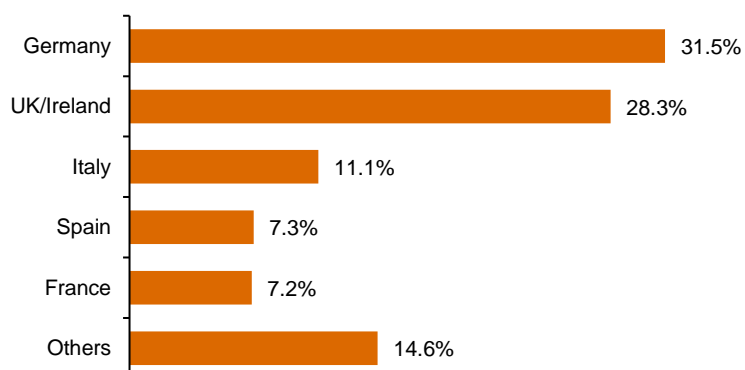
The United States of America is the country with the largest share of passengers in the cruise industry. They appear next, but with a significant distance, China, Germany and the United Kingdom.

Figure 35 Leading passenger source countries in the global cruise industry in 2019



Source: Cruise industry - Statista Dossier, 2017

Figure 36 Size of the European cruise market, by country of origin, 2019



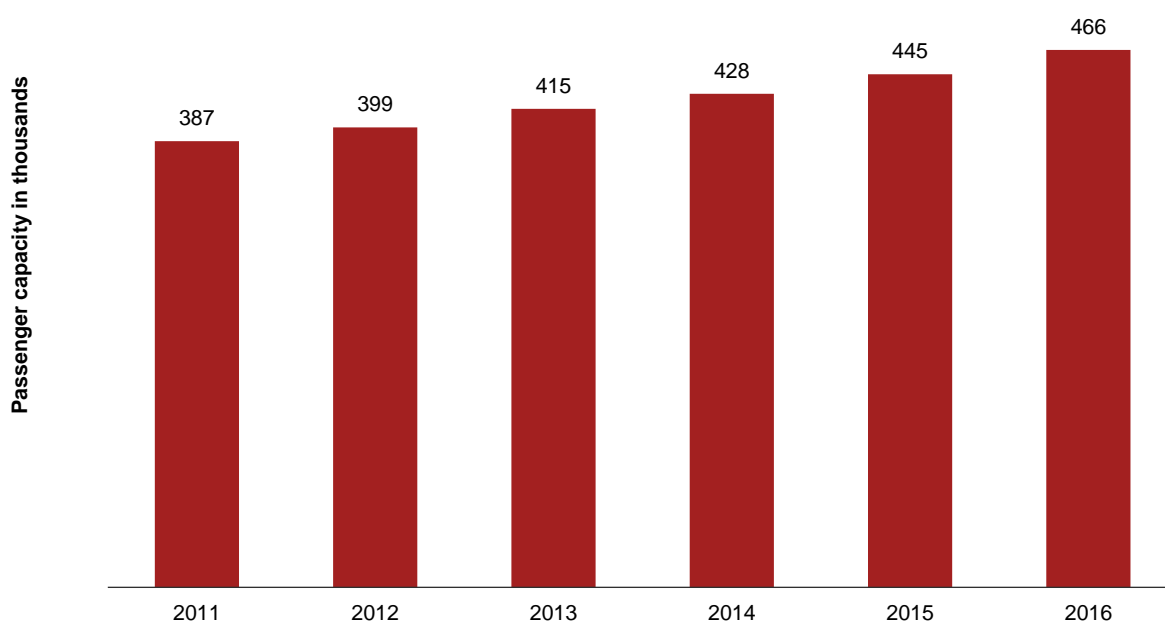
Source: Cruise industry - Statista Dossier, 2019



Entertainment, sport, tourism and culture

Over the past few years, the cruise industry has been steadily increasing its global capacity in terms of passenger transport.

Figure 37 Passenger capacity of the global cruise industry (in thousands)



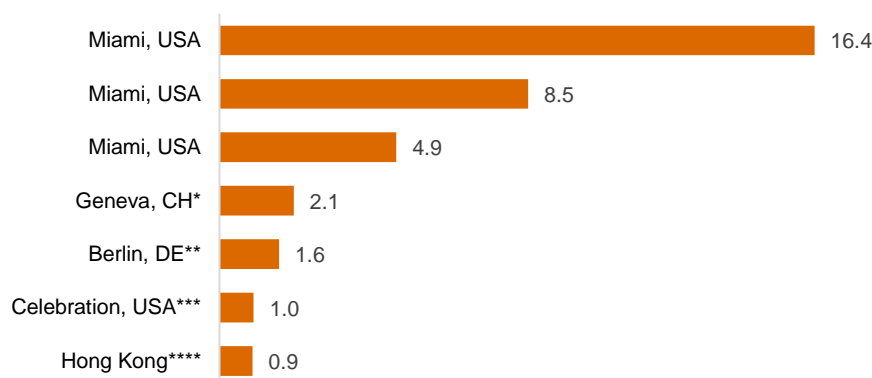
Source: Cruise industry - Statista Dossier, 2017



Entertainment, sport, tourism and culture

By the end of 2017, in terms of turnover, the three largest companies involved in operating the cruise business are based in Miami (United States of America). The fourth largest company is headquartered in Switzerland.

Figure 38 Leading cruise line companies headquarters location worldwide in 2017, by revenue (in billion U.S. dollars)



* Converted from Euros to USD using the rate 1USD=1.05356EUR (December 31, 2016)

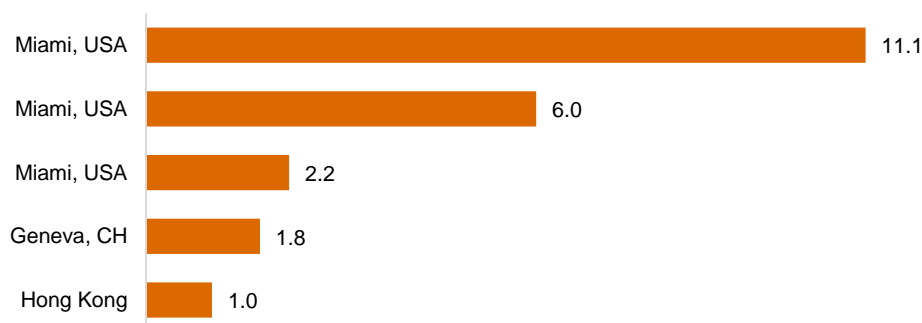
** Converted from Euros to USD using the rate 1USD=1.12218EUR (September 30, 2016). Tui Brands include Tui Cruises, Thomson Cruises and Hapag Lloyd.

*** Date as of 2014.

**** Revenue generated from Genting Hong Kong's cruise business segment. Brands includes Crystal Cruises, Dream Cruises and Star Cruises.

