ISSN 2184-4534

INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL
1935-2025

DIISTAQUE

PRESS RELEASE

November. 13th, 2025
OCEAN SATELLITE ACCOUNT
2020-2023

OCEAN ECONOMY RECOVERED AFTER THE PANDEMIC AND ACCOUNTED FOR 4.3% OF NATIONAL GVA IN 2023 AND 3.6% OF NATIONAL EMPLOYMENT IN 2022

The Ocean Economy (OE) GVA represented 3.3% and 3.5% of the national economy total GVA, in 2020-2021, a two-year period strongly marked by the effects of the COVID-19 pandemic. In 2022 and 2023, the relative importance of the OE in the national GVA increased to 4.2% and 4.3%, respectively, essentially reflecting the greater dynamism of tourism-related activities. During the period under analysis (2020-2023), the GVA of the OE grew above the national economy GVA.

The relative importance of OE employment, measured in Full-Time Equivalent (FTE), in total national employment amounted to 3.5% in the 2020-2021 biennium, and 3.6% in 2022.

The Autonomous Region of the Azores (RAA) and the Autonomous Region of Madeira (RAM), together, generated 9.9%, 11.7% and 12.1% of the total OE GVA, in 2020, 2021 and 2022, respectively, which represents 5.7, 7.3 and 7.5 percentage points more than the weight that these regions have globally in the national GVA.

In 2022, the Recreation, sports, culture and tourism group became dominant in the GVA structure of both Autonomous Regions, surpassing the relative importance of the Fisheries, aquaculture, processing, wholesale and retail of its products group in the RAA.

In 2022, Portugal occupied the sixth and eighth positions in the rankings of European countries, in terms of the relative importance of GVA and employment in the national economy.

Anticipating the National Day of the Sea (November 16th), Statistics Portugal discloses the results of the third edition of the Ocean Satellite Account (OSA) for the period 2020-2023, which are consistent with the Portuguese National Accounts (benchmark year 2021). The data presented for the years 2020 to 2022 are final, while the data for 2023 are provisional.

This edition of the OSA was developed by Statistics Portugal in close coordination with the Statistics Azores (SREA) and the Regional Directorate of Statistics of Madeira (DREM), with the collaboration of the Directorate-General for Maritime Policy (DGPM), particularly in defining the universe of the account.

The press release is organized as follows:

1. Main economic indicators for the country;
2. Main indicators for the Autonomous Regions (Azores and Madeira);
3. International comparison with other Member-States of European Union;

4. Comparison of the main aggregates of OSA with the previous editions;
5. Methodological notes.

This press release also includes two boxes on the Sustainable Development Goals (SDG) and Air Emissions Accounts for industries 03 – fishing and aquaculture and 50 – water transport.

Tables with additional information are available on Statistics Portugal website.

1. MAIN (NATIONAL) RESULTS

1.1. OCEAN ECONOMY GVA ACCOUNTED FOR 4.3% OF THE NATIONAL ECONOMY GVA IN 2023, GROWING ABOVE THE NATIONAL GVA BETWEEN 2020 AND 2023.

The Ocean Economy (OE) accounted for 4.3% of the national GVA in 2023 and 3.6% of national employment in 2022.[1]

Between 2020 and 2023, the OE GVA always grew above the GVA of the national economy, while the growth rate of OE employment was only higher than that of the national economy in 2022.

In 2021 and 2022, OE compensation of the employees increased by 8.1% and 15.2%, respectively, compared to previous years, above that observed in the national economy (7.1% and 9.5%, respectively).

OE compensation of the employees represented 4.0% of national compensation of the employees in 2022. The average compensation of the employees was slightly higher than that observed in the national economy (between 0.4% in 2020 and 2.3% in 2022). In 2020, the ratio between GVA and employment was lower than that recorded in the national economy (approximately 96%), becoming higher in 2021 and 2022 (101.3% and 116.7%, respectively).

[1] The provisional value of the 2023 GVA was estimated from the projection of the OSA (definitive) results for 2022, without an exhaustive analysis of OSA reference population, but contemplating a more detailed study of the most relevant entities, as well as detailed information from the definitive results of National Accounts (NA), for 2023. Information on external trade for 2023 was also analysed, considering the final data from the NA.
It is not possible to present estimates for employment for 2023, due to the lower level of detail/disaggregation of the OSA information in that year.

Table 1

MAIN RESULTS OF THE OSA, WITH REFERENCE TO THE TOTAL ECONOMY

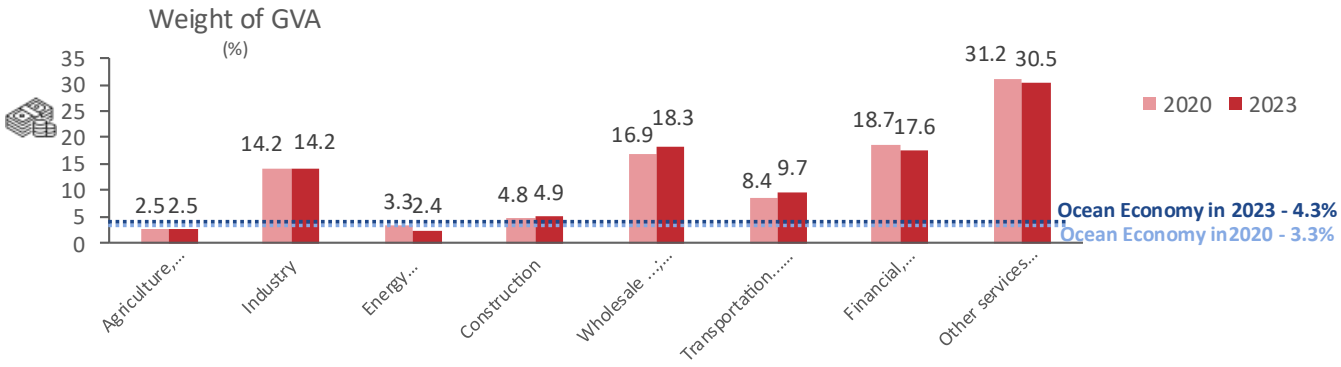
Indicators	Unit	Levels	Results				Change rate. (%)			Weight (%) of OSA in NA			
			2020	2021	2022	2023Po	2021	2022	2023Po	2020	2021	2022	2023Po
GVA	10^6 euros	OSA	5,863	6,615	8,905	10,219	12.8	34.6	14.8	3.3	3.5	4.2	4.3
		NA	175,104	187,362	211,028	235,589	7.0	12.6	11.6				
Employment (FTE)	No	OSA	162,482	166,531	182,460	x	2.5	9.6	//	3.5	3.5	3.6	//
		NA	4,663,482	4,779,270	5,052,060	//	2.5	5.7	//				
GVA/FTE	10^3 euros	OSA	36	40	49	x	10.0	22.9	//	96.3	101.3	116.7	//
		NA	38	39	42	//	4.5	6.6	//				
Compensation of employees	10^6 euros	OSA	3,616	3,909	4,503	x	8.1	15.2	//	3.7	3.8	4.0	//
		NA	96,895	103,756	113,604	//	7.1	9.5	//				
Employees (FTE)	No	OSA	151,828	154,833	171,197	x	2.0	10.6	//	3.7	3.7	3.9	//
		NA	4,093,180	4,191,963	4,420,434	//	2.4	5.5	//				
Average compensation of employees	10^3 euros	OSA	24	25	26	x	5.9	4.4	//	100.4	101.6	102.3	//
		NA	24	25	26	//	4.6	3.6	//				
Compensation of employees/GVA	%	OSA	62	59	51	x	-4.2	-14.4	//	111.6	106.7	94.1	//
		NA	55	55	54	//	0.2	-2.9	//				
Private consumption (households)	10^6 euros	OSA	6,547	7,527	9,707	x	15.0	29.0	//	5.2	5.6	6.4	//
		NA	124,709	133,603	151,318	//	7.1	13.3	//				
Public consumption	10^6 euros	OSA	809	711	745	x	-12.1	4.8	//	2.1	1.8	1.8	//
		NA	37,962	40,124	42,456	//	5.7	5.8	//				
GFCF (products)	10^6 euros	OSA	635	719	764	x	13.3	6.2	//	1.6	1.6	1.5	//
		NA	39,194	44,388	50,190	//	13.3	13.1	//				
Exports	10^6 euros	OSA	2,551	2,948	5,111	5,940	15.6	73.4	16.2	3.4	3.3	4.2	4.7
		NA	74,897	89,950	120,714	127,486	20.1	34.2	5.6				
Imports	10^6 euros	OSA	2,297	2,598	3,515	3,550	13.1	35.3	1.0	2.9	2.7	2.8	2.9
		NA	78,911	95,961	126,571	124,309	21.6	31.9	-1.8				
External balance	10^6 euros	OSA	254	350	1,597	2,389	//	//	//	//	//	//	//
		NA	-4,014	-6,011	-5,857	3,177	//	//	//				

In 2023, the relative importance of OE GVA in the national economy (4.3%) was higher than in industries such as agriculture, forestry and fishing (2.5%) and energy, water supply and sewerage (2.4%), approaching that of construction (4.9%).

It was observed that, in 2020, OE was strongly affected by the effects of the COVID-19 pandemic: the relative importance of the OE GVA in the national economy then accounted for 3.3% of the total GVA, identical to that of energy, water supply and sewerage, surpassing only the agriculture, forestry and fishing GVA (2.5%).

