

MARINE AND BLUE ECONOMY: WHAT IS THE DIFFERENCE AND WHAT UNITES THESE CONCEPTS?

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Abstract. The purpose of this article is to elucidate the content of the categories "marine" and "blue" economy, which are increasingly utilised in scientific and political contexts. Absent an acknowledgement of this issue, there is a risk of ambiguous interpretation of the relevant definitions, which poses a threat to the effectiveness of crucial decisions related to accelerating economic growth without distorting natural ecosystems. The focal point of this study is the examination of the relationships established among participants engaged in projects that are focused on the utilisation of the global oceans' abundant resources. The research methods employed encompass content analysis of academic publications and documents from international organisations, in addition to the authors' own observations. The research results indicate a clear differentiation of the content of the categories "marine" and "blue" economy, along with other related categories. This clarity will improve practical decisions regarding the selection of sustainable development strategies for enterprises engaged in activities related to the use of marine/ocean resources to create values capable of meeting human needs. The proposed model delineates the process of planetary economy development from ordinary to sustainable, with the corresponding qualification of its intermediate states.

Keywords: economy, green economy, marine economy, ocean economy, maritime economy, coastal economy, blue economy, blue transition.

JEL Classification: Q22, Q25, Q28, R42

1. Introduction

There has been an increasing prevalence of discourse pertaining to the Blue Economy (BE) within political and public circles, as well as among academic and scientific communities. International organisations such as the UN, the International Maritime Organization, the World Trade Organization, and institutions of intergovernmental alliances like the European Union are showing interest in it. Concurrently, in-depth interviews with numerous colleagues during professional gatherings, such as conferences, seminars and symposia, have revealed a concerning lack of clarity regarding the subject matter among many professionals. Some scholars have associated it with the concept of the "green economy", which advocates ideals of low-carbon production at all stages of the product life cycle and resource efficiency.

Conversely, other authorities, including the European Commission (2021), have expressed a divergent

perspective, asserting that the term encompasses economic activities that utilise resources situated in the world's oceans, extending to the seabed and beyond. The Blue Economy is defined as a set of strategies that aim to mitigate the effects of intense climate change. These strategies include the development of marine renewable energy sources, the decarbonization of maritime freight and passenger transport, and the greening of ports. This transformation renders it more cyclical, with updated standards for industrial bioresource extraction tools, decommissioning old ships, and worn-out marine platforms. The development of infrastructure in coastal areas has been demonstrated to contribute to the preservation of wildlife and landscapes, thereby generating economic benefits through the boost in tourism it engenders.

A third approach is also worthy of note, insofar as it combines the first two. In this context, it is pertinent to mention the position of the World Bank:

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The Blue Economy is defined as "the sustainable and integrated development of oceanic sectors in a healthy ocean" (The World Bank, 2023). However, it is important to note that the terms "oceanic sector" and "healthy ocean" require separate explanations, as individuals who encounter this definition invariably ascribe their own interpretations to them.

It is the conviction of the experts from the signatory countries of the "Commonwealth Charter" that the Blue Economy constitutes a novel concept which encourages sustainable use, innovation, and management of the ocean and its life-giving resources. Furthermore, it is instrumental in the preservation and advancement of a multitude of intangible assets, including the traditional way of life of coastal communities, carbon absorption, and coastal resilience. This contributes to the capacity of vulnerable states to mitigate the deleterious effects of poverty and climate change (Sustainable Blue Economy, 2025). As is apparent, the proposed interpretation serves to expand the boundaries of the category, incorporating not only the management of oceanic activities but also the resolution of other pressing issues, including social inclusion.

The conducted analysis yielded an explanation for these discrepancies in positions: the aforementioned definitions reflect, in one way or another, the statutory tasks of each organisation. The focus of some entities is on the resolution of issues that emerge within the world's oceans or along its coastlines. Conversely, institutions such as the Center for the Blue Economy at the Middlebury Institute of International Studies at Monterey (USA) focus on the economic aspects of managing oceanic resources and those located in coastal areas.

