

Dotting the I's and crossing the T's on the fifty shades of blue economy: an urgent step to address the UN Ocean Decade

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ABSTRACT

The growing relevance of the seas and the ocean in terms of economic, geopolitical and governance is reflected in the increase and diversification of scientific publications on the subject, as well as in the global agenda. Within the United Nations (UN) scope, the 2030 Agenda (2016-2030), its 17 Sustainable Development Goals (SDGs), and the recent Decade of Ocean Science for the Sustainable Development (2021-2030) highlight the international effort in favor of knowledge, preservation, and sustainable exploitation of these resources. However, there is a vast and recent economic literature on the subject, which is confused and often contradictory, negatively affecting the international debate and policymaking. Therefore, the purpose of this article is to dot the I's and cross the T's on this literature, which frequently uses a wide nuance of terms as synonyms, such as blue economy, marine economy, maritime economics, ocean economy, economy of the sea, blue growth, coastal economy, and maritime cluster. Thus, it is necessary to explain the differences between these "fifty shades of blue" economy concepts, specifically because of the relevance of the topic in the Decade of Ocean Science, which often seems limited and misunderstood. To this end, the article performs a bibliometric approach based on 1,351 publications from Scopus and WoS databases, covering the 1959-2020 period, followed by a systematic review. We use the Bibliometrix package in RStudio (v. 3.6.3) to investigate metadata and Biblioshiny as a tool for data analysis. Among our main results, stand out: (i) the progress of the discussion over time; (ii) the expansion of the themes and actors involved in this agenda; and (iii) the main issues and trend topics associated with the different concepts. Since 2012, blue economy has been the most used concept due to the Rio+20 UN Conference on Sustainable Development. Given the current situation of the COVID-19 pandemic, understanding the relevance of the blue economy is an urgent step to promote anti-cyclical economic policies and to address the UN Ocean Decade, particularly in the Global South.

Descriptors: Blue economy, economy of the sea, 2030 Agenda, UN Ocean Decade, Global South.

INTRODUCTION

When it comes to the seas and ocean agenda, there is a wide and diverse range of publications of scientific articles and technical reports dealing with different issues and approaches (Lee, Noh and Khim, 2020), especially in the last fifty years. There are consolidated contributions mainly from biological

sciences and oceanography, however it is possible to argue that the 21st century witnesses an increase in the number of publications on the subject and the contribution of other sciences and knowledge (Kaczynski, 2011). In this context, economic science starts to study its social and economic relevance in a broader perspective (Santos, 2019), as well as other areas that highlight its role, such as law, international relations, cultural and gender studies. Traditionally, Economics used to consider the ocean particularly regarding to international maritime transport and fishing.

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Driven by cyclical inputs in the present century, this ocean concern gains momentum particularly due to the 2030 Agenda, its 17 Sustainable Development Goals (SDGs), and the Decade of Ocean Science for the Sustainable Development, both promoted by the United Nations (UN) (Lee, Noh and Khim, 2020; Ntona and Morgera, 2018; Virto, 2018). The 2030 Agenda (2016-2030) was established in 2015 and proposes a bold long-term global plan to tackle different themes (UN, 2016), such as poverty (SDG1), hunger (SDG2), good health (SDG3), quality education (SDG4), gender equality (SDG5), clean water and sanitation (SDG6), affordable and clean energy (SDG7), decent work and economic growth (SDG8), industry, innovation and infrastructure (SDG9), reduced inequalities (SDG10), sustainable cities and communities (SDG11), responsible consumption and production (SDG12), climate action (SDG13), life below water (SDG14), life on land (SDG15), peace, justice and strong institutions (SDG16) and partnerships for the goals (SDG17) (UN, 2015). However, even though the ocean agenda is often and almost exclusively associated with SDG14, this article argues that it is a broader and transversal to other SDGs (Santos, 2020). Given that the Ocean Decade is very much guided by and dialogued with the 2030 Agenda, this argument overflows into the ocean policies proposed until 2030, which is why understanding exactly what the blue economy agenda is all about is paramount and therefore the main objective of this article.

The UN Ocean Decade (2021-2030) was established in 2017 and presents 7 main outcomes (UN, 2017), such as clean ocean (pollution), healthy and resilient ocean (mapping and protecting marine system), predictable ocean (understanding current and future ocean conditions), safe ocean (ocean hazards), sustainably harvested ocean (ensuring food supply), transparent ocean (open access data, information, and technologies) and inspiring and engaging ocean (valuing the ocean). In a nutshell, the decade defends “the science we need for the ocean we want”, wishing to define pathways for sustainable development (IOC-Unesco, 2020). Among its 10 challenges, stand out understanding and beating marine pollution, protecting, and restoring ecosystems and biodiversity, developing a sustainable and equitable ocean economy, and unlocking ocean-based solutions to climate change. Thus, the relevance of the economic approach in this agenda is clear, which reinforces

once again the need to better understand what it is about to start the decade with conceptual, methodological, ontological, and policy clarity. In fact, it is worth noting that the cross-cutting relationship of the blue economy with various SDGs is not always clear, even to experts on the subject; actually, when it comes to the 2030 Agenda, ocean and seas agenda are usually associated exclusively with SDG14.

