
11th LUMEN International Scientific Conference Communicative Action &
Transdisciplinarity in the Ethical Society | CATES 2018 |
23-24 November 2018 | Targoviste, Romania

Communicative Action & Transdisciplinarity in the Ethical Society

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<https://doi.org/10.18662/lumproc.111>

How to cite: Olteanu, A., & Stinga, V. (2019). The Economic Impact of the Blue Economy. In C. Ignătescu (ed.), *11th LUMEN International Scientific Conference Communicative Action & Transdisciplinarity in the Ethical Society | CATES 2018 | 23-24 November 2018 | Targoviste, Romania* (pp. 190-203). Iasi, Romania: LUMEN Proceedings. <https://doi.org/10.18662/lumproc.111>



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The Economic Impact of the Blue Economy

Ana OLTEANU¹, Viorela STINGA²

Abstract

For many countries the marine, coastal and maritime sectors represent an important foundation for sustainable development. This is why in order to deliver and achieve it, many countries extend their economy beyond land based activities. A sustainable blue economy in every country depends not only on their maritime and marine zones, but also on their existing economic activities and their issues regarding the environmental, social, and cultural conditions. The main objective of the “blue economy” is to ensure environmental sustainability while promoting social inclusion, economic growth and preservation or improvement of livelihoods [1, 2]. According to the World Bank in Europe, the Blue Economy represents nearly 5.4 million jobs and generates a gross added value of approximately €500 billion per year. In order to have a sustainable blue economy each country should find the best way to balance sustainability and economic growth to allow optimal use of maritime resources, ensuring at the same time maximum benefit to the environment. Throughout this paper, we tried to emphasize the economic impact of the Blue economy, by analyzing the key sectors: maritime transport, cruise tourism, aquaculture and offshore oil and gas. In each country, some of these sectors need little encouragement and additional governance, while others required better and more efficient planning in order to obtain sustainable outcomes.

Keywords: *Blue economy; maritime transport; cruise tourism; aquaculture; offshore oil and gas;*

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1. Introduction

The concept of a Blue Economy focuses on fostering the growth of a “Green Economy”, an economy that seeks to reduce the environmental risks and ecological rarities that will assure an improvement in human well-being and social equity [3]. The promotion of the concept of a Blue Economy started as a response to an international push to “green” the global economy by underling the importance of the marine and ocean economy [4].

So the main objective of the “blue economy” is to ensure environmental sustainability while promoting social inclusion, economic growth and preservation or improvement of livelihoods [1, 2]. According to the World Bank in Europe, the Blue Economy represents nearly 5.4 million jobs and generates a gross added value of approximately €500 billion per year.

In order to have a sustainable blue economy each country should find the best way to balance sustainability and economic growth to allow optimal use of maritime resources, ensuring at the same time maximum benefit to the environment. As emphasized by the Economist Intelligence Unit in their paper [5], a sustainable blue economy depends in each country on:

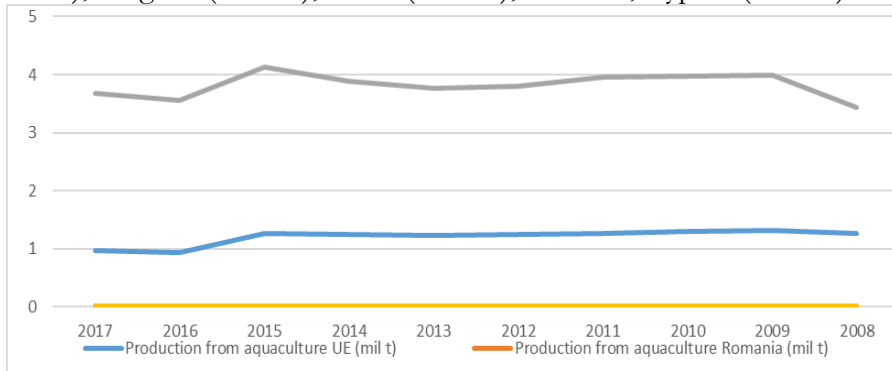
- Maritime zones;
- Each country national circumstance;
- The existing economic activities and the potential for new and innovative ones;
- Each country issues regarding environmental, social, and cultural conditions.