Picture 1

DISTRIBUTION OF NATIONAL GVA BY INDUSTRIES *VS* OCEAN ECONOMY GVA (2020-2023)



1.2. CHARACTERISTIC ACTIVITIES ACCOUNTED FOR MORE THAN HALF OF THE TOTAL OCEAN ECONOMY GVA IN THE THREE-YEAR PERIOD 2020-2022, ALTHOUGH THEY REGISTERED A DECREASING TREND (IN RELATIVE IMPORTANCE)

Characteristic activities, such as fishing and aquaculture, salt production, shipbuilding, port activity, maritime transport, coastal works, nautical activities, etc., accounted for more than half of the total GVA of the OE, although they registered a downward trend in its relative importance (from 59.2% in 2020 to 50.8% in 2022).

Characteristic activities accounted for more than half of OE employment in 2020 and 2021 (50.4% and 52.4%, respectively), slightly reducing their relative importance in 2022 (49.9%).

Cross-cutting activities, such as maritime equipment and services, evidenced a decreasing weight in the OE total GVA structure (from 15.1% in 2020 to 12.7% in 2022). Their contribution share to employment in the OE also decreased from 12.7%, in 2020, to 12.4% in 2022.

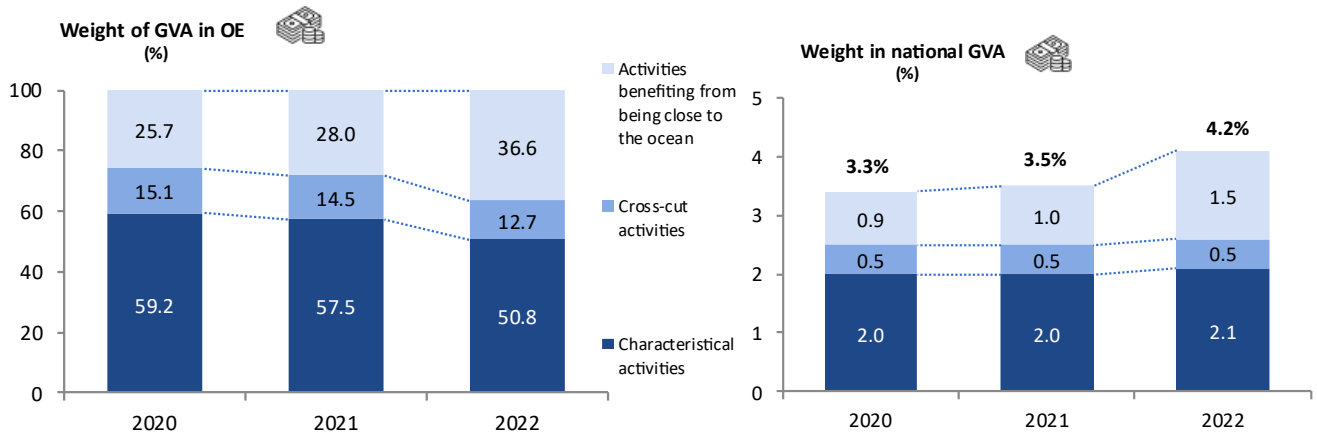
Activities benefiting from being close to the ocean, that is, activities associated with coastal tourism, evidenced a recovery, facing the pandemic period since 2022, representing 36.6% of the OE GVA. In 2020 and 2021, these activities represented less than 30% of the OE GVA.

Their contribution to OE employment increased from 37.0% in 2020 to 37.7% in 2022, showing an opposite trajectory to that observed in characteristic activities.

In the OSA previous edition, activities benefiting from being close to the ocean represented, on average, 40.4% of GVA and 36.2% of employment in the OE, in the respective reference periods (2016-2018 and 2016-2017).

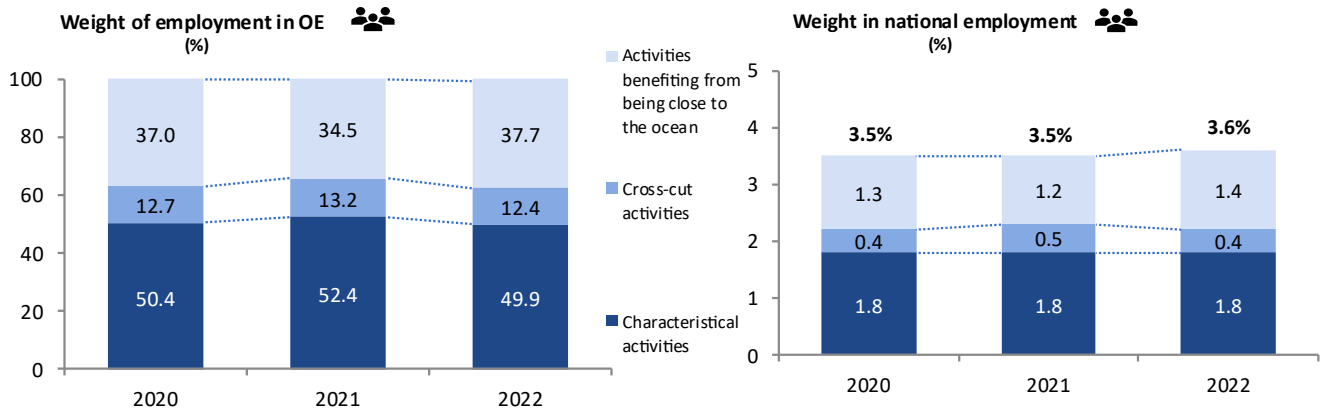
Picture 2

OCEAN ECONOMY GVA, BY OBSERVATION LEVELS (2020-2022)



Picture 3

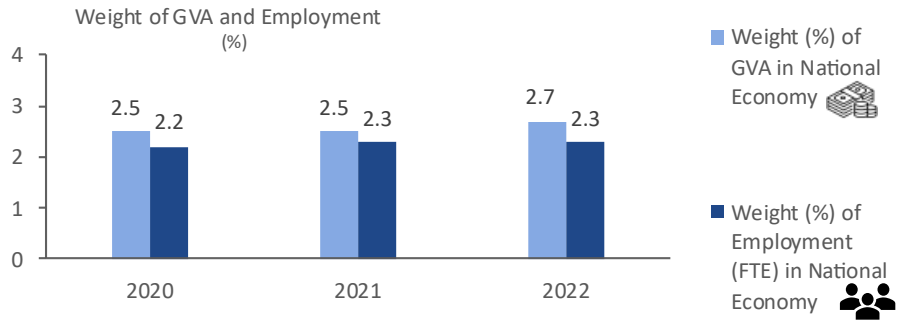
OCEAN ECONOMY EMPLOYMENT, BY OBSERVATION LEVELS (2020-2022)



Excluding activities benefiting from being close to the ocean (coastal tourism), the OE would represent 2.5% of the national GVA, in 2020 and 2021, and 2.7% in 2022. Assuming the same premise, employment in the OE would correspond to 2.2% of national employment in 2020, evolving to 2.3%, in 2021 and 2022.

Picture 4

WEIGHT OF OCEAN ECONOMY GVA AND EMPLOYMENT (FTE) IN NATIONAL ECONOMY, **EXCLUDING ACTIVITIES BENEFITING FROM BEING CLOSE TO THE OCEAN** (2020-2022)



1.3. GROUP 4 – RECREATION, SPORTS, CULTURE AND TOURISM WAS THE MOST RELEVANT IN THE OCEAN ECONOMY GVA STRUCTURE, EXCEPT IN 2020, DESPITE BEING DOMINANT IN EMPLOYMENT

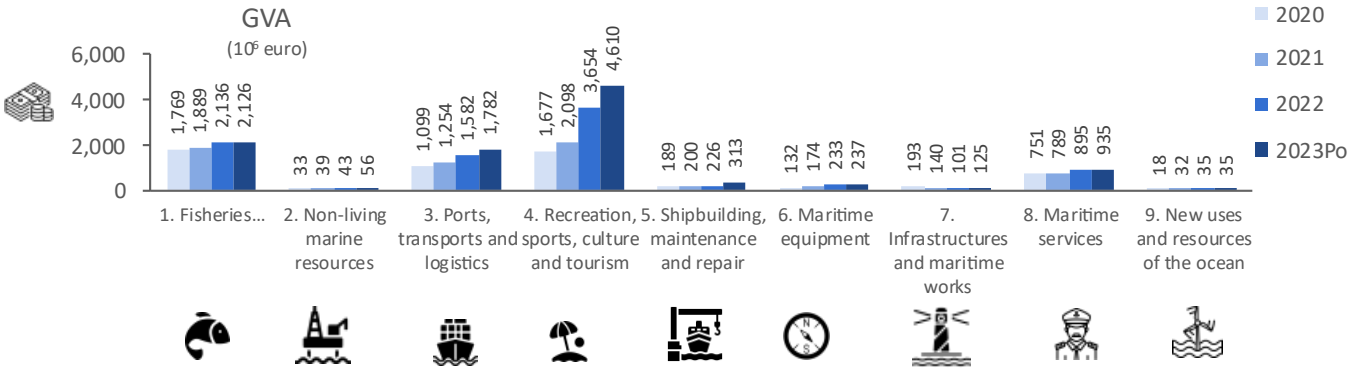
In 2023, group 4 - Recreation, sports, culture and tourism was the most relevant in the OE GVA structure, followed by group 1 - Fisheries, aquaculture, processing, wholesale and retail of its products and groups 3 - Ports, transports and logistics and 8 - Maritime services.

Only in 2020, the first year marked by the pandemic, the primacy of group 4 was not observed: group 1 then accounted for 30.2% of the total OE GVA, while group 4 contributed to 28.6% of the OE GVA.

Between 2020 and 2023, a generalized growth in OE GVA was observed in all groups, except for group 7 – Infrastructure and maritime works. The GVA of group 4 - Recreation, sport, culture and tourism stood out, with an increase of 174.9% between 2020 and 2023, followed by groups 9 - New uses and resources of the sea (91.8%) and 6 – Maritime equipment (79.0%).