Source: Cruise industry - Statista Dossier, 2017

Figure 39 Passenger capacity of the cruise industry worldwide in 2017, by cruise line. (millions)



Source: Cruise industry - Statista Dossier, 2017

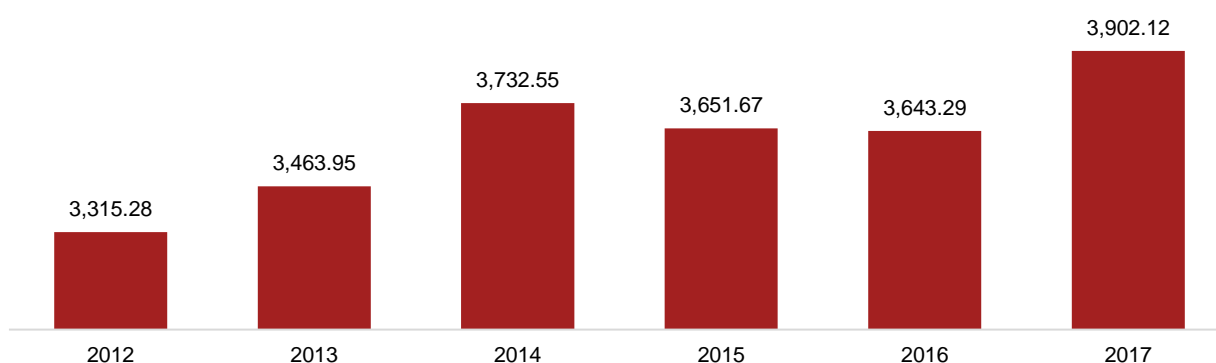


Entertainment, sport, tourism and culture

The total value of recreational craft sold in the United States of America has remained stable between 2014 and 2016 years, reaching in 2017 3,902 million USD.

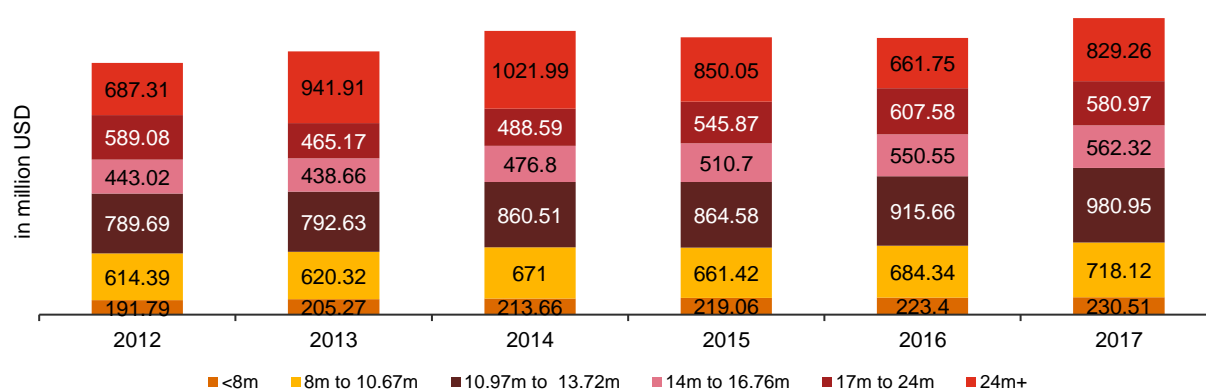
US consumers prefer boats between 10.97m to 13.72m or more than 24m.

Figure 40 Total value of leisure boats sold in the United States of America, from 2012 to 2017, in million dollars (USD)



Source: Recreational Boating in the US - Statista Dossier, 2017

Figure 41 Total value of pleasure boats sold in the United States of America, by vessel length, in 2017



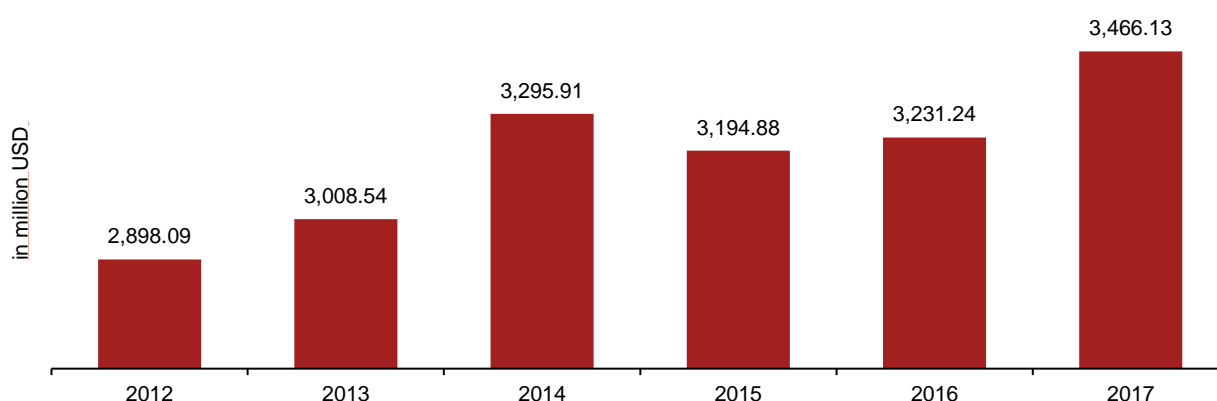
Source: Recreational Boating in the US - Statista Dossier, 2017



Entertainment, sport, tourism and culture

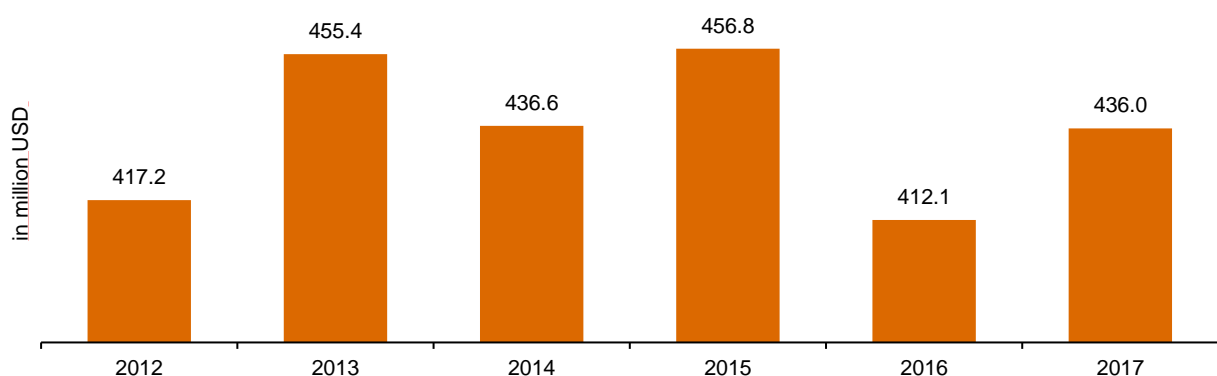
In the United States of America, in 2017, sales figures for recreational motor boats reached USD 3466 million, while sales of sailing boats amounted to USD 436 million.