The blue economy includes the following sectors: traditional ocean industries (fisheries, tourism and maritime transport), offshore renewable energy, aquaculture, seabed extractive activities and marine biotechnology and bioprospecting [6]. In each country some of these sectors need little encouragement and additional governance, while others required better and more efficient planning in order to obtain sustainable outcomes.

2. Aquaculture

At European level, in 2017, aquaculture production of over 1,182 million tons worth 3.7 million euros was achieved, with the sector holding the ninth position worldwide. This production was mainly achieved by

countries around the Mediterranean Sea and the Black Sea, with major contributions to this result: Italy (43.6%³), Greece (62.2%¹), Romania (69.5%¹), Bulgaria (54.9%¹), Malta (81.6%¹), Slovenia, Cyprus (78.7%¹).

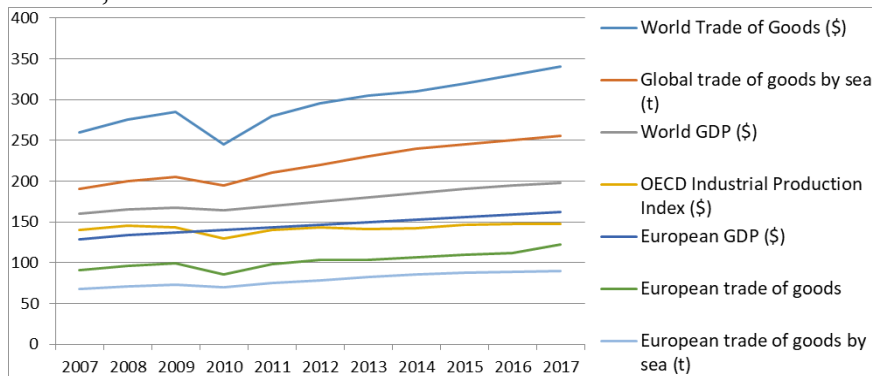


Source: processing after [7, 8]

Figure 1: Production from aquaculture

3. Maritime Transport

As can be seen from the following two figures, global transport activity over the last 10 years has followed the trend of global economic development. In the period under review, world GDP recorded an average increase of 2.2% while global commodity trade increased by an average rate of 2.9% and maritime trade progressed by 3%. European indicators followed the same trajectory, GDP recording an average increase of 2.4%, commodity trade 3.2%, and sea trade 2.9%.

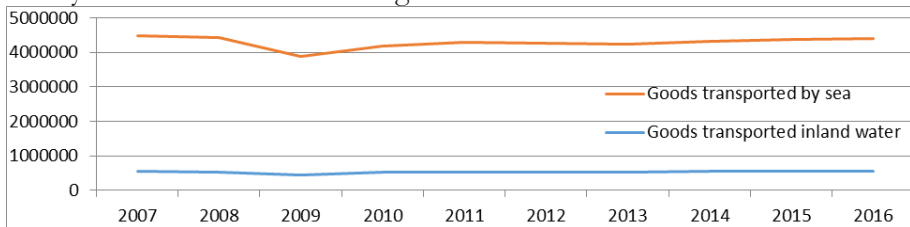


Source: processing after [7, 9]

Figure 2: Evolution of World and European Goods Trade corresponding to GDP and OECD Industrial Production Index

³ of total national fish production

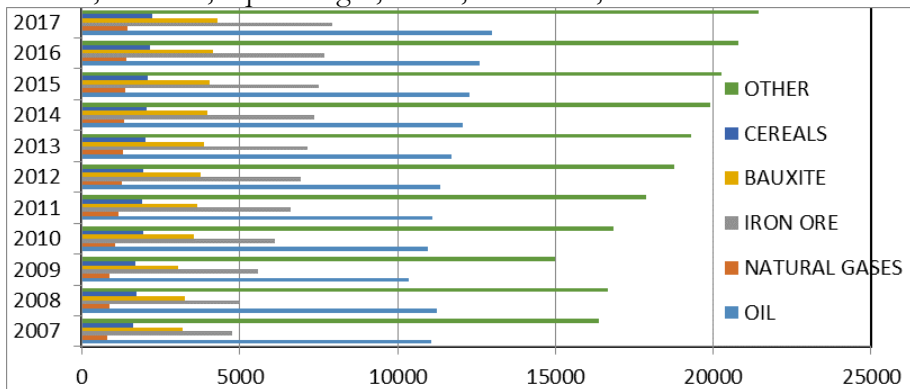
At the European level, the quantity of goods transported by sea and inland water at the last ten years has risen since the collapse of the shipping industry in 2008-2009 due to the global economic crisis.