Picture 5

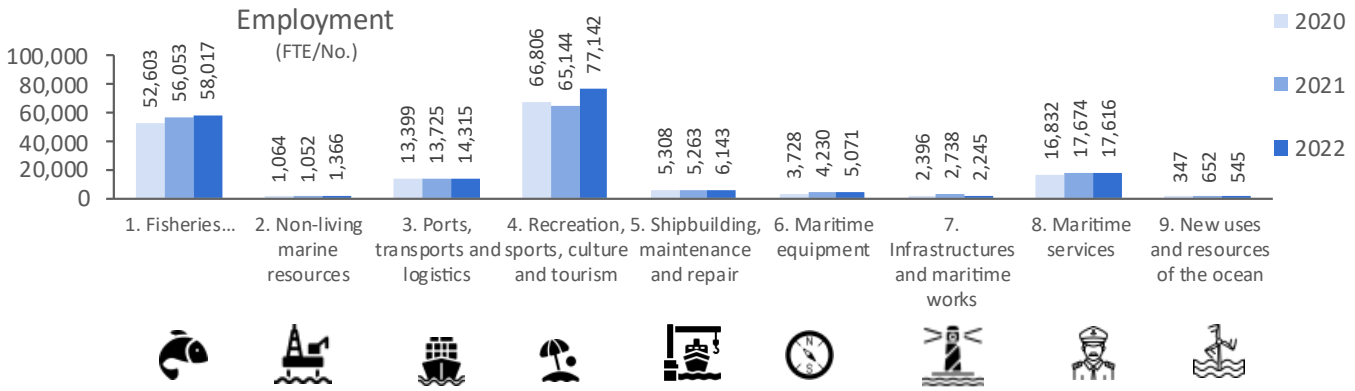
DISTRIBUTION OF THE OCEAN ECONOMY GVA, BY GROUP (2020-2023)



The groups hierarchy in the employment structure was similar to that observed in the GVA structure. In fact, between 2020 and 2022, group 4 - Recreation, sports, culture and tourism concentrated more than 40% of employment (39.1% in 2021), followed by group 1 - Fisheries, aquaculture, processing, wholesale and retail of its products, with more than 30% of total employment in the three-year period under analysis.

Picture 6

DISTRIBUTION OF THE OCEAN ECONOMY EMPLOYMENT, BY GROUP (2020-2023)



In 2020-2022, the following groups stood out in compensation of employees: 4 - Recreation, sports, culture and tourism (more than 30% of the total) and 1 - Fisheries, aquaculture, processing, wholesale and retail of its products (more than 20% of the total), followed by groups 8 – Maritime services and 3 - Ports, transport and logistics (both with more than 10% of the total).

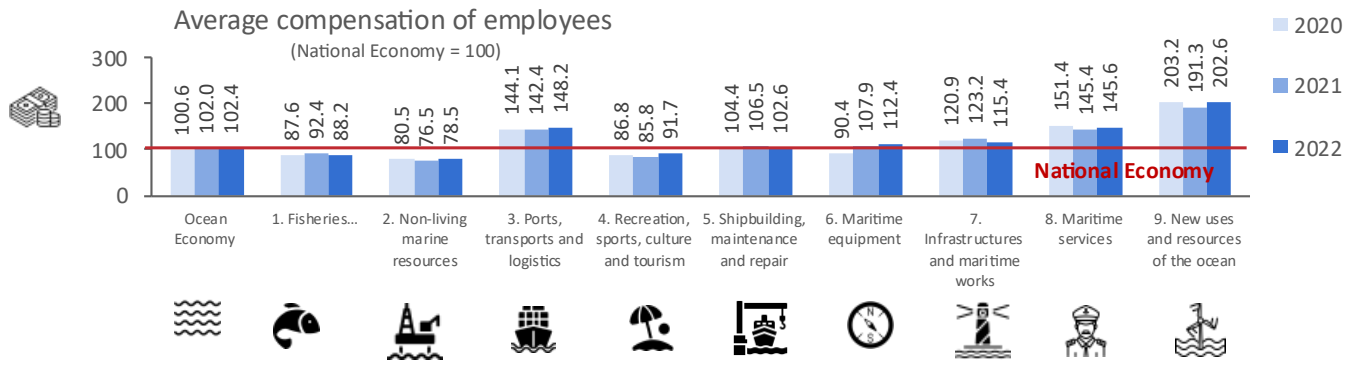
Average compensation of employees showed significant dispersion, with groups 9 - New uses and resources of the sea, 8 - Maritime services and 3 - Ports, transport and logistics registering the highest average compensation of employees.

At the opposite extreme were groups 1 - Fisheries, aquaculture, processing, wholesale and retail of its products, 2 - Non-living marine resources and 4 - Recreation, sport, culture and tourism, with average compensation of employees below the national average.

This dispersion may reflect the heterogeneity of the qualifications of human resources associated with the different groups.

Picture 7

AVERAGE COMPENSATION OF EMPLOYEES BY FTE, BY GROUP (2020-2022)

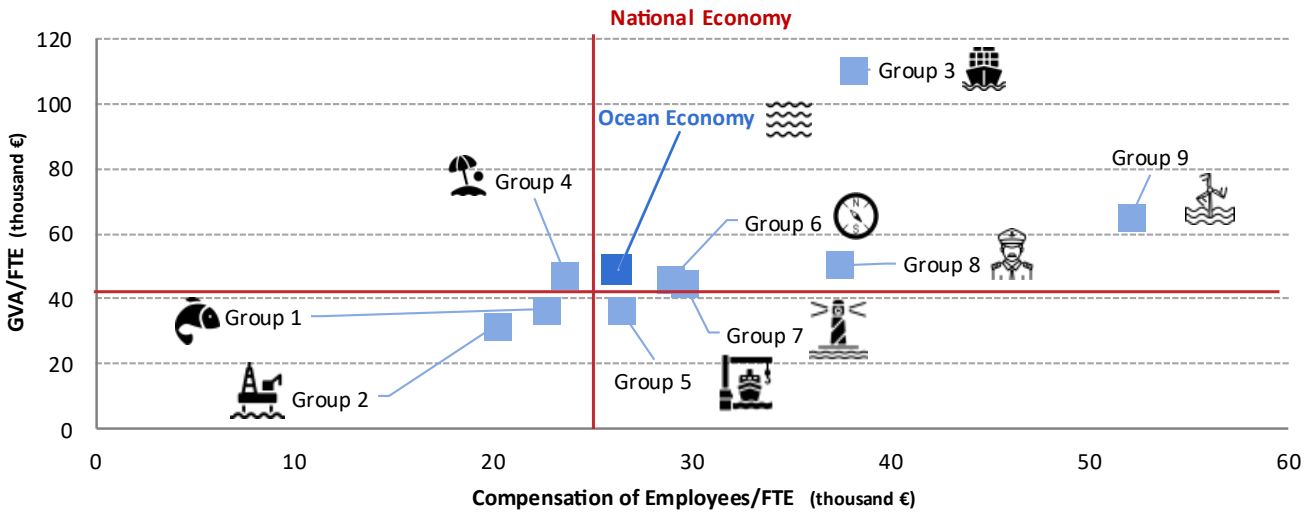


Analysing the distribution of the average compensation of employees by FTE and productivity (GVA/FTE) in the OE, by group, it is observed that not all groups with higher compensation of employees corresponded to those with the highest productivity.

Group 9 – New uses and resources has the highest average compensation of employees, but the ratio GVA/ FTE is lower than that of group 3 – Ports, transport and logistics. This could be explained by the fact that it corresponds, fundamentally, to emerging activities, with highly specialized human resources.

Picture 8

DISTRIBUTION OF THE COMPENSATION OF EMPLOYEES BY FTE AND OF PRODUCTIVITY OF THE OCEAN ECONOMY, BY GROUP (2022)



1.4. EXPORTS FROM THE OCEAN ECONOMY ACCOUNTED FOR 4.7% OF TOTAL EXPORTS, IN 2023

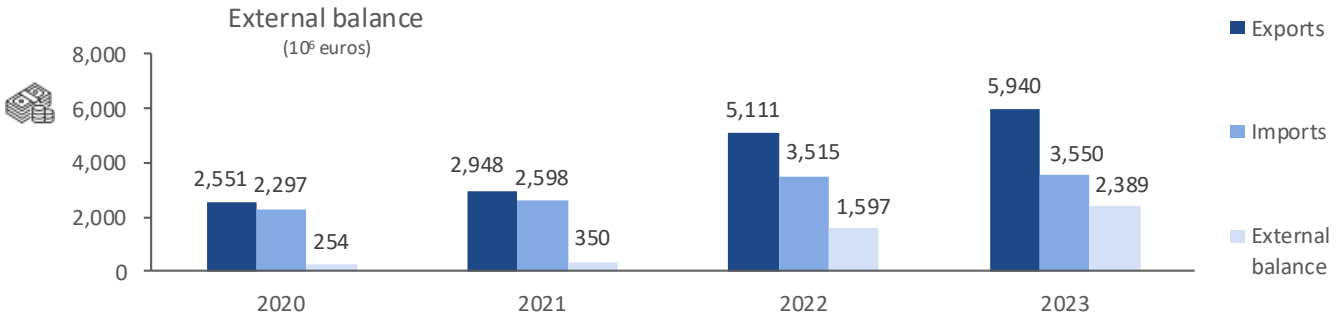
OE products imports accounted for 2.9% of total imports in the national economy, in 2020 and 2023, having increased 54.6% between 2020 and 2023, while total imports (in national economy) grew 57.5%.

Exports of OE products accounted for 3.4% of total exports, in 2020, and 4.7% in 2023, growing 132.8% between 2020 and 2023, at higher rate than national exports, which increased by 70.2%, in the same period.

As a result of the evolution of imports and exports of OE products, the external balance of goods and services (which is positive) increased significantly in 2023, reflecting the dynamism of exports of services associated with tourism.