Figure 42 Total value of power boats sold in the United States of America (million USD)



Source: Recreational Boating in the US - Statista Dossier, 2017

Figure 43 Total value of recreational sailboats sold in the United States of America (million USD)



Source: Recreational Boating in the US - Statista Dossier, 2017

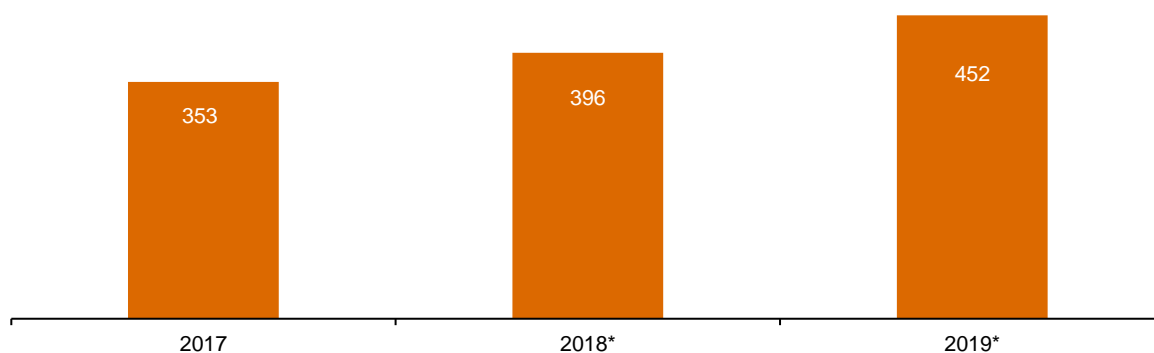


Entertainment, sport, tourism and culture

It is expected that in 2018 the dominant region in the purchase of luxury yachts will be the region of the Americas. By 2020, the Europe, Middle East and Africa (EMEA) region is expected to lead this market.

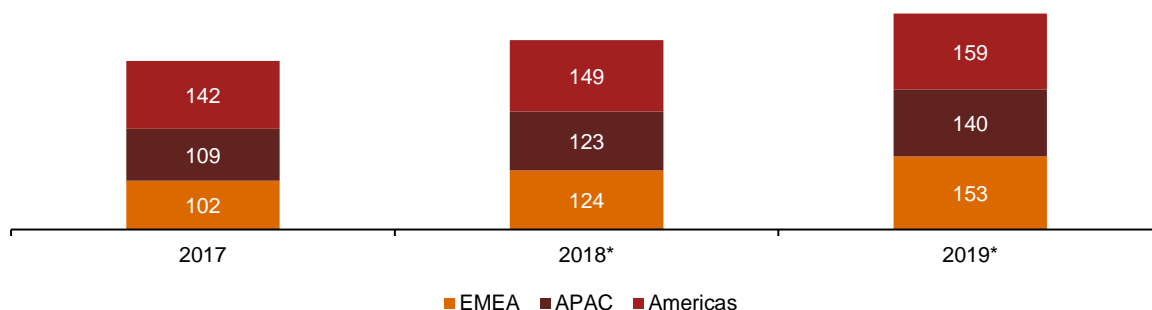
Although the number of luxury yachts sold has declined in recent years, it is expected that with the economic development of China and other emerging economies, both production and demand for these luxury goods will increase in the coming years.

Figure 44 Number of luxury yachts sold



* forecast data
Source: Global Luxury Yacht Market, 2018-2022

Figure 45 Number of luxury yachts sold, by region



* forecast data
Source: Global Luxury Yacht Market, 2018-2022

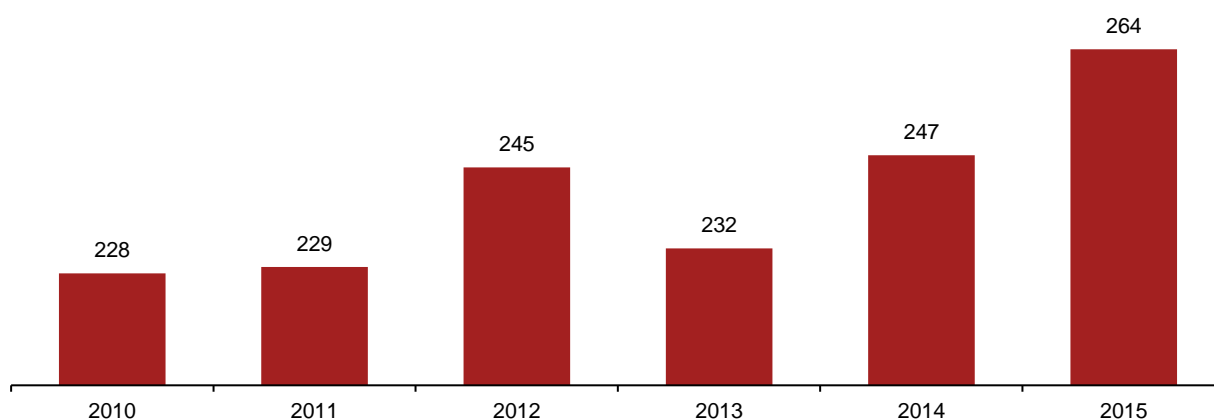


Entertainment, sport, tourism and culture

It is expected that the market for super yachts (luxury yachts over 40 meters) will continue to increase in the coming years, with the recovery of the economy and the increase in the number of ultra-high net worth individuals - UHNWI) in the Middle East and Asia.

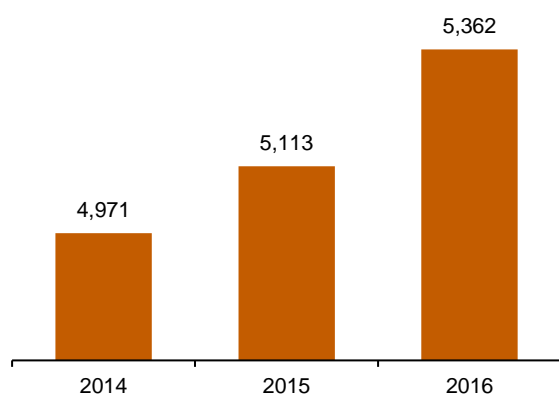
In 2017, the United States of America were the country with higher market share in yacht sales, followed by Italy.