Source: processing after [7]

Figure 3: The evolution of the quantity of goods transported at EU level

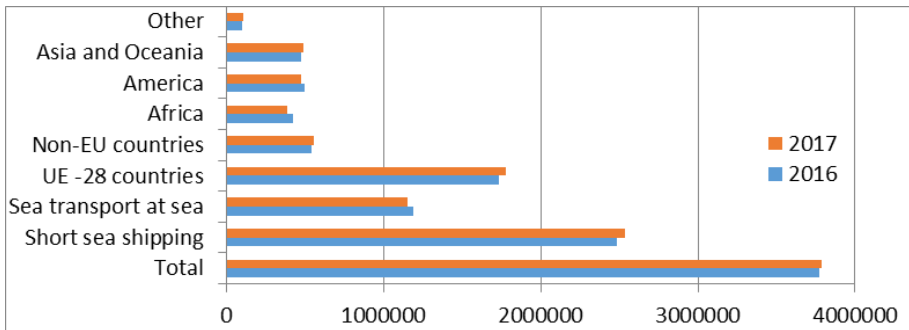
Global shipments of bulk cargo have seen an explosive increase, so now it exceeds three quarters of the volume of the world's commercial fleet, generally handling bulky goods, grouped in large parts, homogeneous in the form of raw materials such as cereals, coal, petroleum and petroleum products, iron ore, liquefied gas, wood, chemicals, cement.



Source: processing after [7, 9]

Figure 4: The evolution of world trade by type of goods-million tons

Worldwide in terms of tonnage, grain transport ranks third for oil and ores, the world flow from the Americans to Europe and Asia, and from Australia to Japan and Europe to a lesser extent. The mobility of this merchandise is carried out by specialized vessels (cereals), special cargo containers, combined bulk carriers and combined oil (with the aim of obtaining a lower freight, but it also presents a number of shortcomings among which are the restrictions imposed in some countries and small mouths of storehouses).

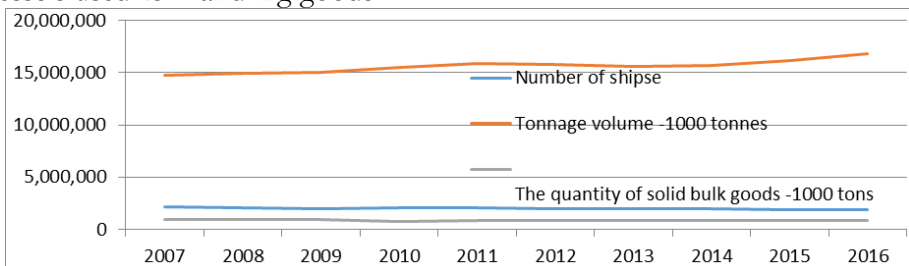


Source: processing after [7]

Figure 5: Volume of goods transported by zone

At Community level, maritime transport is the main mode of transport that ensures exports and imports at EU level, as well as fairly high incomes for Member States of EU national budgets and many jobs.

In view of the increase in international trade that has taken place over the last 50 years, European freight transport has grown, so that in this area companies have invested significant amounts in fleet growth and endowment. It can easily be seen from the following graphs a 1.3% decrease in the number of ships operating in EU ports, but a 4.5% increase in tonnage volume, which can be explained by the increase in the size of vessels used for handling goods.