Picture 9

IMPORTS, EXPORTS AND EXTERNAL BALANCE OF OCEAN ECONOMY PRODUCTS (2020-2023)



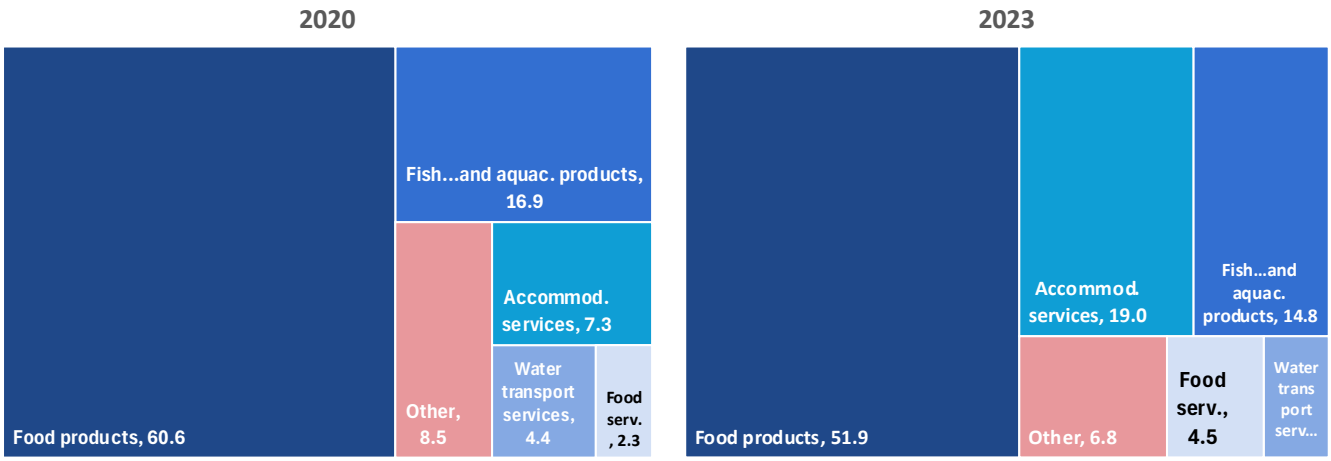
Excluding products associated with tourism (55 – accommodation services; 56 – food and beverage serving services and 79 – travel agency, tour operator and other reservation services and related services), the OE external balance would be negative in the period under analysis: - 423 million euros, in 2020, - 621 million euros, in 2021, - 828 million euros, in 2022 and - 524 million euros, in 2023.

In the imports structure, the most relevant items were food products (processed products, especially fresh, chilled or frozen fish and crustaceans, dried, salted or salted fish; smoked fish and, still, preserves and other fish preparations), followed by fish and other fishing products and aquaculture products and accommodation services, in 2020.

In 2023, there was still a primacy of food products in the import structure (51.9%), but accommodation services assumed a higher relative importance (19.0%) than fish and other fishing products and aquaculture products (14.8%), reflecting the recovery of tourism activity in the post-pandemic period.

Picture 10

STRUCTURE OF OCEAN ECONOMY IMPORTS (2020 AND 2023)



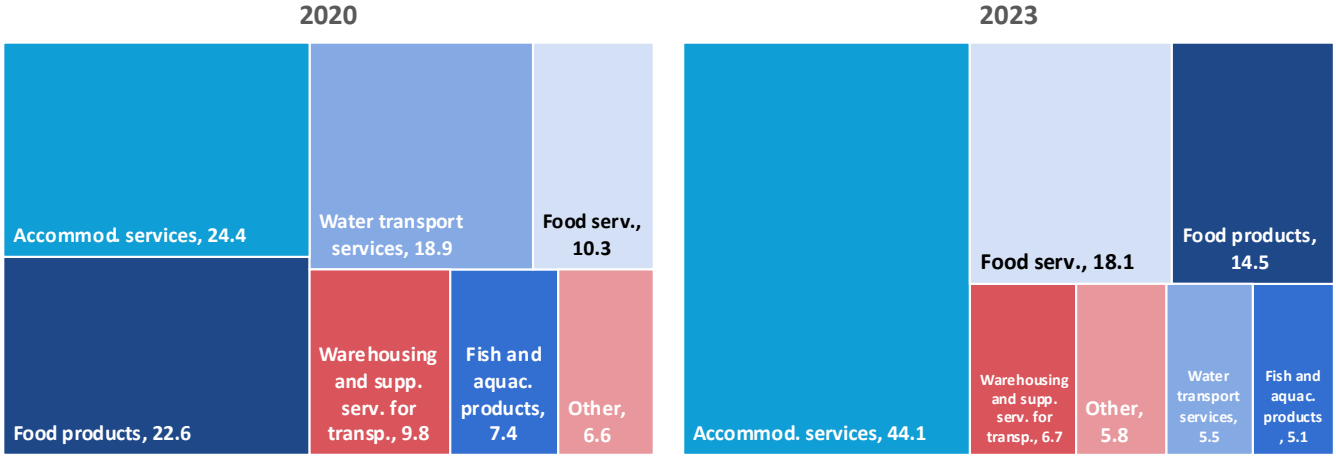
In the exports of OE products, the prevalence of accommodation services stood out, both in 2020 and in 2023: 24.4% of total OE exports, in 2020, and 44.1% in 2023, in line with the recovery of tourism activity.

Food products (22.6%) came in second place, followed by water transport services (18.9%), in 2020.

It is estimated that, in 2023, exports of food and beverage serving services (18.1%) surpassed those of food products (14.5%), following the growth observed in exports of accommodation services.

Picture 11

STRUCTURE OF OCEAN ECONOMY EXPORTS (2020 AND 2023)



1.5. HOUSEHOLD CONSUMPTION OF OCEAN ECONOMY PRODUCTS WAS PRIMARILY FOCUSED ON FOOD PRODUCTS AND FISH AND OTHER FISHING AND AQUACULTURE PRODUCTS, BETWEEN 2020 AND 2022.

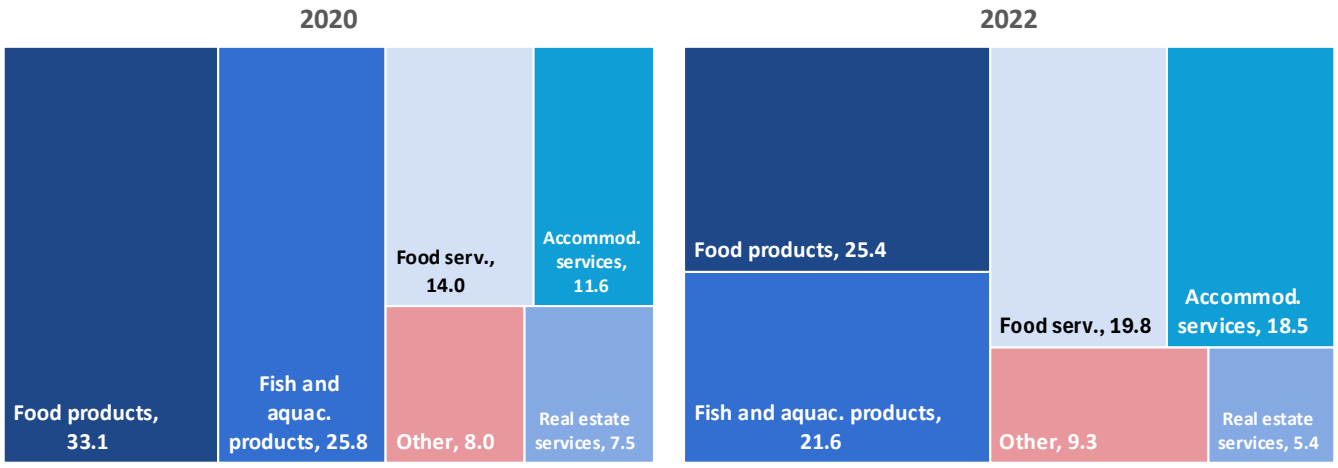
Final consumption expenditure by households on OE products increased by 48.3%, between 2020 and 2022, with total household consumption in the national economy growing 21.3%.

In 2022, household consumption of OE products represented 6.4% of total household final consumption expenditure.

In the three-year period 2020-2022, household expenditure on OE products was primarily concentrated on food products and fish and other fishing products and aquaculture products, which together accounted for 58.9% of household consumption of OE products, in 2020, and 47.0% in 2022. A significant growth in food and beverage serving services and accommodation services stood out, reflecting a gradual recovery in tourism-related activities.