Both the 2030 Agenda and the UN Ocean Decade mobilized and continue to mobilize different stakeholders through dialogue, meetings, and joint research, at the national, regional, and global levels. Stand out the UN entities and intergovernmental organizations, public and private initiatives, civil society and NGOs, youth, and early career ocean professionals, as well as media and local and indigenous knowledge holders. Indeed, another purpose of this article is precisely to contribute to this debate. This is because there is no mutual understanding or common sense on what the blue economy is after all, despite being transversal to many goals and outcomes expected by the two agendas. In fact, it often turns out to be a catch-all concept, without any real or precise meaning, even though it is mandatory to be mentioned. Dealing precisely with this confusion is the main goal of this research.

Seeking to dot the I's and cross the T's on the issue, this article proposes to present the different concepts used by academics and practitioners, explaining their differences from a bibliometric literature review – following Martínez-Vázquez, Milán-García and Valenciano (2021), Madeira (2020) and Costa and Caldeira (2018). Given the diversity of approaches to the issue, such as blue economy, marine economy, maritime economics, ocean economy, economy of the sea, blue growth, coastal economy, and maritime cluster, we argue that there are “fifty shades of blue” (economy), following Vieira, Leal and Calado's (2020) argument. Since there is no consensus in the literature, not even about the meaning of each of these concepts (Santos, 2020; Keen, Schwarz and Wini-Simeon, 2018), this calls to an urgent move towards a better understanding of the role of the ocean to properly address the ongoing UN Ocean Decade.

Particularly regarding the Global South, this debate has an additional impetus, including due to its data gap (IOC-Unesco, 2019). As a complex and questionable concept, the “Global South” has been used very often by intergovernmental development organizations and does not necessarily cover all countries below the Equator. It

is often used as an interchangeable term for developing, underdeveloped, third world, periphery, and low-income countries. By generally contemplating Latin America, Africa, Asia, and part of Oceania (Dados and Connell, 2012), the concept encompasses key countries when it comes to the blue economy.

Figure 1 shows that a significant portion of the largest seas and oceans are found in the Global South, which can be understood as a zone of peace and cooperation, as in the case of the South Atlantic (Abdenur, Mattheis and Seabra, 2016), or as a maritime bridge between the North and the South, as in the case of the EU-Africa relation (Rodríguez, Santos and Silva, 2020). Despite this change in perspective and the evident relevance of the sea and ocean in the socioeconomic and cultural development of these countries, this article contributes in a broad way to both perceptions of the north and the global south, insofar as it proposes to explain a concept widely and increasingly used worldwide.

In addition, it should be noted that the countries of the Global South have been and continue to be strongly affected by the pandemic of the new coronavirus (COVID-19) in 2020 and 2021. For this reason, fully understanding the potentials associated with the promotion of the blue economy, whether in terms of economic growth or in terms of the generation of employment and income, is particularly important for these countries. In many cases, it will constitute a significant portion of the post-COVID-19 economic recovery, especially given the high capillarity of the sectors of the economy of the sea in certain countries - such as Brazil and the United States.

METHODS

Bibliometric research is currently based on quantitative and statistical methods, and its principles have been refined throughout the 20th century. With the support of computers and the internet, scientific citation indexes, the evolution of information science and its technologies, and the impact factor concept itself, mapping and analyzing the global production of different areas of knowledge became feasible. Therefore, bibliometrics is very useful both for academia and for the formulation of public policies (Tsai et al., 2020).

The most widely used databases are usually Scopus, Web of Science (WoS) and Google Scholar (Wang, Lim and Lyons 2019). However, as the latter has a more fragile quality control (Camarasa et al., 2019), this article used only the first two databases, following Madeira (2020), Costa and Caldeira (2018) and Manikarachchi (2018). "Bibliometry offers useful results from the authors' production in a field of research, trends, the most cited articles, and the concentration of documents in impact journals" (Junquera and Mitre, 2007 apud Martínez-Vázquez, Milán-García and Valenciano, 2021).

Thus, this article first carries out a survey to identify the most appropriate keywords to make the analyses possible (Durach, Kembro and Wieland, 2017). As these concepts are often treated as synonyms and consequently interchangeable, the research performed the search for keywords at once and together. The objective was precisely to map which themes, concepts, and discussions (through associated words) are linked to each of the keywords initially researched. Consequently,



Figure 1. Countries referred to as The Global South.

it performs boolean operations to make the following search strings (Shoab, Lim and Wang, 2020) initially based on a cluster of words in Scopus and WoS databases. Table 1 shows the main characteristics of the bibliometric search, starting with Fisher and Kon's (1959) article, in line with the aforementioned initial and predominant focus on biological analysis.