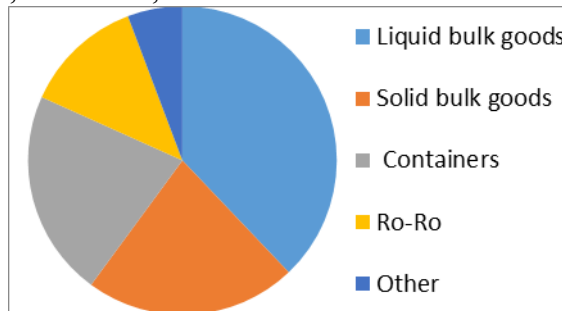


Source: processing after [7]

Figure 6: Evolution of ship, gross tonnage, volumes of bulk cargo handled at EU level

As indicated in figure 7, at the level of the European Union, the total quantity of cargo handled in the EU's maritime ports registered a 1.4% increase in 2017 compared to the previous year, with a major contribution to the Netherlands, followed by countries such as the UK and Italy. Romania's contribution to these results was only 1.2%, with a 4% increase over 2015, which far exceeded the European average.

According to maritime transport statistics, the bulk of bulk goods in total cargoes crossing European ports were bulk cargoes, followed by total solid bulk cargo, containers, Ro-Ro mobile units and other cargo categories.

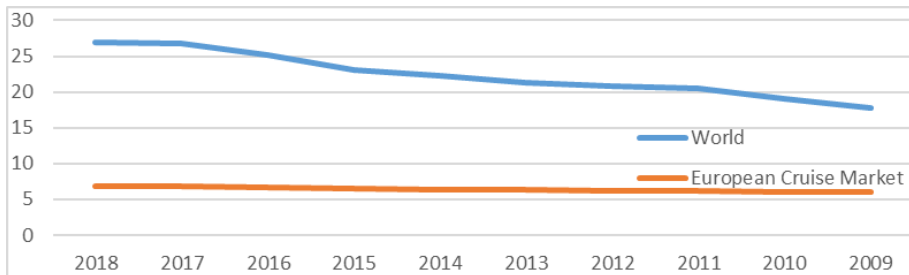


Source: processing after [7]

Figure 7: Types of goods transported in European ports thousands tons

4. Cruise Tourism

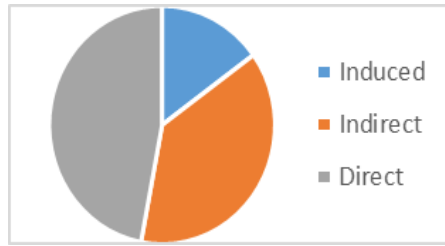
According to CLIA [10] global estimates in 2018, more than 27 million passengers are expected to opt for the cruise tourism sector growing over the past 10 years, over 50%, generating more than 1 million jobs and over 120 billion dollars



Source: processing after [7, 10]

Figure 8: Passenger (millions)

In 2017, European cruise tourism provided over 17 billion US dollars of direct spending up 2% over the previous period.

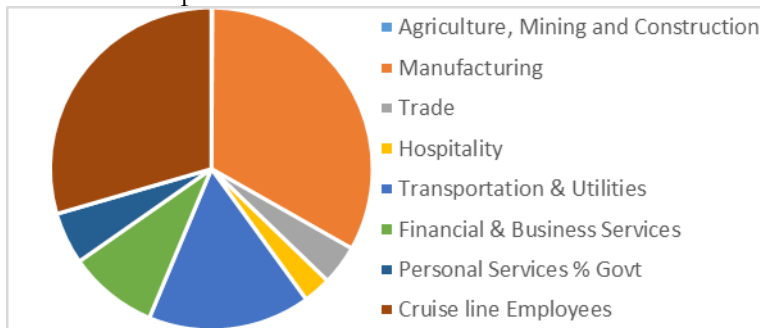


Source: processing after [7, 10]

Figure 9: Total compensation impact in Europe

The direct economic impact includes the pay of cruise line employees, the production of goods and services provided by businesses in the areas required for cruise passengers and cruise crews.