In a similar manner, the authors of academic content position themselves in relation to the Blue Economy. It is important to acknowledge the work of (Fudge, Ogier, Alexander, 2023) and their colleagues, who share a similar perspective. These researchers contend that the Blue Economy agenda is susceptible to criticism due to its apparent disregard for factors related to equity and well-being. The argument is posited that this phenomenon occurs due to the limited comprehension of the correlation between marine areas, adjacent land areas, and human wealth.

Lee K.-H., Noh J., and Khim J.S. (2020) draw attention to the dense interweaving of views on the

Blue Economy: since the BE concept is rooted in several different disciplines (including geoeconomics, politics, economics, social and cultural studies), ideas for its further development cross national borders. Turning points in this field have been shown to create a sense of urgency for a reassessment of marine biological and economic relations on a worldwide scale. As demonstrated, the notion of the Blue Economy has attained a level of organisation, whereby it is regarded as a coherent system of perspectives on a specific phenomenon, and a method of interpreting and comprehending it.

To summarise the content analysis, the part of which is included in this article, agreement is expressed with the experts from The London School of Economics and Political Science that the term "Blue Economy" is not universally accepted, nor is it clear what it means (What is the blue economy? 2024). Concurrently, the establishment of a shared understanding is of paramount importance to avoid miscommunication, metaphorically akin to a deaf person attempting to communicate with a mute.

It is important to note that the course of academic discussions may be disregarded if the limited participation of coastal territorial communities in mobilising the potential of the Blue Economy to expand the arsenal of means to improve their existence was not taken into consideration. This phenomenon, as posited by Esin, Okon, and Okore (2025), can be attributed to the prevailing perception of the "Blue Economy" as encompassing domains such as industrial fishing, seafood production, seaweed harvesting, mariculture, maritime freight and passenger transport, and mineral extraction.

2. "Economy" as a Key Unifying Category

The present study will commence with the clarification of the content of a category that appears to be well-known. This term is frequently encountered in a variety of interpretations and contexts. However, it is of interest to the present study as it constitutes a defining element of each of the phrases that have become the focus of this investigation (Figure 1).

The fundamental hypothesis underlying the proposed scheme asserts the abstract and de facto interconnectedness of the categories "marine economy" and "blue economy". The opportunity to verify this further will be available.

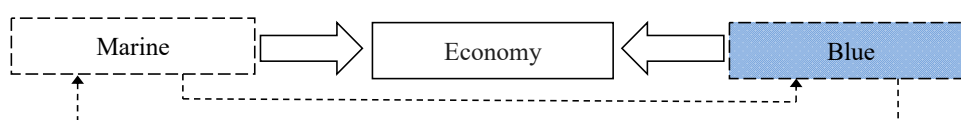


Figure 1. The unifying mission of the "economy" category

Source: compiled by the authors

It is an established fact that, within the context of university courses, the economy is conceptualised as a system in which producers of goods are accorded a designated role. On a daily basis, proprietors and administrators contemplate the location and utilisation of limited resources, which are employed in the production of goods and the provision of services. These resources are regarded as scarce due to the perpetual growth in demand, which outstrips the supply of minerals, metals, fossil fuels, fertile land and drinking water. The quantity of these elements on Earth is finite. A further issue to be addressed is that a proportion of these remain either undiscovered, inaccessible, or depleted.