Picture 12

STRUCTURE OF HOUSEHOLDS FINAL CONSUMPTION EXPENDITURE IN OCEAN ECONOMY PRODUCTS (2020 AND 2022)



1.6. OCEAN ECONOMY GROSS FIXED CAPITAL FORMATION ACCOUNTED FOR LESS THAN 2% OF TOTAL NATIONAL GFCF, BETWEEN 2020 AND 2022

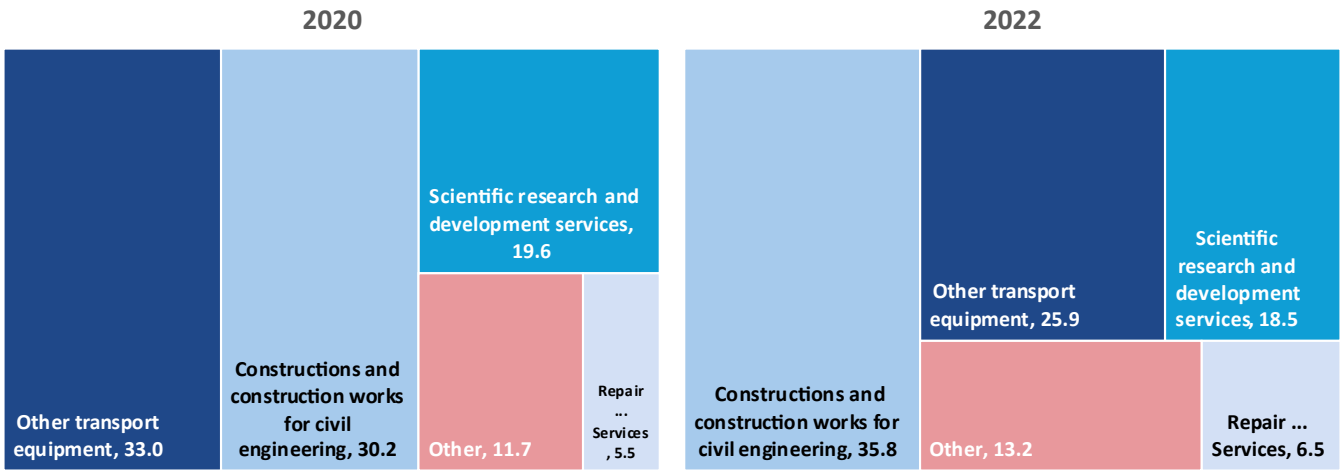
Gross Fixed Capital Formation (GFCF) in the OE represented 1.6% of total GFCF in the national economy, in 2020, and 1.5%, in 2022. It registered an increase of 20.3% between 2020 and 2022, while GFCF grew 28.1% in the national economy, in the same period.

In 2020, the OE more relevant products were other transport equipment (33.0%), constructions and construction works for civil engineering (30.2%) and scientific research and development services (19.6%).

The hierarchy of the most relevant products in OE GFCF changed in 2022, with constructions and construction works for civil engineering (35.8%) surpassing other transport materials (25.9%), followed by scientific research and development services (18.5%).

Picture 13

GROSS FIXED CAPITAL FORMATION (GFCF) IN OCEAN ECONOMY PRODUCTS (2020 AND 2022)



Target 14.a associated to Sustainable Development Goal 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development establishes: "*Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries.*"

In Portugal, target 14.a is monitored by indicator 14.a.1 "Proportion of total research budget allocated to research in the field of marine technology (proxy data)", for which the source of information has been the Ocean Satellite Account (OSA).

Between 2010 and 2022, the proportion of investment in scientific R&D services in marine technology, as a percentage of total investment in intellectual property products, shows a downward trend.

In 2010-2013, the average proportion was 2.2%, falling to 2.1% in 2016-2017, and to 1.8% in 2020-2022, thus showing an evolution in the opposite direction to what is desirable. It should be noted that the average value increased from €103 million/year in 2010-2013 to approximately €134 million/year in 2020-2022.

Table 2

PROPORTION OF R&D SERVICES INVESTMENT IN MARINE TECHNOLOGY ON THE TOTAL INVESTMENT IN INTELLECTUAL PROPERTY PRODUCTS

Indicator	unit	Average value 2010-2013	Average value 2016-2017	Average value 2020-2022
		Base 2011	Base 2016	Base 2021
Industry 72 - Scientific research and development GFCF in the Ocean Satellite Account	10^6 euro	103.0	103.8	134.2
Intellectual property products GFCF in National Accounts	10^6 euro	4,631.3	4,970.7	7,304.4
Ratio	%	**2.2**	**2.1**	**1.8**

Source: Statistics Portugal (Ocean Satellite Account)

AIR EMISSIONS ACCOUNTS (AEA): INDUSTRIES 03 - FISHING AND AQUACULTURE AND 50 - WATER TRANSPORT (INDUSTRIES FULLY CONSIDERED WITHIN THE SCOPE OF THE OCEAN ECONOMY)

Statistics Portugal annually publishes the Air Emissions Accounts (AEA), which include disaggregated information for two industries considered entirely within the scope of the OE: 03 – fishing and aquaculture and 50 – water transport.

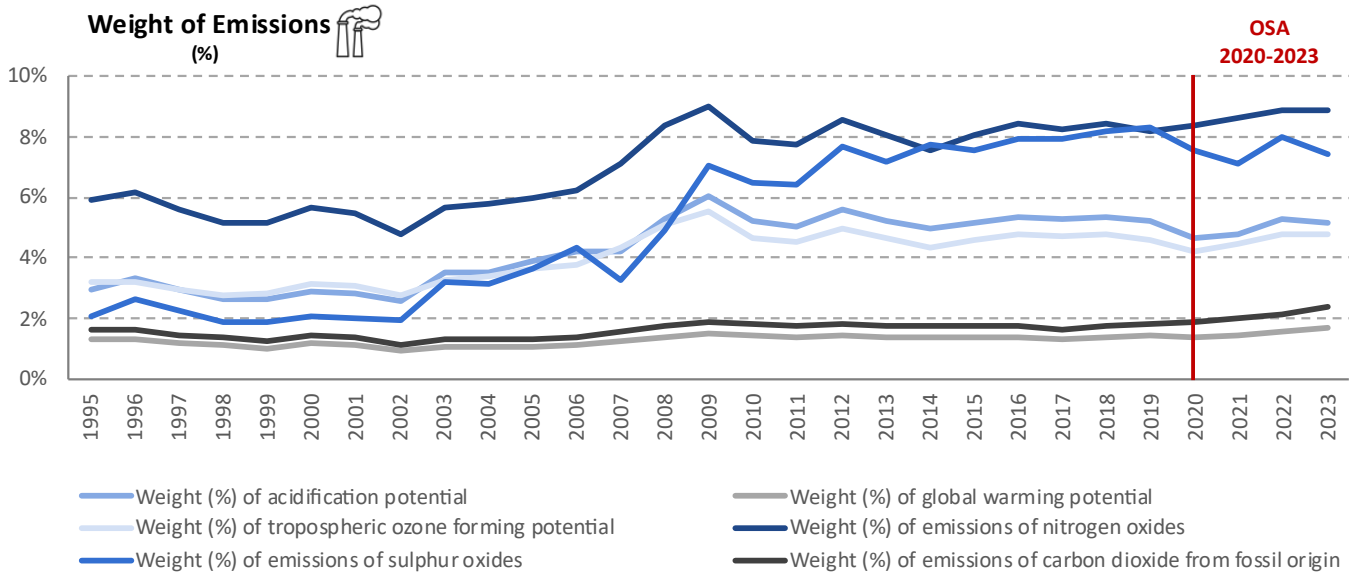
Based on the most recent edition of the AEA (2023), these two industries, in 2022 and 2023, were responsible for:

- 8.9% of the total emissions of nitrogen oxides;
- 8.0% and 7.5% of the total emissions of sulphur oxides;
- 5.3% and 5.2% of the acidification potential;
- 2.1% and 2.4% of the total emissions of carbon dioxide from fossil origin;
- 1.6% and 1.7% of global warming potential;
- 4.8% of the tropospheric ozone forming potential.

In the same years, these industries' GVA accounted for 0.3% of total national GVA.

Picture 14

EVOLUTION OF INDUSTRIES 03 - FISHING AND AQUACULTURE AND 50 - WATER TRANSPORT



Source: Statistics Portugal (Air Emissions Accounts – 2023)

2. MAIN RESULTS – AUTONOMOUS REGIONS

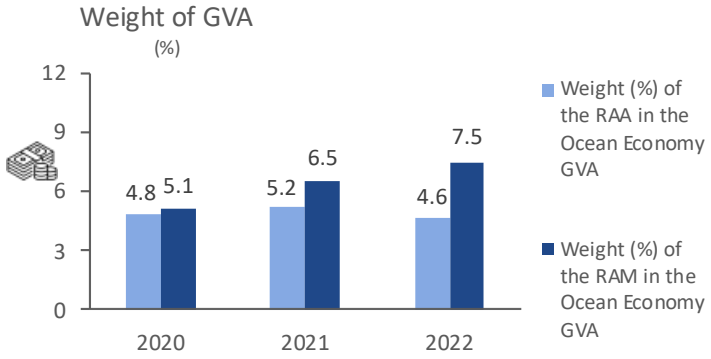
2.1. OCEAN ECONOMY GVA OF THE AUTONOMOUS REGIONS REPRESENTED APPROXIMATELY 12% OF THE TOTAL GVA OF THE NATIONAL OCEAN ECONOMY, IN 2022

The Autonomous Region of the Azores (RAA) and the Autonomous Region of Madeira (RAM), together, accounted for 9.9%, 11.7% and 12.1% of the total GVA of the national OE, in 2020, 2021 and 2022, respectively.

This proportion compares with a lower relative weight of the two regions in the national GVA: 4.2%, 4.4% and 4.6% in 2020, 2021 and 2022, respectively.

Picture 15

WEIGHT OF OCEAN ECONOMY GVA OFTHE AUTONOMOUS REGIONS IN NATIONAL OCEAN ECONOMY (2020-2022)

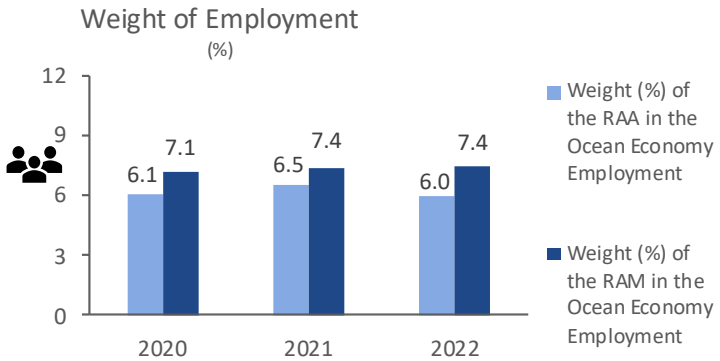


In the respective regional GVA, the OE GVA represented 8.2%, 9.1% and 9.8% in the RAA and 7.6%, 9.7% e 12.1% in the RAM, in 2020, 2021 and 2022, respectively.