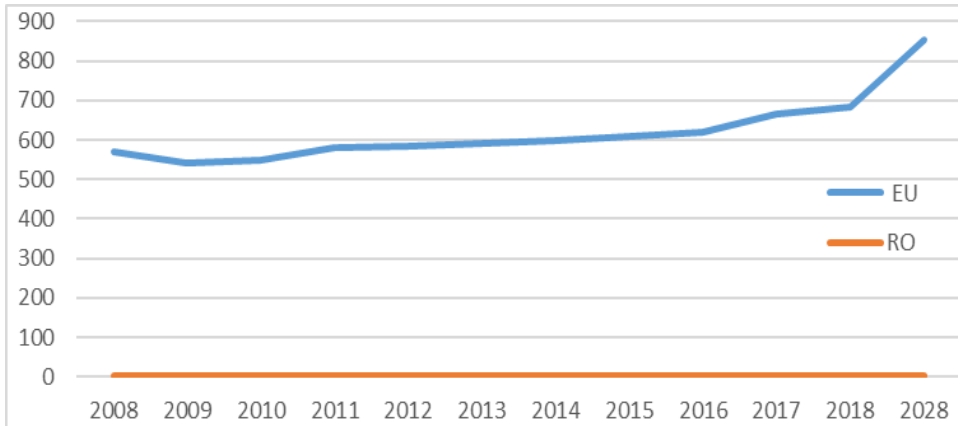
More than 3 quarters of the direct economic impact is provided by the manufacturing sector including the shipbuilding industry, direct jobs and employee compensation. Approximately 40% of the direct jobs of the cruise industry are represented by European cruise liners, whose compensation amounted to more than 30% of the total expenditure, almost a quarter was allocated to the Transport and Utilities sector.



Source: processing after [7, 10]

Figure 10: Direct Cruise Industry Compensation by Industry

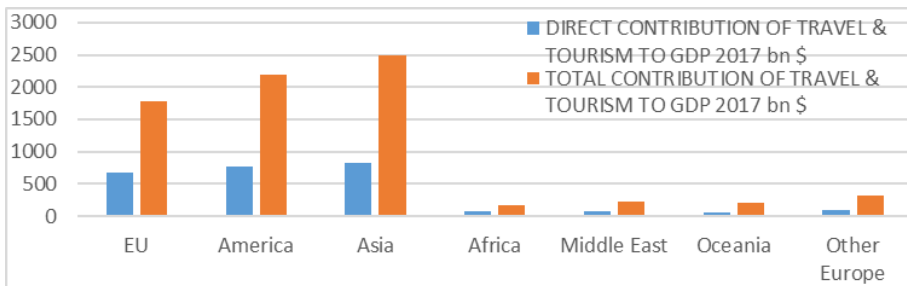
The direct economic impact results from the use of goods and services needed to support the cruise industry, affecting business-to-business enterprises, and the impact of Indus that primarily affects consumer companies is the result of spending by those involved in the sector.



Source: processing after [7, 10]

Figure 61: Direct contribution of Travel & Tourism to GDP (bn\$)

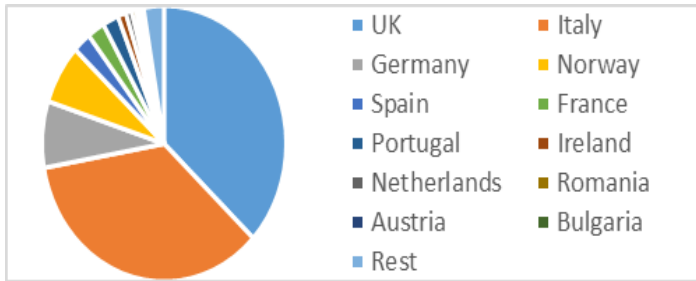
In 2017, the cruise industry spent over \$ 17 billion, of which 30% was the payroll of employees, 33% of goods and service (over \$ 700 million worth of shipbuilding), transport and utilities 16%, 9% financial services (insurance, advertising, etc.), more than \$ 4 billion needed to build and modernize cruise ships at the European level by 2019 following increase number of ships whit 48 valued \$ 27 billion.