In the event of abstraction from details that are deemed to be of negligible significance, it becomes evident that the preponderance of economic resources, with regard to their provenance, is situated on land or within the confines of the world's oceans. The notion of land as a comfortable environment for humans is one that is widely accepted. Consequently, for centuries, the region has been the site of intensive extraction of all necessary components for value production. From 1900 to 2015, the global extraction of various materials increased by 14 times (from 6 billion tons in 1990 to approximately 84 billion tons in 2015) and it is projected that this will increase by 119% by 2050, reaching approximately 184 billion tons. Since 1980, raw material consumption has doubled, primarily due to the significant extraction of non-metallic minerals (Developments and Forecasts, 2018). Consequently, the United Nations has asserted that inexpensive and superior sources of certain critical materials, including oil, copper, and gold, are becoming depleted. Consequently, their production necessitates an escalating demand for fossil fuels and fresh water (Fischer-Kowalski, Swilling, and others, 2011). Assuming that extraction rates of scarce mineral resources (antimony, molybdenum, zinc) will increase, it is estimated that their reserves will be depleted within a few decades, at most a century.

Moreover, for a considerable period, businesses placed exclusive emphasis on enhancing production efficiency, neglecting to consider its environmental and social ramifications. In response to this phenomenon, the public, governments, and concerned scientists have advocated for the establishment of a "green economy," which establishes novel priorities: namely, the safe, sustainable, and cyclical production of goods and services. This issue was given particular emphasis in the "Global Resources Outlook 2024" (UNEP, 2024). The term itself was first introduced in a report for the UK government (1989) by leading environmental economists (Pearce, Markandya, Barbier, 1989). The term "green" in this context signifies a commitment to achieving climate neutrality, optimising resource utilisation, and leveraging the creative potential of

employees while ensuring the continuity of economic growth rates.

The choice of colour was likely not an accident, as the proclaimed economic paradigm was metaphorically associated by both the authors and the public with the green leaves of trees in forests and parks, grass on suburban lawns, and stems of agricultural plants. It is evident that all of these images are of a terrestrial nature. However appealing such enterprises may appear, the notion of categorising coal mines, metallurgical enterprises, or those engaged in the manufacture of wooden furniture as constituents of the "green economy" remained unconsidered.

3. The Marine Economy

As humanity's resources on land became increasingly limited, its focus shifted towards the exploration and exploitation of the world's oceans. The progression into its depths and expanses was marked by an escalating acceleration. As time passed, a wide array of economic activities came to the fore, leading to the emergence of the "marine economy" or, in a more expansive context, the "ocean economy" (Figure 2).

In the context of this article, the "coastal economy" is understood to be a constituent element of the terrestrial economy, despite its evident close connection with both preceding economic systems. The "maritime economy," as understood by the present author and in accordance with the views of Stopford (2009), refers to economic activities related to maritime transport logistics, namely the handling of cargo in ports and its subsequent transportation from shippers to receivers.

It is important to note that the marine/ocean economy is regarded as an "economy" despite the search for production resources extending beyond terrestrial boundaries. The fundamental nature of this economic activity remains the generation of products (goods or services) that satisfy human needs. This phenomenon is independent of the geographical proximity of producers to their respective native shores or the extent of their submarine exploration. In China, specialists from the Institute of Deep-sea Science and Engineering told about the "deep-sea economy." They were right, pointing to manganese crusts, massive sulfides and polymetallic nodule deposits, among others, that contain high amounts of nickel, molybdenum, cobalt, copper, lithium and titanium. However, extracting them requires diving to depths of three to six thousand metres and using special technologies to extract the necessary elements.

It is unsurprising that Mr. Trump demonstrated interest in rare earth materials present within the subsoil of Ukraine, given the advanced state of extraction technologies, the ready availability of the necessary equipment, and the economic advantage of