In terms of employment, both Autonomous Regions accounted for more than 13% of total employment in OE, in each year of the 2020-2022 period. The share of OE employment in the ARA was 9.3%, 9.6%, and 9.5% of total regional employment in 2020, 2021, and 2022, respectively. In the ARM, the weight of OE employment in total regional employment amounted to 10.5%, 11.1%, and 11.5%, in 2020, 2021, and 2022, respectively.

Picture 16

WEIGHT OF OCEAN ECONOMY EMPLOYMENT OF THE AUTONOMOUS REGIONS IN NATIONAL OCEAN ECONOMY (2020-2022)



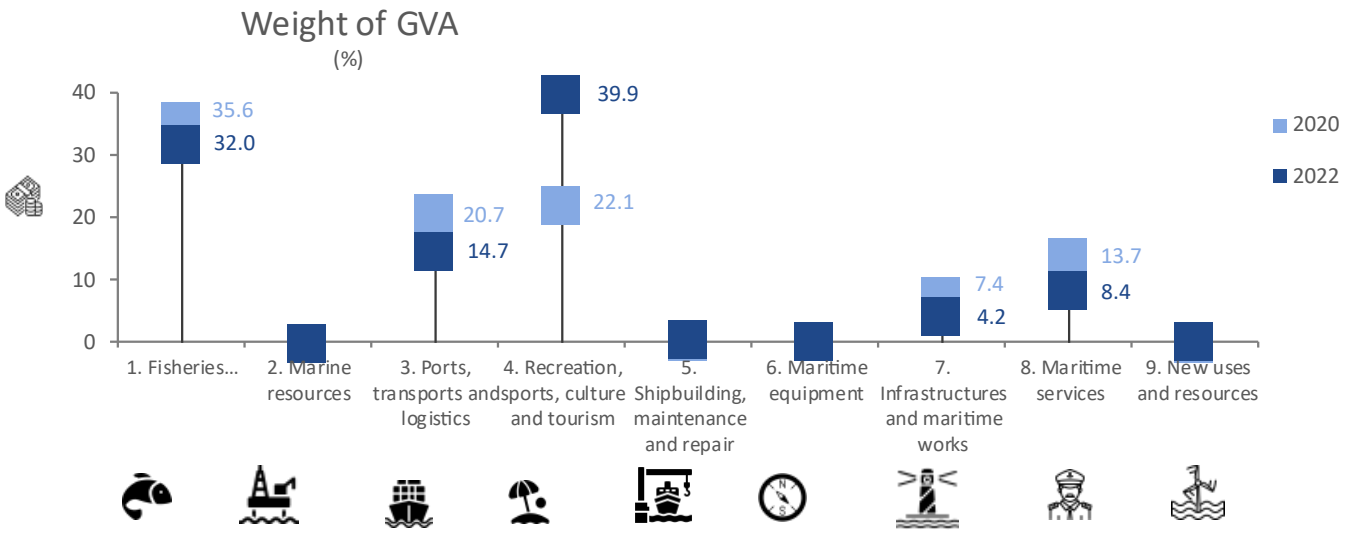
2.2. IN 2022, GROUP 4 - RECREATION, SPORT, CULTURE AND TOURISM BECAME DOMINANT IN THE GVA STRUCTURE OF THE OCEAN ECONOMY OF BOTH AUTONOMOUS REGIONS

In the OE GVA structure, by group, in the RAA the following groups stood out: 1 - Fisheries, aquaculture, processing, wholesale and retail of its products; 4 - Recreation, sport, culture and tourism, with particular emphasis on the nautical component; and 3 - Ports, transport and logistics, which together accounted for more than 80% of the regional OE GVA, in the three-year period (2020-2022).

In 2022, group 4 - Recreation, sports, culture and tourism (39.9%) surpassed the relative importance of group 1 - Fisheries, aquaculture, processing, wholesale and retail of its products (32.0%), in the GVA structure of the ARA.

Picture 17

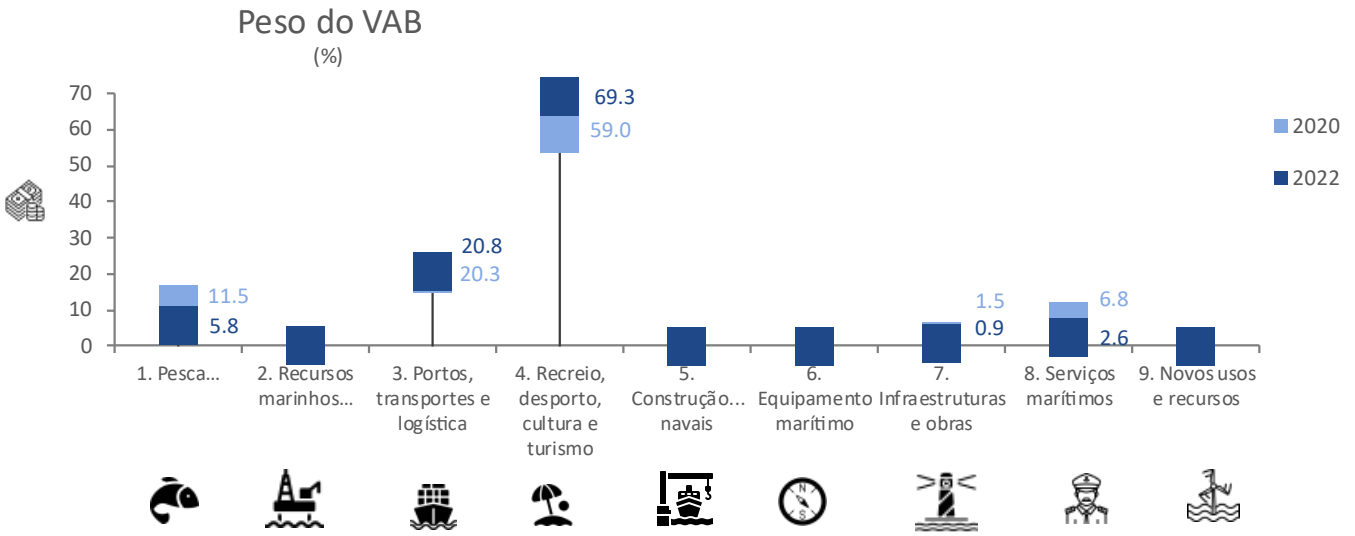
DISTRIBUTION OF THE OCEAN ECONOMY GVA, BY GROUP, IN THE AUTONOMOUS REGION OF AZORES (2020 AND 2022)



In the RAM, the high relative weight of group 4 - Recreation, sport, culture and tourism - reflected the relevance of coastal tourism in the economic activity of the region, significantly influenced the (economic) performance of the regional economy, namely in the years marked by the COVID-19 pandemic.

Picture 18

DISTRIBUTION OF THE OCEAN ECONOMY GVA, BY GROUP, IN THE AUTONOMOUS REGION OF MADEIRA (2020 AND 2022)



3. COMPARAÇÕES INTERNACIONAIS

3.1. IN 2022, PORTUGAL OCCUPIED THE SIXTH AND EIGHTH POSITIONS IN THE RANKINGS OF EUROPEAN COUNTRIES REGARDING THE WEIGHT OF THE OCEAN ECONOMY GVA AND EMPLOYMENT IN THE NATIONAL ECONOMY

To the present date, Portugal is the only European country with an OSA. There are, however, some estimates of the value of the OE economy at global and regional level, as well as several studies carried out by some countries, which attempt to quantify the relative importance of the ocean in the economy (in terms of GVA / GDP and employment).

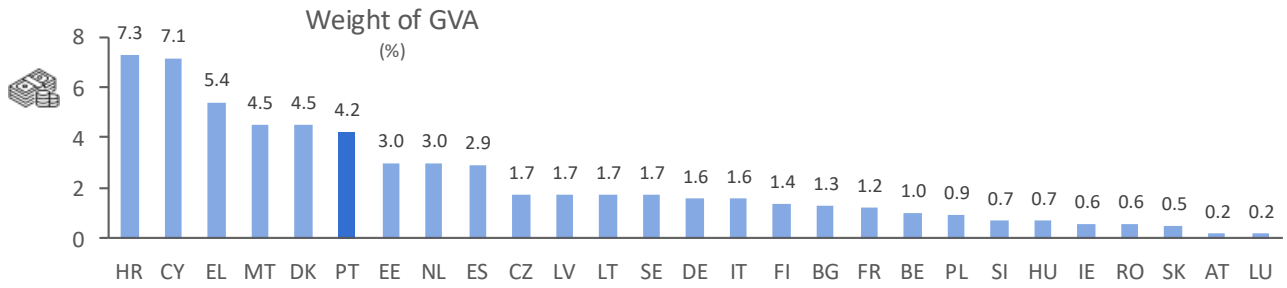
In this press release, the values presented in the European Commission document The EU Blue Economy Report 2025 was used as a reference for international comparisons, for timeliness reasons and because it includes almost all countries of the European Union.

As there is no (total) harmonization in activities, products and methodologies considered in the European Commission document and in the national OSA, comparisons should be made with some caution.

Considering the results of the third edition of the OSA, Portugal was positioned in sixth place, immediately behind Malta and Denmark (4.5%), in the GVA ranking.