Source: processing after [7, 10]

Figure 72: Contribution of Travel & Tourism to GDP 2017 (bn\$)

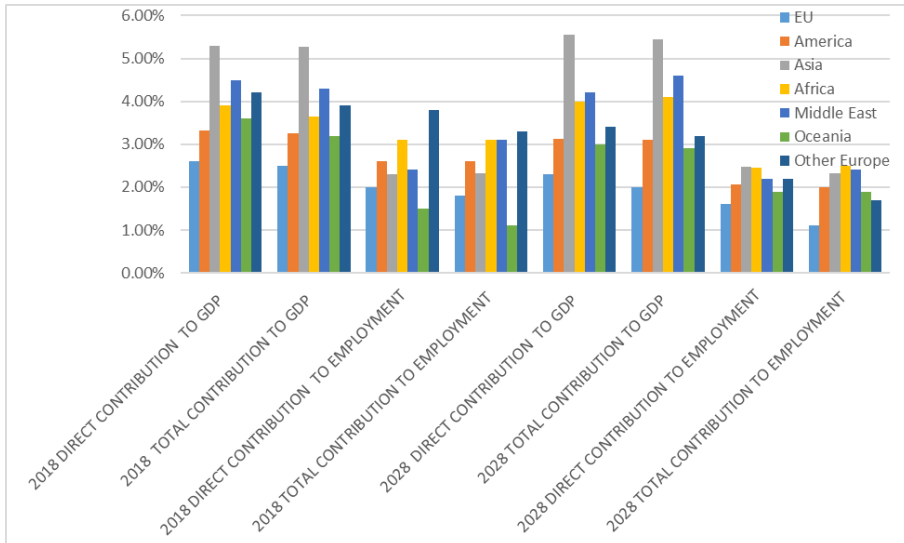
At European level, the overall economic impact of the Travel and Tourism sector provided 10.4% of GDP and expected to grow by 2.5% in 2018 and by 2% for the next 10 years, in 2028 reaching over 2200 billion dollars (11.1% GDP).



Source: processing after [7, 10]

Figure 83: Cruise line compensation shares by country

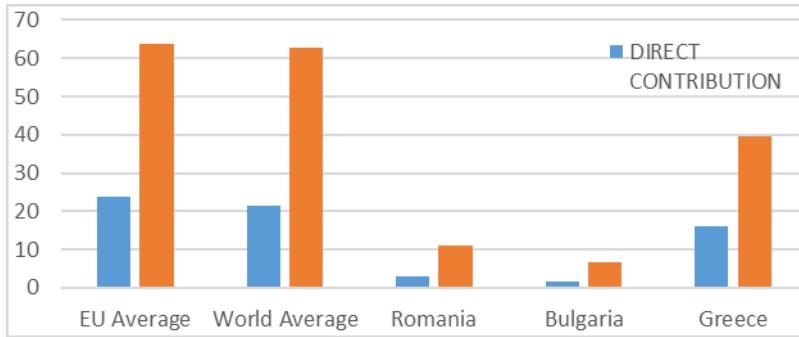
At European level, over 250 port visits were made, including Black Sea ports and Atlantic islands. A passenger spends on average about 300 Euro (including airplane tickets), and in the embarkation port city 80 euro. The crew of passenger ships spent an average of 22 euros per person on the ports.



Source: processing after [7, 10]

Figure 94: 2018-2028 real growth of contribution of Travel & Tourism to GDP & Employment

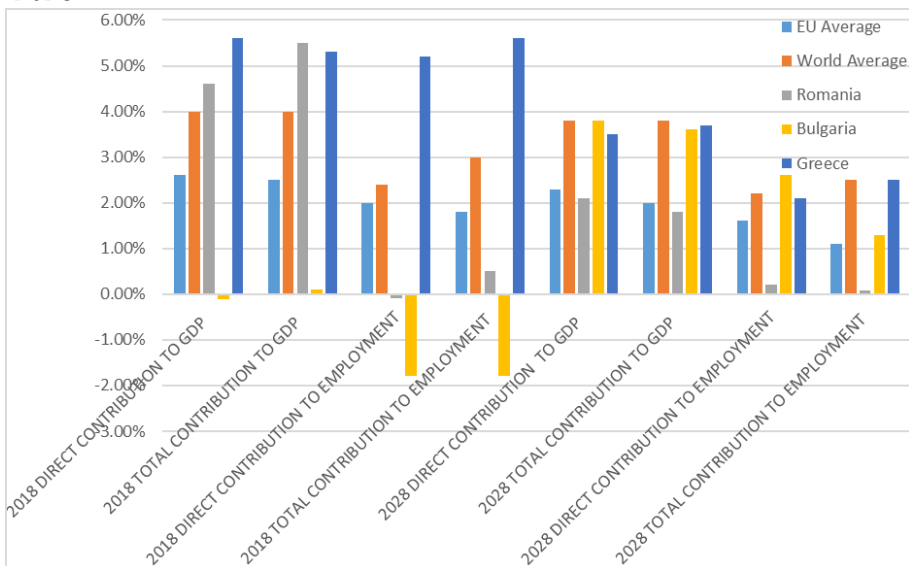
In the year 2017, about 4 billion dollars were spent, over a quarter of the total cruise industry's spending in embarkation and transit ports by passengers and cruise crews, growing about 6 percent over the previous year.