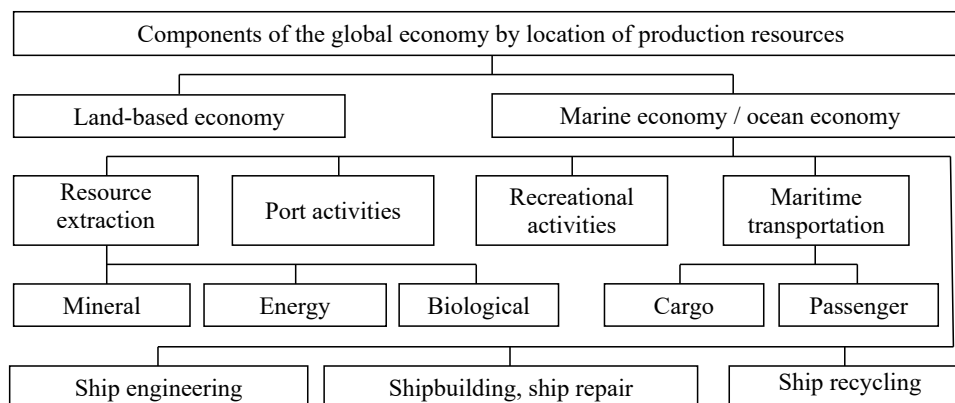


Figure 2. Sectoral structure of the marine/ocean economy

Source: compiled by the authors

extracting these materials from the ground as opposed to their retrieval from the central Pacific Ocean, a practice that could potentially have unpredictable consequences for local ecosystems. While the president's intentions may have been sound on paper, it is evident that he overlooked the geopolitical context, particularly the underlying reasons that precipitated the war.

As demonstrated by the summary of statistical information and specialised reports from competent research organisations, the marine/ocean economy has grown extraordinarily intensively over the past quarter-century. The following discussion will utilise data on its individual segments in order to illustrate the aforementioned points. The initial focus will be on the dynamics of maritime freight volumes, which are of notable magnitude (see Figure 3).

It is evident from the analysis of the data presented in the diagram that the volume of global maritime trade increased more than twofold from 1990 to 2021. This is evidenced by the counting of goods loaded onto more than 50,000 ships worldwide, which ensured the transportation of approximately 90% of all goods produced by their manufacturers. With regard to the magnitude of this market, experts have estimated its

value at USD 371.98 billion in the preceding year. It is anticipated that, should the prevailing annual growth rate (an average of 5.9%) remain unaltered, the predicted value of 496.43 billion USD will be attained in the imminent future, by 2029 (Maritime Freight Transport, 2025).

The maritime tourism market has also demonstrated positive dynamics, encompassing activities such as sailing, diving, and observing wildlife in their natural habitats, in addition to cruise trips. In 2023, the market value of the company was 3.5 billion USD, and it is projected to add another 2.8 billion USD over the next ten years (Market.us, 2024). This surge can be attributed to a number of factors. Firstly, there is an increasing purchasing power of clients seeking new experiences from visiting exotic places on Earth, cultural immersion, and personalised tours tailored to the unique needs of customers.

Conversely, the cruise companies' marketing policies are characterised by flexibility and innovation, aligning with the expectations of their target audience and offering a unique value proposition that distinguishes them from competitors. This encompasses the continuous enhancement of the comfort experienced by passengers, the meticulous construction undertaken

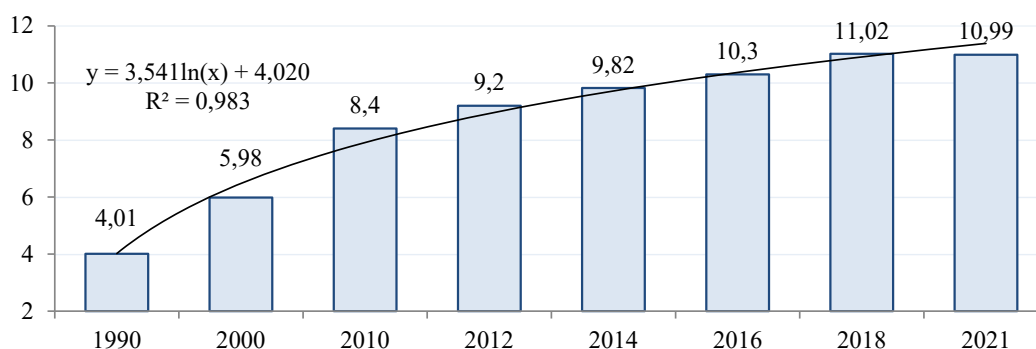


Figure 3. Volumes of maritime cargo transportation, billion loaded tons

Source: compiled by the authors on the basis of data from (Transport, 2023)

by shipyards, their technical and technological prowess, and consequently, the refined service provided to travellers. The results of the convergence of supply and demand can be observed in Figure 4.