Figure 46 Total value of super yachts sold worldwide



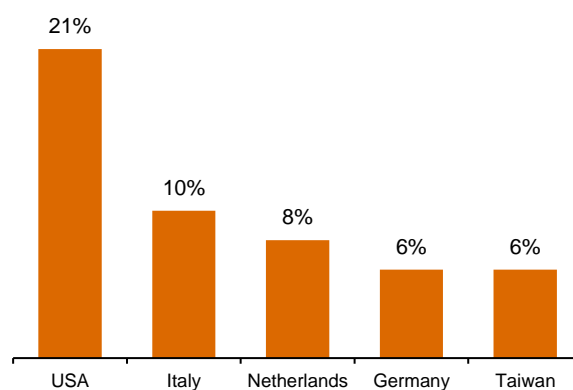
Source: Study of the Global Yacht Market 2016 – Smart Research Insights

Figure 47 Number of super yachts in the world



Source: Statista

Figure 48 Market share of main countries in yacht sales, 2017*



* provisory data based on an optimistic scenario

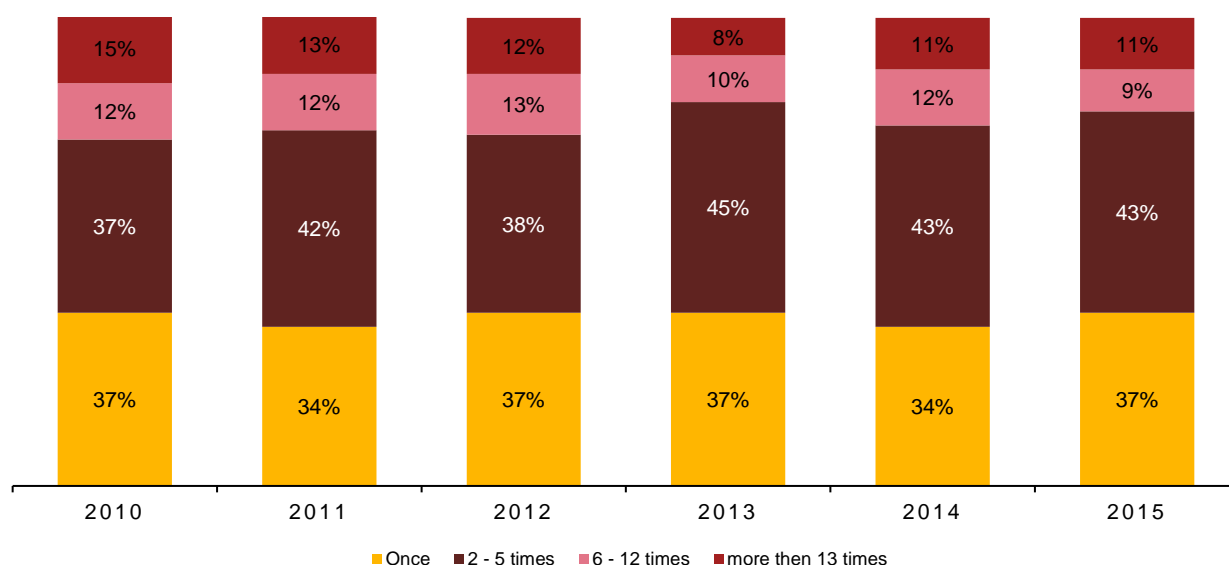
Source: Study of the Global Yacht Market 2018-2022



Entertainment, sport, tourism and culture

In 2015, in the United Kingdom, 37% of adults participated in nautical recreational activities at least once a year, 20% participated in this type of activity six or more times a year.

Figure 49 Distribution of participation in recreational boating activities by frequency in the United Kingdom, between 2010 and 2015



Source: Recreational Boating in the United Kingdom - Statista Dossier, 2016



Entertainment, sport, tourism and culture

The United States of America, Australia, New Zealand, Italy, France and the United Kingdom are reference countries for marinas and recreational craft industry.

Table 59 United States of America Exports Top 20 Markets by FAS Value (Recreational Marine Craft, parts and accessories as defined by the Harmonized Tariff System)

Top 20 markets per FAS (Annual + Year-To-Date Data from January–June. USD Thousands)							
Country	2013	2014	2015	2016	2016 YtD	2017 YtD	Percentage Change YtD 2016/2017
Canada	716,112	654,516	553,450	518,640	270,575	343,428	26.93%
Belgium	114,589	107,151	140,119	140,073	83,178	99,408	19.51%
Mexico	104,289	167,767	145,214	128,810	68,597	66,536	-3.00%
Australia	197,616	152,448	126,174	96,551	32,455	38,403	18.33%
Japan	51,271	49,988	56,785	61,248	30,518	28,038	-8.13%
Germany	43,038	45,516	40,014	41,221	24,169	22,183	-8.22%
Spain	44,514	74,878	61,859	40,534	26,039	21,423	-17.73%
China	40,710	36,435	38,127	34,548	20,675	23,864	15.42%
United Arab Emirates	35,528	48,624	37,533	34,160	15,471	17,540	13.37%
Costa Rica	24,122	43,547	5,589	27,234	6,885	5,550	-19.39%
France	27,200	29,055	28,284	27,180	15,235	14,684	-3.62%
United Kingdom	21,790	27,387	25,762	26,923	16,477	10,451	-36.57%
New Zealand	31,585	24,577	26,883	25,310	6,436	7,052	9.57%
Netherlands	32,662	33,731	19,816	21,717	13,238	12,220	-7.69%
Norway	13,701	21,000	18,384	19,063	12,453	14,498	16.42%
Italy	53,076	74,791	62,640	18,953	10,825	29,885	176.07%
Korea	13,881	19,506	17,173	18,205	10,734	11,000	2.48%
Panama	13,037	15,955	11,030	16,928	10,350	3,121	-69.85%
Brazil	68,894	56,331	33,013	16,814	7,368	7,872	6.84%
Argentina	26,772	16,448	23,852	15,729	6,729	8,606	27.89%
Subtotal	1,674,387	1,699,651	1,471,701	1,329,841	688,407	785,762	14.14%
Rest of the World	493,185	447,611	375,770	291,848	150,388	143,818	-4.37%
World Total	2,167,573	2,147,262	1,847,472	1,621,689	838,796	929,579	10.82%