Source: processing after [7, 10]

Figure 105: Contribution of Travel & Tourism to GDP 2017 (bn\$)

For the year 2017, the Travel and Tourism sector provided over 10% of GDP and the number of seats. The direct contribution of this sector was over \$ 3 billion and is expected to grow by 4.6% in 2018, reaching \$ 4 billion in 2028.



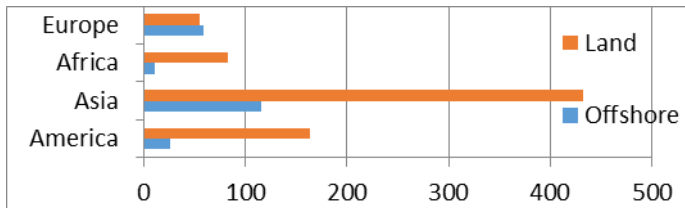
Source: processing after [7, 10]

Figure 16: 2018-2028 real growth of contribution of Travel & Tourism to GDP & employment

From 2017 Port of Constanta holds the MedCruise Directorate for the Black Sea region. Therefore, along with the rest of the ports in the area, Odessa, Varna and Burgas have developed a plan of measures aimed at attracting the interest of the big cruise lines to our area. The next year is announced the MedCruise conference on Black Sea ports where is aimed the development of itineraries for passenger ships for the year 2021. From the

cruise tourism sector to Constanta port there are signs of improvement considering that for the next season of cruises were announced the arrival of large capacity passenger ships.

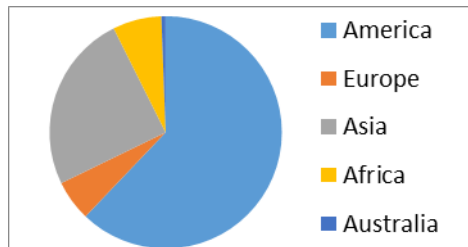
5. OFFSHORE OIL AND GAS



Source: processing after [7, 11]

Figure 117: Number of oil and gas rigs worldwide as first semester of 2018 by type and region

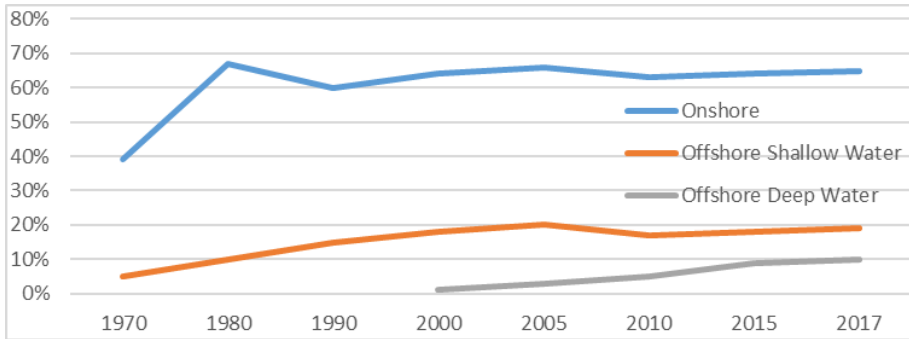
Given the decline in the global oil and gas industry, the number of oil platforms has also fallen, which has also attracted the drop in employment.