It was decided that a deliberate decision was made to bypass part of the retrospective that had been marked by the force majeure caused by the COVID-19 pandemic. At the same time, the lifting of government restrictions related to it led to an obvious surge in demand for cruise travel. Over the entire observation period, the number of those seeking such trips increased by 206 percent, maintaining, as can be seen, an upward trend.

Irrespective of the nature of the marine economic activity under discussion, it is impossible to envisage it without vessels that are suitable for the purpose. The global fleet is replenished on an annual basis with novel engineering structures capable of solving ever-new tasks related to the exploitation of the world's ocean resources. These structures are the result of

the efforts of engineering companies, shipyards, and related enterprises. They are designed to maximise productivity and increase safety for crews, other vessels, and the global ocean ecosystem (see Table 1).

The statistical data and calculations provided are unequivocal. From 2005 to 2022, the aggregate number of vessels in the fleets of their owners increased by almost 70%, while the number of bulk carriers, gas tankers, ro-ro cargo ships, and service ships doubled or even tripled (other tankers). It is imperative to recognise the significance of these findings, which indicate that a comprehensive analysis of the shipbuilding market can yield invaluable insights regarding the most pressing priorities for the advancement of the marine economy. The corresponding monitoring constitutes a component of macroenvironment marketing research, the results of which should prove beneficial to management and business owners when formulating strategies for dealing with partners in highly competitive industries.

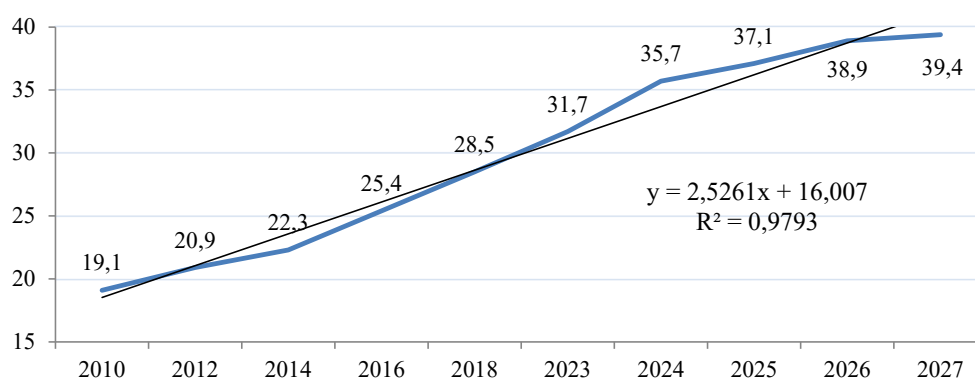


Figure 4. Number of passengers on ocean cruises worldwide, million people

Source: compiled by the authors on the basis of data from (Number of ocean cruise, 2024)

Table 1

World fleet: total number of ships, by type

Vessel type	Year			Index, %		
	2005	2015	2022	2005	2015	2022
Bulk carriers	6321	11289	13220	100	179	209
Container ships	2996	5174	5736	100	173	191
Gas carriers	1080	1807	2310	100	167	214
Bulk carriers	15869	16318	16574	100	103	104
Offshore vessels	3692	8232	8409	100	223	228
Oil and chemical tankers	9130	12721	14616	100	139	160
Other tankers	350	863	1240	100	247	354
Passenger ships	5771	6741	7866	100	117	136
Cargo ships of the "roll-on/roll-off" type	1384	1489	2966	100	108	214
Service vessels	3723	4938	7657	100	133	206
Specialised cargo ships	192	287	367	100	149	191
Tugboats	10061	17374	20050	100	173	199
Total	60569	87206	101011	100	144	167