Picture 19

WEIGHT OF THE OCEAN ECONOMY GVA IN NATIONAL GVA IN EU COUNTRIES, IN 2022

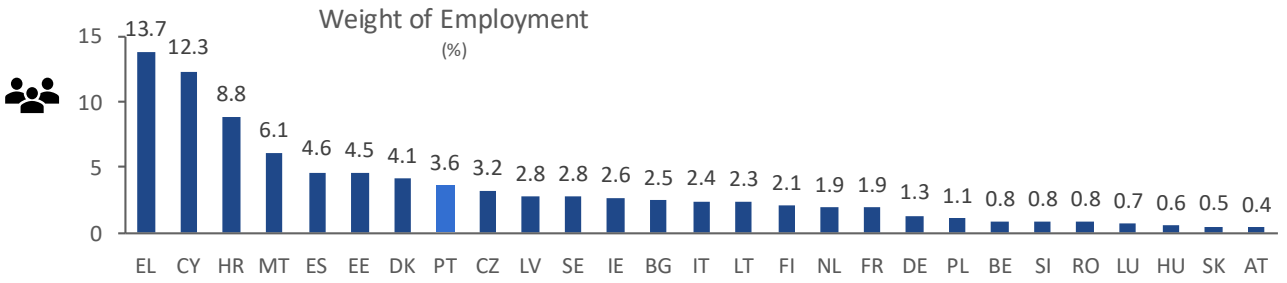


Sources: European Commission (2025). The EU Blue Economy Report. 2025 and Ocean Satellite Account (PT)

Regarding employment, Portugal occupied the eight place (3.6%), just below Denmark (4.1%).

Picture 20

WEIGHT OF THE OCEAN ECONOMY EMPLOYMENT IN NATIONAL EMPLOYMENT IN EU COUNTRIES, IN 2022



Sources: European Commission (2025). The EU Blue Economy Report. 2025 and Ocean Satellite Account (PT)

4. COMPARISON OF MAIN AGGREGATES WITH THE PREVIOUS EDITIONS

4.1. INCREASING GROWTH OF THE OCEAN ECONOMY GVA WEIGHT IN NATIONAL GVA WAS NOT FULLY MATCHED BY GROWTH IN EMPLOYMENT, STILL RECOVERING FROM THE EFFECTS OF THE PANDEMIC

Despite the change in benchmark year in the present edition of the account (following the normal National Accounts procedures) and the fact that the first OSA edition was a pilot exercise, some comparisons can be made regarding the main aggregates.

In 2023, OE GVA amounted to 4.3% of the national economy GVA, while employment accounted for 3.6% of total national employment in 2022. Compared to 2010, the first year with available OSA results, the weight of OE GVA in the national economy increased by 1.4 percentage points (p.p.).

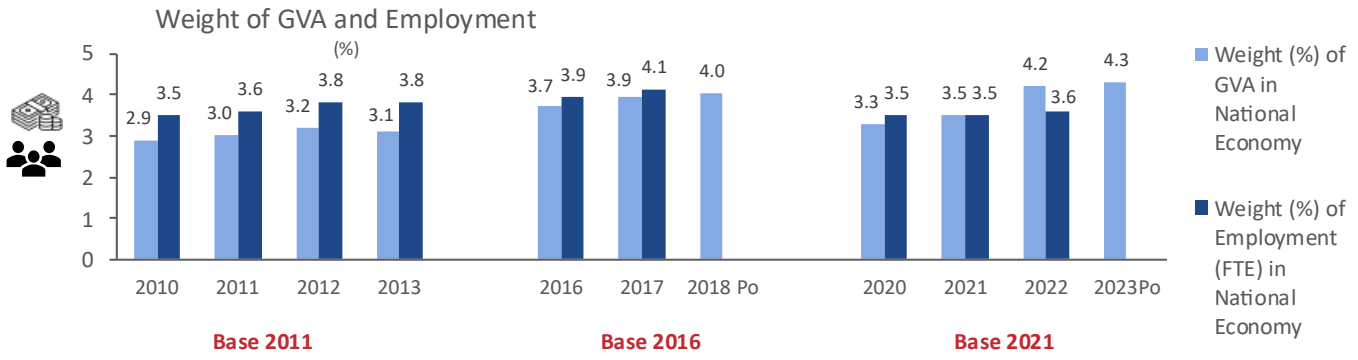
In the three-year period 2020-2022, OE employment has not yet shown a full recovery regarding the levels and relative importance it held in the pre-pandemic era, despite having registered a growth of 12.3%, between 2020 and 2022.

The weight of OE employment in the national economy increased by 0.1 p.p., between 2010 (3.5%) and 2022 (3.6%).

In the three-year period 2016-2018 (base 2016), the OE GVA represented, on average, 3.9% of the national economy GVA, and employment corresponded, on average, to 4.0% of total national employment, in 2016-2017. Between 2010-2013 (base 2011), the OE GVA amounted, on average, to 3.1% of the national economy GVA, while employment corresponded, on average, to 3.6% of total national employment.

Picture 21

COMPARISON OF OSA MAIN AGGREGATES IN THE 2011, 2016 AND 2021 BASES OF NATIONAL ACCOUNTS



5. METHODOLOGICAL NOTES

5.1. INTRODUCTION

The Ocean Satellite Account (OSA), developed by Statistics Portugal) under Council of Ministers Resolution No. 99/2017 of July 10, aims to support the monitoring of the National Ocean Strategies (NOS 2013–2020 and NOS 2021–2030), in their economic and social dimensions.

Integrated into the Portuguese System of National Accounts, the OSA is an essential tool for estimating the size and relevance of the Ocean Economy (OE) within the national economy.

The OSA simultaneously addresses both supply and demand, allowing for estimates of output, intermediate consumption, gross value added (GVA), household and government consumption, imports, and exports. Additionally, estimates are made for both paid and unpaid employment.

5.2. METHODOLOGICAL REFERENCES

Satellite accounts are primarily based on the European System of National and Regional Accounts (ESA 2010) and aim to enhance the ability to observe specific phenomena, serving as extensions of the National Accounts (NA).

The OSA includes territorial breakdowns at the NUTS 1 level, allowing for the individualization of results for the Autonomous Regions of the Azores and Madeira. This edition is based on the Methodological Report "Ocean Satellite Account 2016–2018", produced by Statistics Portugal in collaboration with the Statistics Azores, the Regional Directorate of Statistics of Madeira, and the Directorate-General for Maritime Policy (DGPM), in 2022, with adaptations resulting from the change in the base year of the Portuguese National Accounts (PNA) – Base 2021.

5.3. CONCEPTS AND NOMENCLATURES

The Ocean Economy encompasses "the set of economic activities carried out at the ocean and others that, although not conducted at the ocean, depend on it, including marine natural capital and non-marketable services from marine ecosystems."

The OSA, developed within the framework of the Portuguese System of National Accounts and based on ESA 2010, does not include marine natural capital or non-marketable services from marine ecosystems, as these fall outside the production boundary defined by the NA. For this reason, the OSA presents a more restricted approach than those defined in the NOS 2013–2020 and NOS 2021–2030.

Economic activities carried out at sea include, for example, maritime transport, marine fishing and aquaculture, bioprospecting, research and exploitation of non-living marine resources, nautical tourism, operation of maritime equipment — notably Maritime Information, Communication and Electronic Technologies (ICET) or underwater equipment — and services such as maritime information and communication services.

Among the economic activities that depend on the ocean, but do not take place at sea, the following groups are distinguished:

- The activities that directly depend on the enjoyment of goods and services of marine ecosystems (e.g. coastal tourism);

- The activities that provide goods and / or provide specific services to the activities that take place at the ocean (e.g. ports and logistics, construction, maintenance and ship repair, ship dismantling, construction and marine equipment maintenance and maritime services on land);

- The activities belonging to certain functional chain values, which can hardly be separated, and that influence, directly, the activities that take place at the ocean. In this situation are the value chain centered on fish (e.g. aquaculture in inland waters, as it uses the same fish distribution channels), the shipping value chain focused on water vessel (e.g. transport on inland waterways, river cruises, where there is no differentiation in the production of vessels), and nautical tourism value chain (covering namely the maritime tourism companies operating in water).

The remaining activities, which do not operate or not depend on the ocean, represent the rest of the economy.

OE includes economic activities that use the ocean, directly or indirectly, focusing on the value chain in which they operate, covering both activities that are located in the maritime area, as others located in coastal areas and also in remote areas of the coast, if related to the Ocean. In this context, the economic value of production and consumption of "maritime" goods and services will depend on the set of productive activities defined in the scope of this study, as activities related directly or indirectly to the ocean. Activities that cannot be measured under the Portuguese System of National Accounts aggregates were not considered in the OSA context.

The activities or goods and services (products) related to the OE are fundamentally identified as those who meet simultaneously the following conditions:

- Activities and / or goods and services that, in the absence of the ocean, would cease to exist in significant quantities, or their consumption would be significantly reduced;
- Existence of statistical information available, or that can be obtained.

All other activities that neither operate at sea nor depend on it correspond to the rest of the economy.

The definition of the OE encompasses all economic activities that use the ocean, directly or indirectly, with a focus on the value chain in which they are embedded. It includes activities located in maritime spaces, coastal zones, and also inland areas, provided they are related to the ocean.

The economic value of the output and consumption of goods and services with a “maritime” character depends on the set of productive activities defined within this scope, i.e., activities directly or indirectly related to the ocean. Activities that cannot be measured within the aggregates of the Portuguese System of National Accounts were not included in the OSA.

The activities and goods and services (products) of the OE are defined according to two main criteria:

1. **Significant dependence on the ocean** – in the absence of the ocean, these activities would cease to exist or would have very limited consumption;

2. **Availability of statistical information**, or the possibility of obtaining it.

The scope of the Ocean Economy, considered in the OSA, aggregates activities in two main areas: "Established activities" and "Emerging activities" which, in turn, are divided into groups. Nine groups were considered, eight of which correspond to established activities (groups 1 to 8) and the last group 9 - New uses and resources of the ocean, which congregates emerging activities.

The distinction between established and emerging activities follows international criteria for market maturity, particularly those used by the EU in the *Blue Growth* study.