Source: processing after [7, 12]

Figure 18: Offshore installations

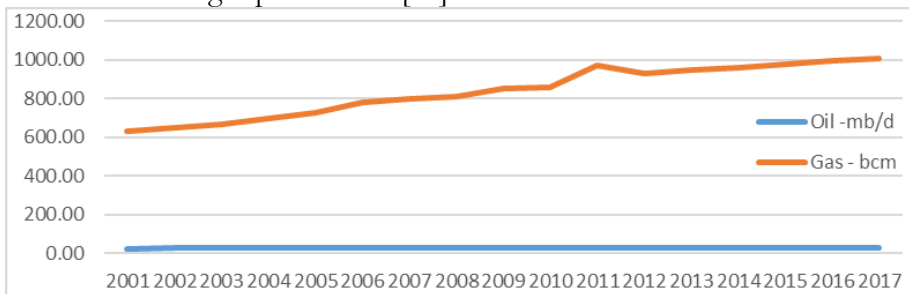
Worldwide, over the last year, offshore oil and gas installations are distributed according to the previous chart. According to U.S. Bureau of Labor Statistics The oil and gas industry holds tens of thousands of jobs over the past year most of them from the oil service and support activities.



Source: processing after [7, 13]

Figure 19: Oil Production

Global offshore gas production has grown over 30% over the past 10 years, while oil production has remained in the normal trend. Until 2040, offshore gas production is projected to grow by 700 billion cubic meters to over 30% of total gas production [14].

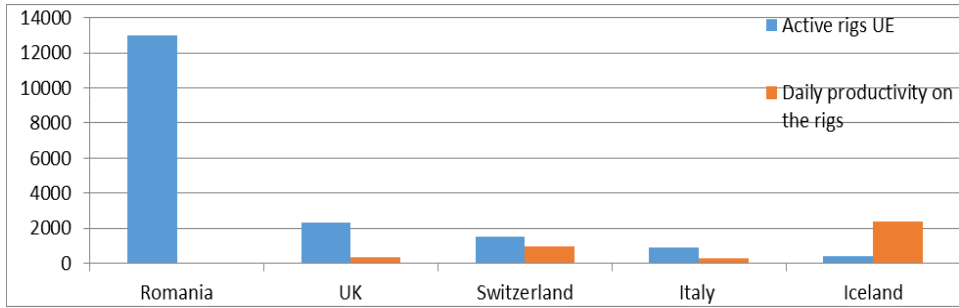


Source: processing after [7, 12]

Figure 120: Global offshore oil and gas

Global oil offshore oil production in the last year recorded the highest level in the last 10 years reaching a third of the global crude oil volume.

Romania's active probes dominate the onshore oil and gas production market at European level, but in terms of productivity, this is the last one. Romania owns over one third of the number of employees in this sector, with a significant decline in production due to the depletion of current reserves.



Source: processing after [7, 15]

Figure 131: Oil industry

The next year in Romania there will be a new gas source that will ensure a production of one billion cubic meters for the first year and it will gradually increase to 4 billion cubic meters annually. At present, 12 billion cubic meters are consumed annually, out of which about 0.6 billion are imported, so the investment will ensure the coverage of the import and will create the prerequisites for the export of this product.

6. Conclusion

As shown above one of the main objective of the Blue Economy is to ensure environmental sustainability by promoting economic growth. The economic impact of the aquaculture sector is big, due to the fact that it holds the ninth position worldwide, its production worth over 3.5 million Euros.

The key sector of maritime transport represents one of the most important sector of the worldwide transport economy, providing both high incomes for the national budgets of the European Member States as well as many jobs (emphasized within the paper).

Regarding the cruise and tourism sector, we shown its impact on the GDP, its main direct economic impact being provided by the shipbuilding industry, direct jobs and employee compensation. By holding the MedCruise Directorate for the Black Sea region it is expected that the economic impact of Romania within this sector to grow.

Even if there is a decline regarding the offshore oil and gas industry, which automatically leads to a drop in employment, Romania still remains the one that dominated the production market at European level.

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