Source: calculated by the authors using (The world merchant fleet, 2005, 2015, 2022)

In order to corroborate this hypothesis, it is necessary to examine the data provided by the international certification and classification society Det Norske Veritas. According to this data, by the year 2050, the offshore wind industry will be responsible for 50% of all investments in the ocean economy. By this time, the energy generated by its wind farms will approximate that currently produced by offshore oil platforms. However, extraction is projected to decrease by 51% compared to 2019 (Det Norske Veritas, 2025). The subsequent step is to correlate this forecast with the 228% increase in offshore vessels over the observation period. This is only the case until 2022. Consequently, the statistics are closely monitored, as it is anticipated that they will provide new arguments in favour of the aforementioned position.

Furthermore, it is imperative to acknowledge the regional dimension of the issue at hand. The present study will utilise data provided by the Center for the Blue Economy at the Middlebury Institute of International Studies at Monterey (USA). Its analysts have asserted that the ocean economy constitutes the majority of the US GDP, surpassing agriculture and forestry, food production, and oil and gas extraction. This sector generates an annual revenue exceeding 359 billion USD and provides employment for a substantial workforce of three million individuals (CBE History, 2024).

It is evident that analogous occurrences are transpiring within the European Union, China, Japan, and other maritime nations. Concurrently, it is asserted that the extant discourse has adequately addressed the essence of the "marine economy" – a term denoting a set of economic activities that seek to produce goods to satisfy human needs by utilising resources situated within the world's oceans. The subsequent stage of the exploration process is now underway, with the objective of achieving the desired result.

3. Blue Economy

In the course of the present study's review of a number of publications and reports on the subject of this research, a number of individuals who expressed views similar to the present authors' own were encountered in the Nigerian Federal Ministry of Marine and Blue Economy. According to the Federal Ministry (2025), the mission of the organisation is to ensure the responsible use of marine resources, with a view to enriching the lives of the country's citizens and preserving the natural beauty of coastal ecosystems. It is evident that the two missions in question are independent of one another, yet they are also closely integrated. The following discourse will seek to elucidate the underlying reasons for this phenomenon.

Firstly, it must be acknowledged that for a considerable period, the utilisation of terrestrial resources by "intelligent" humans, as well as the resources of the World Ocean, has been indiscriminate and overtly predatory. This phenomenon can be likened to the primitive era, characterised by an economy of appropriation that encompassed all that was visible. Consequently, a significant number of species of biota were destroyed or faced the threat of extinction. In this context, it is important to recall the Steller's sea cow, Atlantic cod, and Pacific jack mackerel. For a comprehensive overview of the subject, please refer to the Red List of Threatened Species, a compendium of species at risk that is maintained by the International Union for Conservation of Nature. It is imperative to acknowledge the necessity of resource renewal, particularly those that are approaching depletion, and to proactively cultivate a marine economy focused on reproduction.

Secondly, while the growth in the number of vessels and the volume of maritime cargo transportation is to be admired, it is difficult to ignore their impact on the environment. As stated in the global review prepared by UNCTAD, the shipping industry is responsible for approximately three percent of global greenhouse gas emissions. Furthermore, over the past decade, these emissions have increased by 20 percent. By early 2024, only 14% of new tonnage was ready to use alternative fuels (Review of Maritime, 2024). A salient factor contributing to this phenomenon is the notable age of the fleet, which is increasing (Figure 5). As a vessel ages, it has been demonstrated that it becomes increasingly responsible for the pollution of air and seawater.

The failure to accelerate the process of decarbonisation gives rise to a number of consequences, including increased operational costs for shipping companies, fines imposed by regulatory bodies, and most importantly, loss of competitive positions in the market. Consequently, the development of sustainable maritime transport, its integration into prospective supply chains, the advancement of technologies for the utilisation of alternative fuels, the implementation of low-carbon logistics solutions, the conversion of obsolete vessels, and the procurement of energy-efficient ships integrated into contemporary digital systems based on artificial intelligence are not merely one of numerous potential strategies under consideration. This is a vital imperative.