Groups of the OE in the OSA:

1 – Fishing, Aquaculture, Processing and Wholesale and Retail of its products

This group includes activities related to the value chain of fishing and aquaculture products. Core activities include fishing and aquaculture, with upstream connections to the animal feed industry — particularly for aquaculture — and downstream to the processing industry, such as the preparation and preservation of fish, crustaceans, and molluscs. It also includes ice production, cold storage, and wholesale and retail trade of fishing and aquaculture products.

2 – Non-Living Marine Resources

This group covers activities related to the exploration and exploitation of conventional energy resources (oil and natural gas), marine mineral exploration and extraction, and the extraction and refining of salt and production of salt-based condiments. It also includes seawater desalination.

3 – Ports, Transport, and Logistics

This group includes activities related to the value chain of water transport, with maritime transport of goods and passengers as the core activity. Downstream activities include port services, rental of maritime and river transport equipment, and inland waterway transport of goods and passengers. Cruises are also included.

4 – Recreation, Sports, Culture, and Tourism

This group includes maritime recreational and sports activities, maritime-related cultural activities, and maritime and coastal tourism, including maritime-tourism companies operating in water. It covers activities related to nautical pursuits, including both recreational and sports boating.

Coastal tourism includes accommodation, imputed rents from second homes, real estate promotion of tourist accommodations, restaurant activities, travel agencies, and associated leisure and recreation activities, including related cultural activities — similar to those considered in the Tourism Satellite Account, but limited to coastal parishes.

5 – Shipbuilding, Maintenance, and Repair

This group comprises activities related to the construction of vessels and floating platforms, including recreational and sports boats, as well as the repair, maintenance, and end-of-life dismantling of vessels.

6 – Maritime Equipment

This group includes a wide range of manufacturing industry activities, such as those involved in equipping vessels or floating platforms. It is a heterogeneous category, primarily focused on the construction and repair of equipment relevant to other OE activities, including submarine cables and maritime robotics.

All manufacturing industry activities identified as producing or repairing maritime equipment that supports most of the other groupings were consolidated into this single category.

7 – Infrastructure and Maritime Works

This group includes activities related to the construction and expansion of port terminals, aimed at improving maritime and land accessibility — notably land corridors for freight transport by rail (linked to maritime transport through connections between railways and major intermodal transport hubs). It also includes the construction and repair of ports and marinas, as well as dredging, coastal protection, and defence works.

8 – Maritime Services

As the name suggests, this group includes service activities related to the ocean. It encompasses education, training, and research & development in marine-related areas; governance activities such as maritime defence and security, and maritime spatial planning; and a large subgroup of other service activities, including maritime information and communication services, consulting and business services in marine sectors, maritime financing and insurance, trade and distribution activities related to the ocean, and others.

9 – New Uses and Resources of the Ocean

This group was created to quantify a set of emerging activities that currently have limited economic relevance and would otherwise be "diluted" within other activities. It includes marine biotechnology; marine renewable energies; gas storage; exploration and exploitation of non-conventional energy resources (e.g., methane hydrates); and earth observation services.

Additionally, the information in the CSM is organized into three levels of observation:

- **Characteristic activities** – those in which a significant part of operations takes place at ocean, or whose products originate from or are intended for use at the ocean or along the coastline. This includes all groups except group 6 – Maritime Equipment, group 8 – Maritime Services, and part of the tourism activities in group 4 – Leisure, Sports, Culture, and Tourism (specifically coastal tourism).
- **Cross-cutting activities** – these support the other activities within the CSM. They correspond to group 6 – Maritime Equipment and group 8 – Maritime Services.
- **Activities favoured by proximity to the ocean** – these correspond to coastal tourism (part of group 4), including accommodation, food services, and imputed rents of second homes located in parishes located in coastal areas (based on the European classification of coastal and non-coastal zones, see the Methodological Report "Ocean Satellite Account 2016–2018").

5.4. METHODOLOGY

The selection of the OSA reference population for the years 2020, 2021, and 2022 was based on the universe of the Portuguese National Accounts (PNA – Base 2021), segmented by institutional sector (i.e., Non-financial corporations, Financial corporations, General government, Households, and Non-profit institutions serving households – NPISH). The selection considered the codes from the Portuguese Classification of Economic Activities (CAE Rev.3) related to ocean activities, as defined in the Methodological Report "Ocean Satellite Account 2016–2018."

For each year, a Supply and Use Table (SUT) was prepared for products considered "Ocean-related," based on the SUT of the Portuguese National Accounts (127 branches of economic activity × 433 products), including the main economic variables of supply (Output, Intermediate Consumption, and Gross Value Added – GVA) and demand (Public Consumption, Private Consumption, Investment, Exports, and Imports).

The employment estimate in the OSA consisted of calculating Full-Time Equivalent (FTE) jobs for the entities considered in the production of "ocean-related" goods and services.

For this purpose, in the institutional sectors of Non-financial corporations and Households, the compensation of employees/ jobs ratios, by activity and institutional sector, were used according to the most detailed level of available data sources. The estimated jobs were then converted into FTEs based on the ratios used in the PNA.

In the General government and NPISH sectors, compensation of employees /FTE ratios were used (as production in these sectors is estimated based on costs, and compensation of employees is the most representative indicator of employment).

Main Methodological Changes Compared to the Previous OSA Edition

The new OSA edition is consistent with the Portuguese National Accounts (PNA – Base 2021). The previous edition was based on Base 2016. The main methodological changes are related to:

1. **Revision of the National Accounts – New Base 2021**:

   The PNA undergo regular five-year revisions within the framework of the ESA 2010 and Eurostat recommendations, aiming to introduce methodological changes and incorporate new data. The latest benchmark year change occurred in September 2024. The changes with the greatest impact on the OSA were:

   a) Incorporation of new data sources:

   - New Balance of Payments series;
   - Household Budget Survey – HBS 2022/2023;
   - General Population and Housing Census – Census 2021;
   - Use of e-invoice data as an auxiliary source.

   b) Methodological developments:

   - Update of hedonic price models for calculating imputed housing rents, based on Census 2021 data;

- Adjustments in sectoral classification and institutional units, notably the reclassification of entities previously included in the NPISH sector, which were moved to the Non-Financial Corporations sector.

2) Improvements in the estimates of certain activities, using the same methods as in the National Accounts:

- Travel agencies – only the intermediation service should be considered for valuing the production of travel agencies. The value of the intermediated services — accommodation, transport, etc. — should be deducted if included in the total value of the service provision. The same applies to intermediate consumption of these entities, so the respective GVA remains unchanged under this methodology.
- Transport support services – only the intermediation service should be considered. This led to changes in the levels of production and intermediate consumption, without impacting the GVA.

3) Data sources:

- Research and Development (R&D): The main data source was the *Survey on National Scientific and Technological Potential*, which since 2014 has identified ocean-related projects under Strategic Priority 10: Sea Economy. In 2022, ocean-related projects were reclassified under Strategic Priority 3 (*Major natural assets: forest, sea, and space*), requiring a new approach for identification. As in the previous account, the *Foundation for Science and Technology (FCT)* provided INE with a precise estimate of the "Ocean" coefficient in its total participation/funding, based on data from various funding instruments (including Projects, Scholarships, Scientific Employment, and R&D Units).
- Tourism: The share of travel agencies linked to ocean-related activities is now calculated using the *Survey on Residents' Travel (IDR)* (motivations "coastal area (beach)" and "shipping cruises"), replacing the *Household Budget Survey (HBS)* (motivation "beach").

4) Classifications:

The new NUTS 3 nomenclature (NUTS 2024) was used, which modifies the classification of coastal parishes compared to NUTS 2013, in accordance with Delegated Regulation (EU) 2023/674.

5.5. FINAL CONSIDERATIONS

The OSA is an exploratory work, based on concepts and statistical practices that are still under development at the international level.

The OE, as a concept, is broader than the scope operationalized in the OSA for statistical purposes. According to the OECD, a comprehensive definition of the OE should include, in addition to economic activities carried out at sea and others that, although not conducted at ocean, depend on it, also marine natural capital and non-marketable services from marine ecosystems. However, these latter elements are not included in the OSA, as they fall outside the production boundary defined by the NA, in accordance with ESA 2010.

CONVENTIONAL SYMBOLS

- **Po**: Provisional
- **//**: Not applicable
- **x**: Not available

ACRONYMS AND ABBREVIATIONS

AEA: Air Emissions Accounts
CAE: Portuguese Classification of Economic Activities
DGPM: Directorate-General for Maritime Policy
DREM: Regional Directorate of Statistics of Madeira
EC: European Commission
ESA 2010: European System of National and Regional Accounts
Eurostat: Statistical Office of the European Union
FCT: *Fundação para a Ciência e a Tecnologia* (Portuguese science and technology authority)
FISIM: Financial Intermediation Services Indirectly Measured
FTE: Full-Time Equivalent
GDP: Gross Domestic Product
GFCF: Gross Fixed Capital Formation
GHG: Greenhouse Gases
GVA: Gross Value Added
HBS: Household Budget Survey
IDR: Survey on Resident Travel
INE: Statistics Portugal
KAU: Kind-of-Activity Unit (s)
NA: National Accounts
NOS 2013–2020: National Ocean Strategy 2013–2020
NOS 2021–2030: National Ocean Strategy 2021–2030
NPISH: Non-Profit Institutions Serving Households
NUTS: Nomenclature of Territorial Units for Statistical Purposes
OE: Ocean Economy
OECD: Organisation for Economic Co-operation and Development
OSA: Ocean Satellite Account
PNA: Portuguese National Accounts
p.p.: Percentage points
RAA: Autonomous Region of the Azores

RAM: Autonomous Region of Madeira

R&D: Research and Development

SCNP: Portuguese System of National Accounts

SDGs: Sustainable Development Goals

SREA: Statistics Azores

SUT: Supply and Use Table

EU: European Union