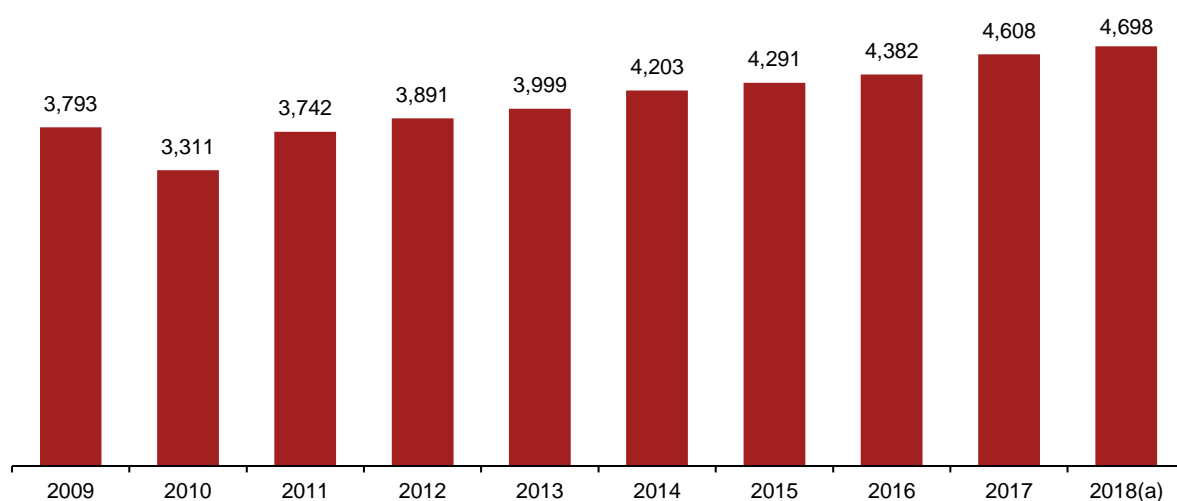
Source: Pleasure boat International Resource Guide, 2018 Edition



Entertainment, sport, tourism and culture

The marinas, in the United States of America, generate, on average, USD 3,580 million, between 2009 and 2018. Since 2010 US marinas have been increasing their revenues and are continuing to grow in coming years.

Figure 50 Marina Revenue in the United States of America from 2011 to 2023 (million USD)



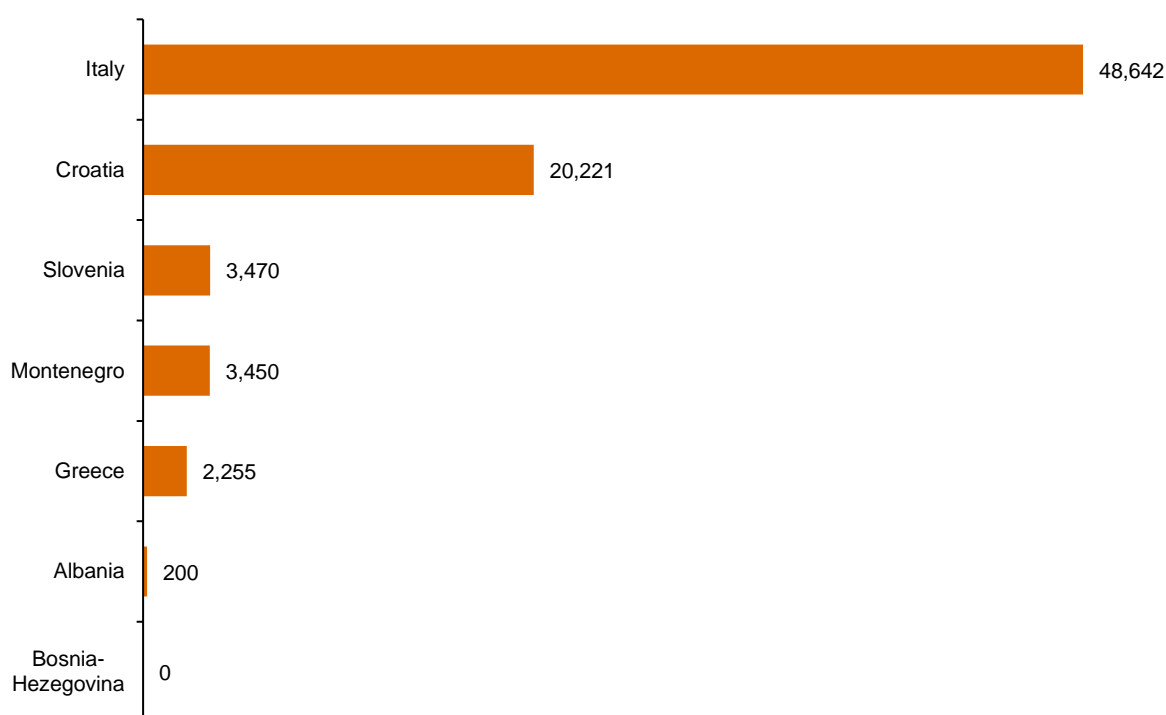
a – forecast
Source: Statista 2019 (Website)



Entertainment, sport, tourism and culture

In Europe, there are more than 10,000 marinas. The main marinas in Europe are located in Sweden, Finland, United Kingdom, Holland, Germany, France, Spain, Italy and Croatia.

Figure 51 Moorings in the Adriatic Sea, in 2017



Source: Statista 2018 (Website)



Entertainment, sport, tourism and culture

The Yacht Harbor Association is the entity that, through an audit of the conditions of the facilities and services provided, conducts an assessment of marinas around the world. The "Golden Anchor" award, with the United Kingdom being the country with the highest number of awards, followed by Turkey and Australia.

Table 60 Main countries with marinas with five anchors of gold, 2019

Country	No. of marinas
United Kingdom	40
Turkey	10
Australia	9
Portugal	5
Netherlands	5
United Arab Emirates	4
Spain	3
USA	2
Italy	2
Ireland	2
Singapore	2
Croatia	2
Thailand	1
China	1
Cyprus	1
Mexico	1
Oman	1
Morocco	1
Saint Lucia	1
France	1
Belgium	1

Source: Yacht Harbour Association, July 2019

Table 61 Main countries with marinas with four anchors of gold, 2019

Country	Nº of marinas
United Kingdom	20
France	5
Australia	2
Belgium	2
Italy	1
Taiwan	1

Source: Yacht Harbour Association, July 2019

Table 62 Important Marinas Globally, 2016

City	Country
Tivat	Montenegro
Barcelona	Spain
Valletta	Malta
Limassol	Cyprus
Bodrum	Turkey
Castellammare di Stabia	Italy
St. Kitts	Caribbean
Split	Croatia
Loano	Italy

Source: Technavio - Global Luxury Yacht Market, 2016



Entertainment, sport, tourism and culture

Europe is the most medallist continent in canoeing, with Germany leading the world top with 32 medals won.