Thirdly, a pivotal aspect of the intricate network of interconnected global supply chains and centres of international maritime trade is constituted by ports. The location of these infrastructure elements in coastal zones, low-lying regions, and river deltas renders them particularly vulnerable to the adverse effects of climate change. This encompasses, *inter alia*, the rise in sea levels, increased frequency and

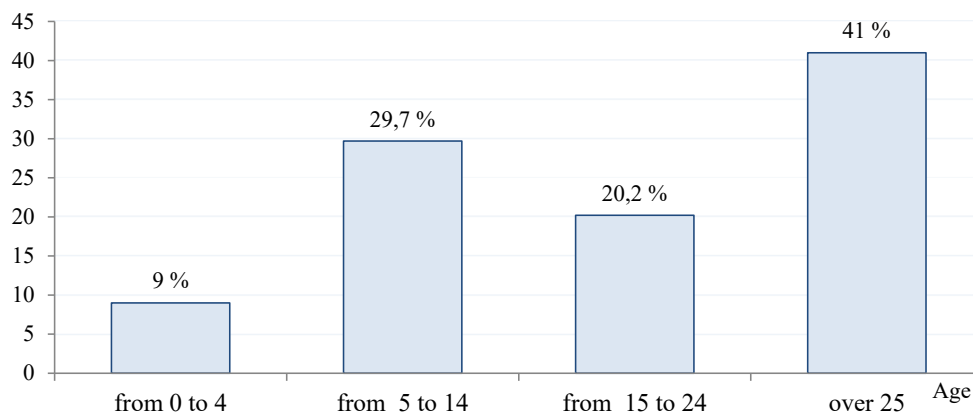


Figure 5. Share of ships by age in the world merchant fleet, %

Source: compiled by the authors on the basis of data from (*The world merchant fleet, 2023*)

intensity of storms, river floods, coastal erosion, siltation of navigation channels, and the destruction of adjacent rail and road networks.

Consequently, the ongoing practice of maritime and oceanic economic activities, as has been customary in recent times, is becoming progressively challenging, if not altogether unfeasible. Significant efforts are required to maintain the pace of value production at a level commensurate with consumer demands, whilst concomitantly mitigating and halting negative impacts on the environment. This transition is characterised by a shift from green, representing the terrestrial economy, to blue, signifying the marine/ocean economy. The objective of the programme is to ensure the sustainable development of humanity.

It should be noted that the present author and colleagues do not claim to be the first to call for changes. The "blue economy" model is attributed to the Belgian entrepreneur, economist and author Pauli G., who published the book "The Blue Economy: 10 Years, 100 Innovations, 100 Million Jobs" in

2010 (Pauli G., 2010). The proposed concept under discussion deviates from the "green economy" in its initial interpretation by calling for a comprehensive approach to the coexistence of nature and business, rather than being limited solely to the issues of reducing pollution of natural ecosystems.

Concerning the issue of the colour, the author subscribed to the perspective that Gaia (the goddess of Earth in Greek mythology) "is not green. She is as blue as can be". It is an irrefutable fact that any individual who has observed the Earth from an extraterrestrial vantage point, whether through photographic documentation or direct observation, is compelled to concur with this assertion. Concurrently, the academic and political communities have expressed appreciation for the proposal, albeit from their respective vantage points. The resulting image proved so compelling that it gradually permeated the marine economy, leading to their gradual emergence as synonyms, albeit with suitable clarifications and explanations. The practical application of the