Table 63 Top 15 countries with gold, silver and bronze medals in canoeing (sum of last four Olympic Games)

Country	Medals	Athens 2004	Beijing 2008	London 2012	Rio 2016	Total
Germany	Gold	4	3	3	4	32
	Silver	4	2	2	2	
	Bronze	1	3	3	1	
Hungary	Gold	3	2	3	3	19
	Silver	1	1	2	0	
	Bronze	2	1	1	0	
United Kingdom	Gold	0	1	2	2	14
	Silver	1	1	1	2	
	Bronze	2	1	1	0	
Slovakia	Gold	2	3	0	1	13
	Silver	1	1	0	2	
	Bronze	1	0	2	0	
Spain	Gold	1	1	0	3	12
	Silver	1	2	2	0	
	Bronze	0	0	1	1	
Australia	Gold	0	1	1	0	11
	Silver	2	1	1	0	
	Bronze	0	3	0	2	
Russia	Gold	0	1	1	0	10
	Silver	1	1	0	0	
	Bronze	2	1	2	1	
France	Gold	2	0	2	1	10
	Silver	0	1	0	1	
	Bronze	1	1	0	1	
Canada	Gold	1	0	0	0	8
	Silver	0	1	1	0	
	Bronze	2	1	2	0	
Belarus	Gold	0	2	0	0	8
	Silver	0	0	2	0	
	Bronze	1	1	1	1	
Ukraine	Gold	0	1	1	1	8
	Silver	0	0	2	0	
	Bronze	1	1	0	1	
Czech Republic	Gold	0	0	0	0	7
	Silver	0	1	1	1	
	Bronze	1	0	1	2	
Italy	Gold	0	0	1	0	5
	Silver	2	1	0	0	
	Bronze	0	1	0	0	
Poland	Gold	0	0	0	0	5
	Silver	0	1	0	1	
	Bronze	1	0	1	1	
Norway	Gold	1	0	1	0	4
	Silver	0	1	0	0	
	Bronze	1	0	0	0	

Source: Table of own elaboration based on the portal of the Olympic Games.



Entertainment, sport, tourism and culture

In sailing, although the European countries, led by the United Kingdom with 19 medals, remain well classified, Australia appears in the second place in the ranking with 11 medals.

Table 64 Top 15 countries with gold, silver and bronze medals in sailing (sum of last four Olympic Games)

Country	Medals	Athens 2004	Beijing 2008	London 2012	Rio 2016	Total
United Kingdom	Gold	2	4	1	2	19
	Silver	1	1	4	1	
	Bronze	2	1	0	0	
Australia	Gold	0	2	3	1	11
	Silver	0	1	1	3	
	Bronze	0	0	0	0	
France	Gold	1	0	0	1	9
	Silver	0	1	0	0	
	Bronze	1	2	1	2	
Spain	Gold	1	1	2	0	7
	Silver	2	1	0	0	
	Bronze	0	0	0	0	
Netherlands	Gold	0	0	1	2	7
	Silver	0	2	1	0	
	Bronze	0	0	1	0	
Denmark	Gold	0	1	0	0	7
	Silver	0	0	1	0	
	Bronze	2	0	1	2	
New Zealand	Gold	0	1	1	1	7
	Silver	0	0	1	2	
	Bronze	0	0	0	1	
Brazil	Gold	2	0	0	1	6
	Silver	0	1	0	0	
	Bronze	0	1	1	0	
USA	Gold	1	1	0	0	5
	Silver	1	1	0	0	
	Bronze	0	0	0	1	
China	Gold	0	1	1	0	5
	Silver	1	0	0	1	
	Bronze	0	1	0	0	
Sweden	Gold	0	0	1	0	4
	Silver	0	0	0	0	
	Bronze	1	1	1	0	
Greece	Gold	1	0	0	0	4
	Silver	1	0	0	0	
	Bronze	0	1	0	1	
Argentina	Gold	0	0	0	1	4
	Silver	0	0	0	0	
	Bronze	1	1	1	0	
Croatia	Gold	0	0	0	1	2
	Silver	0	0	0	1	
	Bronze	0	0	0	0	
Poland	Gold	0	0	0	0	3
	Silver	0	0	0	0	
	Bronze	1	0	2	0	

Source: Table of own elaboration based on the portal of the Olympic Games.



Ranking
included in the map
of the economy of
the sea.



Entertainment, sport, tourism and culture

In the rowing, the UK leads the world top with 24 medals, soon followed by Australia (15) and New Zealand and Germany (12 each).

Table 65 Top 15 countries with gold, silver and bronze medals in rowing (four of the sum last Olympic Games)

Country	Medals	Athens 2004	Beijing 2008	London 2012	Rio 2016	Total
United Kingdom	Gold	1	2	4	3	24
	Silver	2	2	2	2	
	Bronze	1	2	3	0	
Australia	Gold	1	2	0	1	15
	Silver	1	1	3	2	
	Bronze	2	0	2	0	
New Zealand	Gold	1	1	3	2	12
	Silver	0	0	0	1	
	Bronze	0	2	2	0	
Germany	Gold	2	0	2	2	12
	Silver	2	1	1	1	
	Bronze	0	1	0	0	
USA	Gold	1	1	1	1	10
	Silver	1	1	0	1	
	Bronze	0	1	2	0	
Netherlands	Gold	0	1	0	1	9
	Silver	1	1	0	1	
	Bronze	2	0	1	1	
Canada	Gold	0	1	0	0	8
	Silver	1	1	2	1	
	Bronze	0	2	0	0	
Denmark	Gold	1	1	1	0	8
	Silver	0	0	1	1	
	Bronze	0	1	1	1	
France	Gold	1	0	0	1	7
	Silver	1	0	1	0	
	Bronze	0	2	0	1	
Italy	Gold	0	0	0	0	7
	Silver	0	1	1	0	
	Bronze	3	0	0	2	
Romania	Gold	3	1	0	0	6
	Silver	0	0	0	0	
	Bronze	0	1	0	1	
Poland	Gold	1	1	0	1	6
	Silver	0	1	0	0	
	Bronze	0	0	1	1	
Czech Republic	Gold	0	0	1	0	5
	Silver	1	1	1	0	
	Bronze	0	0	0	1	
China	Gold	0	1	0	0	5
	Silver	0	1	1	0	
	Bronze	0	0	0	2	
Belarus	Gold	0	0	0	0	4
	Silver	1	0	0	0	
	Bronze	1	2	0	0	

Source: Table of own elaboration based on the portal of the Olympic Games.



Entertainment, sport, tourism and culture

In the surf, the United States, Australia and Brazil are the countries with the highest number of podium finishes in the top three.

Table 66 Top countries with first, second and third place in surfing

Country	Rank	2014	2015	2016	2017	2018	2019	Total
USA	First	0	1	1	1	0	0	10
	Second	0	1	1	0	1	1	
	Third	2	0	1	0	0	0	
Australia	First	1	0	1	1	1	1	14
	Second	2	1	0	1	1	0	
	Third	0	1	0	2	0	1	
Brazil	First	1	1	0	0	1	0	8
	Second	0	0	0	1	0	0	
	Third	0	1	1	0	1	1	
South Africa	First	0	0	0	0	0	0	1
	Second	0	0	1	0	0	0	
	Third	0	0	0	0	0	0	

Note: It includes male and female championships.

Source: World Surf League

New uses of the sea





Telecommunications

Indonesia is the country with the higher number of submarine cable landing points (12%), followed by the United States of America (11%).

Table 67 Countries with submarine cable connections (by number of landing points)

Country	Number	Country	Number	Country	Number	Country	Number
Indonesia	125	Maldives	11	Mauritius	5	Belgium	3
United States	117	Cape Verde	10	Panama	5	Belize	3
United Kingdom	88	Ireland	10	Somalia	5	Cameroon	3
Norway	34	Netherlands	9	United Arab Emirates	5	Cayman Islands	3
Denmark	30	Canada	8	Algeria	4	Cuba	3
Philippines	30	Mexico	8	Comoros	4	Estonia	3
Japan	22	Oman	8	Cyprus	4	Faeroe Islands	3
Spain	22	Finland	7	Dominican Republic	4	Federated States of Micronesia	3
Bahamas	19	Iran	7	Greece	4	Grenada	3
Sweden	19	Jamaica	7	Guernsey	4	Haiti	3
Brazil	17	Saint Vincent and the Grenadines	7	Iceland	4	Honduras	3
French Polynesia	17	Singapore	7	Lebanon	4	Jersey	3
Australia	16	South Africa	7	Madagascar	4	Myanmar	3
China	16	Virgin Islands (U.S.)	7	New Caledonia	4	Nigeria	3
Papua New Guinea	16	Colombia	6	Peru	4	Réunion	3
Portugal	15	Egypt	6	Qatar	4	Saint Martin	3
Venezuela	15	Germany	6	South Korea	3	Saudi Arabia	3
Chile	14	Guadeloupe	6	Solomon Islands	4	Sint Eustatius and Saba	3
India	14	Malta	6	Sri Lanka	4	Vietnam	3
Italy	14	Northern Mariana Islands	6	Thailand	4	Yemen	3
Libya	14	Taiwan	6	Tonga	4	Aruba	2
Malaysia	14	Trinidad and Tobago	6	Turkey	4	Ascension and Tristan da Cunha	2
France	13	Equatorial Guinea	5	Angola	3	Bangladesh	2
New Zealand	13	Greenland	5	Argentina	3	Barbados	2
Russia	13	Isle of Man	5	Bahrain	3	Bermuda	2
						Congo	1

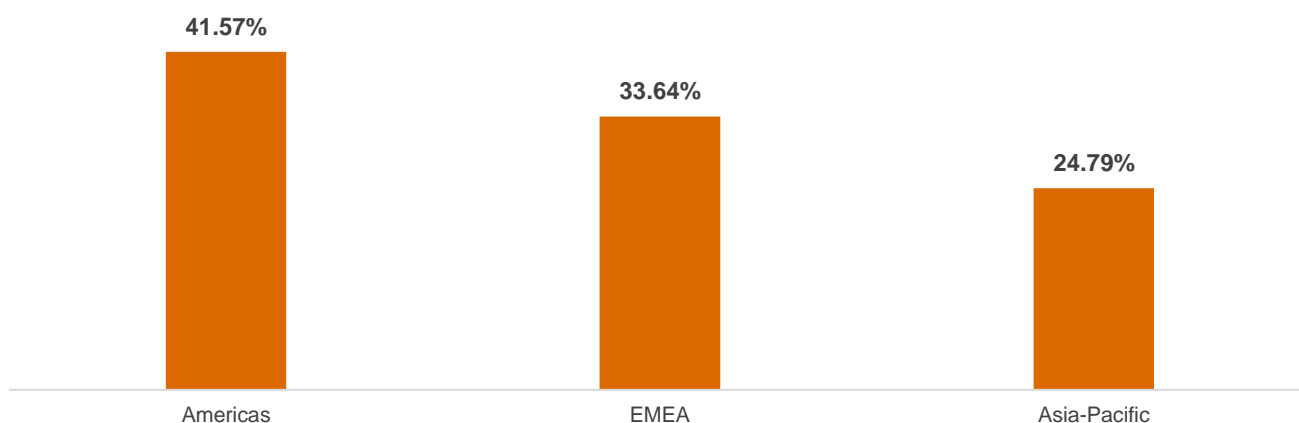
Source: Submarine Cable Map



Blue biotechnology

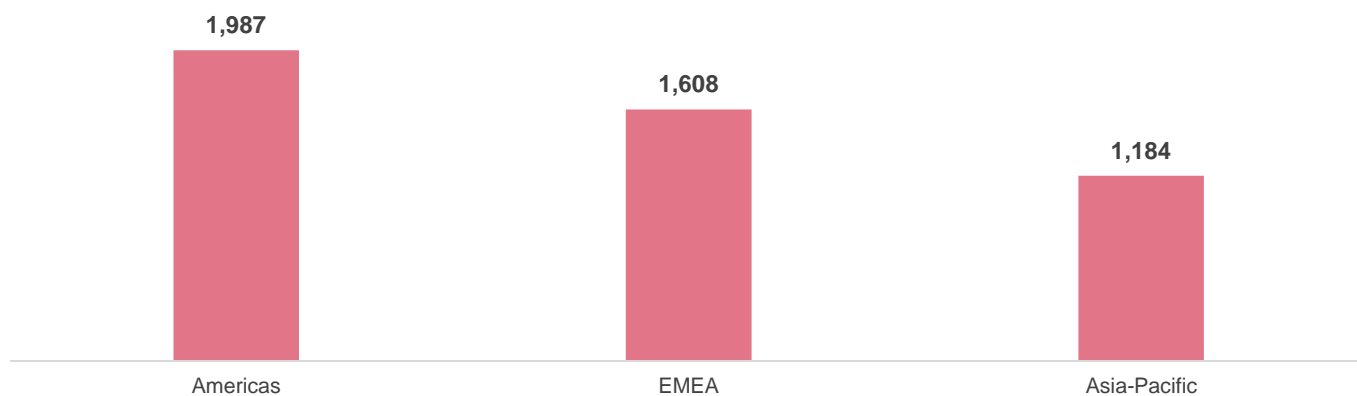
Americas are the region with the major market share in blue biotechnology, with more than 40% of the global market.