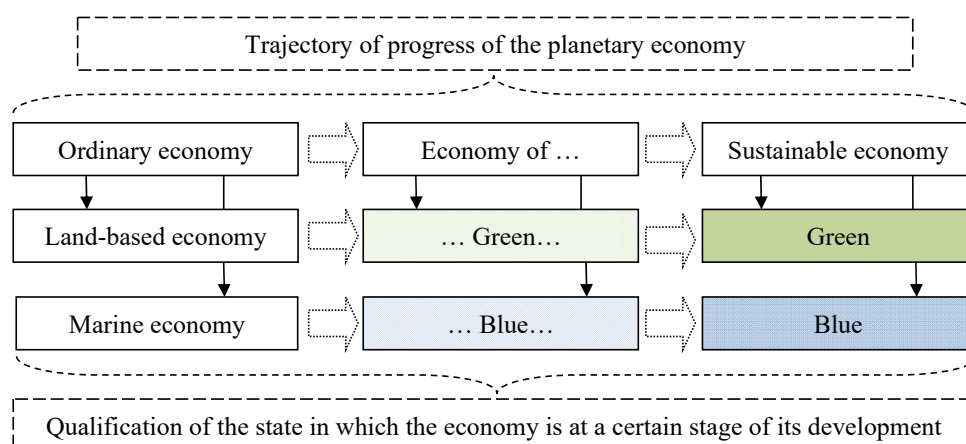


Figure 6. Stages of development of the planetary economy from ordinary to sustainable

Source: compiled by the authors

relevant terminology is demonstrated in Figure 6. The following discussion will outline the attractive features of this graphical model:

1. The utilisation of compliance indicators, which are currently under development by governments, classification societies, international organisations, regulatory bodies, and management, facilitates the determination of enterprises' position during the gradual transition of the economy from ordinary to sustainable.

2. The findings of such analyses are then used by stakeholders to determine national and international policies, institutional frameworks, strategies, and to formulate regional plans and programmes, as well as corporate projects that are aimed at improving business processes and positively changing the situation in the marine economy. The objective is to approximate the aforementioned criteria as closely as possible.

3. It is evident that associations of producers, government institutions, and coastal city administrations have the capacity to implement methods of financial and moral motivation for teams that have demonstrated commitment and achieved desired goals regarding the further transformation of technologies, production organisation, and management methods. These endeavours have the potential to avert the degradation of marine ecosystems and conserve their biodiversity.

5. Conclusions

The growth of the human population on the planet, coupled with the diversification and modernisation of its needs, has resulted in the intensive extraction of natural resources. Initially, this phenomenon occurred on land; however, over time, it also began to manifest in the World Ocean. As time passed, a variety of economic activities

emerged and evolved, and it was the synergistic interplay of these activities, amplified by the effects of globalisation, that ultimately delineated the fundamental characteristics of the contemporary economy. The attitude of producers towards the natural sources of the raw materials they required was not characterised by respect. The technologies initiated were also far from being economical. The overarching priority for efficiency was profit, rather than the "price" at which it would be obtained. Consequently, the surrounding world was distorted to such an extent by seemingly intelligent people that they began to suffer from the consequences of their imprudent work.

The scientific community was the first to raise the alarm, with this being followed by the intervention of international and public organisations. In concert, these entities succeeded in directing the attention of governments to the issue at hand. Concurrently, there was a necessity to delineate the trajectory of economic progress and qualify the states in which various businesses were. The extensive involvement of a multitude of stakeholders in the process of rethinking strategies for further reforming value chains resulted in terminological uncertainty. This, in turn, resulted in a certain degree of misunderstanding between the policy-formulating and policy-implementing communities.

The proposals set forth by the authors of this article are intended to address the disparities that have emerged. It is our opinion that they have the capacity to facilitate a harmonisation of stakeholders' comprehension of the prevailing circumstances, in addition to efficaciously integrating their endeavours in the course of the transformation of terrestrial and marine economy enterprises into entities that renew their business processes on the basis of sustainability principles.

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Received on: 05th of February, 2025

Accepted on: 10th of March, 2025

Published on: 31th of March, 2025