Figure 52 Blue biotechnology market share, by region (2018)



Source: Global Blue Biotechnology Market, Technavio

Figure 53 Blue biotechnology market value, by region (in millions, 2018)



Source: Global Blue Biotechnology Market, Technavio



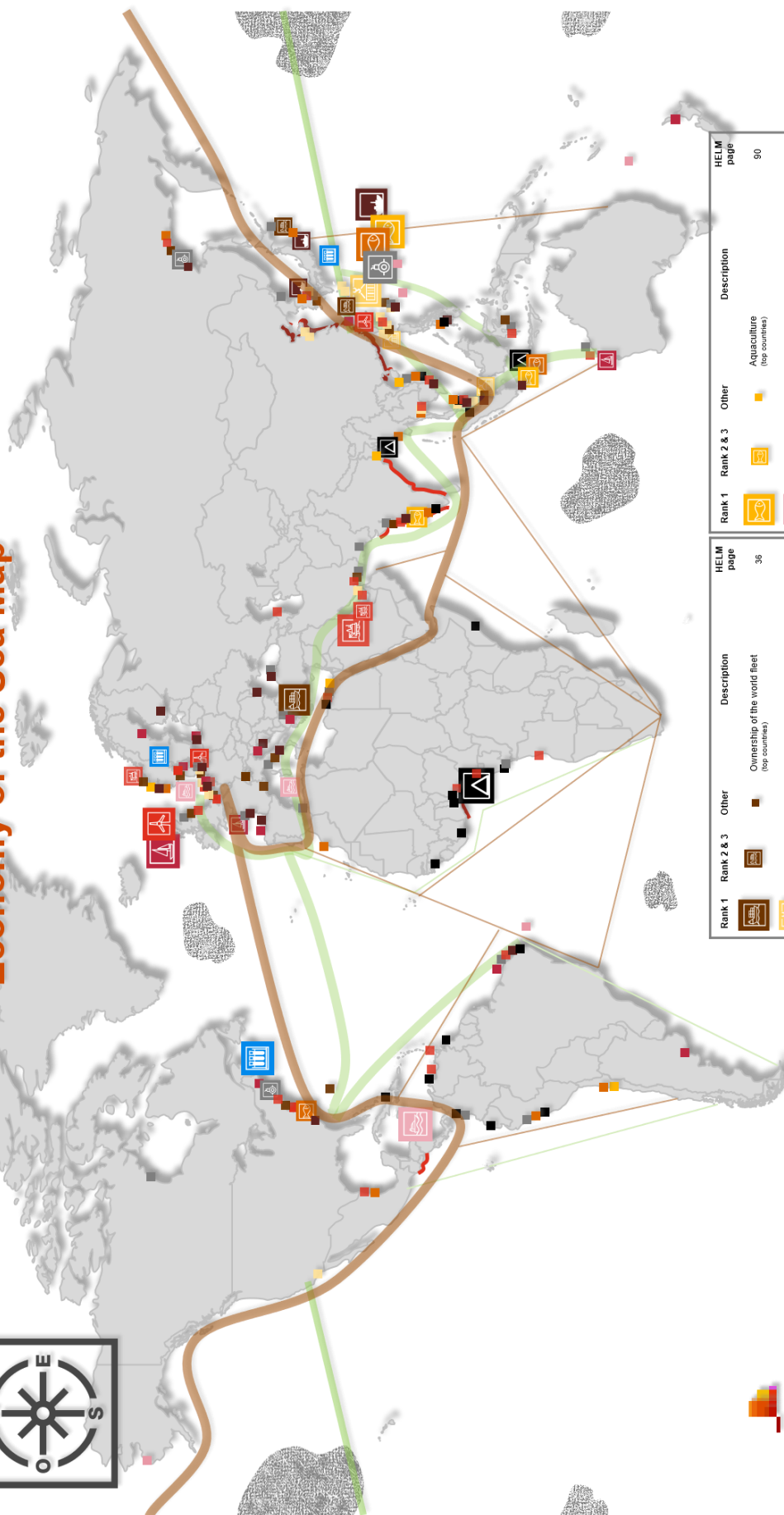
Ranking included in the economy of the sea map.

Map of the Economy of the Sea





Economy of the Sea Map



The economy of the sea is an integrated approach to sea activities with the aim to promote growth and development in a sustainable way

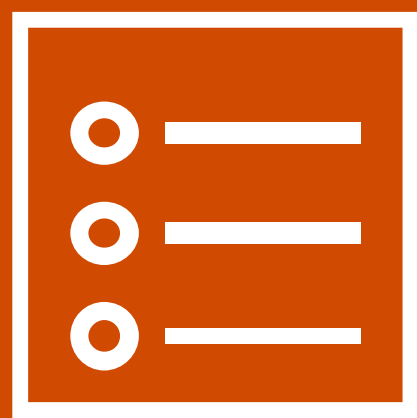
The map is made by overlapping different rankings of countries by industry on a map of the world.
Circumnavigation: HELM – PwC Economy of the Sea Barometer (World)
Edition n°5 - January 2020

Please see PwC social responsibility and thought leadership projects about the economy of the sea in:
<http://www.pwc.pt/en/issues/economy-of-the-sea.html>

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Rank 1	Rank 2 & 3	Other	Description	HELM page
			Aquaculture (top countries)	90
			Cruises (top markets)	101
			Olympic medals in sailing (top countries)	115
			Blue biotechnology market share	121
			Commercial shipping trading track with the highest traffic	30
			Maximum pollution originated on land	81
			Main submarine cable connections	120
			Plastic accumulation zones	81
			Ownership of the world fleet (top countries)	36
			Top container terminals	45
			Shipbuilding completions (Top countries)	60
			Offshore oil & gas production (top countries)	69
			Offshore wind capacity (top countries)	70
			Aircraft Carriers + Frigates + Destroyers + Corvettes + Submarines (top countries)	76
			Pirate attacks locations	77
			Marine capture fisheries (top countries)	85

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Index of Acronyms

GDP - Gross Domestic Product
EEZ - Exclusive Economic Zones
km - Kilometre
Kg - Kilogram
kbbbl/d - Kilobarrel per day
FEU - Forty-foot Equivalent Unit
TEU - Twenty-foot Equivalent Unit
DWT - Deadweight Tonnage
FPSO - Floating Production. Storage and Offloading
BDI - Baltic Exchange Dry Index
GT - Gross Tonnage
CGT - Compensated Gross Tonnage
FAO - Food and Agriculture Organization
LNG - Liquefied Natural Gas
LPG - Liquefied Petroleum Gas
NMMA – National Marine Manufacturers Association
UHNWIs – Ultra-high net-worth individuals



Environmental preservation gives value to the sea!



Contribute to a culture of safety at sea! In leisure or work. Follow the safety rules for lives at sea. Go to sea and return safely.

Contacts

Miguel Marques

Economy of the Sea Partner
miguel.marques@pwc.com

Lisboa

Palácio Sottomayor
Avenida Fontes Pereira de Melo n.º16
1050 – 121 Lisboa
Tel.: 213 599 000
Fax: 213 599 999

Oporto

o'Porto
Bessa Leite Complex
Rua António Bessa Leite, 1430 – 5º
4150 – 074 Porto
Tel.: 225 433 000
Fax: 225 433 499

Praia

Edifício BAI Center, Piso 2 Direito
Avenida Cidade de Lisboa
C.P. 303 Cidade da Praia
República de Cabo Verde
Tel: (+238) 261 5934
Fax: (+238) 261 6028

Luanda

Edifício Presidente
Largo 17 de Setembro n.º 3
1º andar – Sala 137
Luanda – República de Angola
Tel: (+244) 227 286 109
(+244) 227 286 111
Fax: (+244) 222 311 213



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