The Bibliometrix package is used to investigate metadata, then Biblioshiny (Kaffash, Nguyen and Zhu, 2021) is used as a tool for data analysis, limiting the search to publications in English. The following three questions will be analyzed: (1) What is the distribution of publications and citations across time and space?; (2) What are the most relevant sources?; and (3) What are the main trending topics?

"R is highly extensible as it uses a functional, object-oriented programming language, and therefore it is relatively easy to automate parsing and create new functions. It is utilized to create graphs for three metrics at different levels: sources, authors, and documents, and analyzing knowledge structures at the conceptual, intellectual and social level" (Aria and Cuccurullo, 2017 apud Martínez-Vázquez, Milán-García and Valenciano, 2021).

BibText results were imported to RStudio (v. 3.6.3) and merged, totaling 1,834 documents. Then, duplicates were removed, resulting in 1,351 records, because Scopus and WoS may map the same documents in different forms, resulting in persistent duplicates (Valderrama-Zurián et al., 2015). Due to scientific strength and quality of metadata, only articles, articles in press, book and books chapters were considered. Thus, the Excel output was imported into Biblioshiny for data analysis (Kaffash, Nguyen and Zhu, 2021).

Next, a systematic literature review was conducted to identify the relevant variables to answer the research questions raised at first. According to Moher et al. (2009),

"systematic reviews and meta-analyses have become increasingly important in health care (...) A systematic review is a review of a clearly formulated question that uses systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyze data from the studies that are included in the review."

Following Lee et al. (2021), "we took a three-step process to conduct a systematic literature review: (1) identification of literature via database; (2) screening of the identified literature to ensure appropriateness for the research purpose of this study; and (3) eligibility assessment in which pre-specified eligibility criteria had to be satisfied being included in the subsequent analysis. These steps are described in detail below."

RESULTS

The results follow the three questions presented and the main results of the Bibliometric research are based on the above criteria. In fact, they are based exclusively on bibliometric research, so it is possible that some relevant academic publications and/or technical reports not covered by the research parameters are not included.

Among the main results, stand out: (i) the progress of the discussion over time (Figure 3); and (ii) the expansion of the themes and actors involved in this agenda (Figure 4). In general, it is evident that the publications are mainly in Europe, North America, and Asia, with special emphasis on the United States (U.S.), China, Australia, and the United Kingdom (UK). Among the most relevant journals that publish on the theme, stand out Marine Policy, Ocean and Coastal Management, and Sustainability.

Although the themes are very transversal to different activities of the economy, Figure 2 shows the

Table 1. Main characteristics of the bibliometric search related to blue economy.

Description	Results
Databases	Scopus and WoS
Research string	"economy of the sea" OR "sea economy" OR "sea economics" OR "economy of the ocean" OR "ocean economy" OR "ocean economics" OR "marine economy" OR "marine economics" OR "maritime economy" OR "maritime economics" OR "maritime cluster" OR "blue economy" OR "blue growth" OR "blue finance" OR "ocean finance" OR "blue amazon" OR "ocean governance"
Coverage period	1959-2020*
Sources	537
Documents	1,351: article (87.05%), article in press (0.07%), book (3.41%), and book chapter (9.47%)

*up to November 5, 2020.

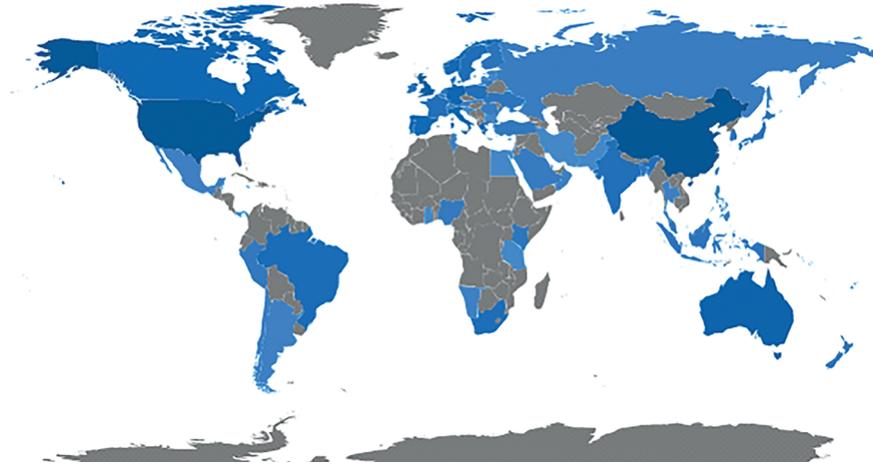


Figure 2. Geographical distribution of scientific production related to the blue economy by country, 1959-2020.

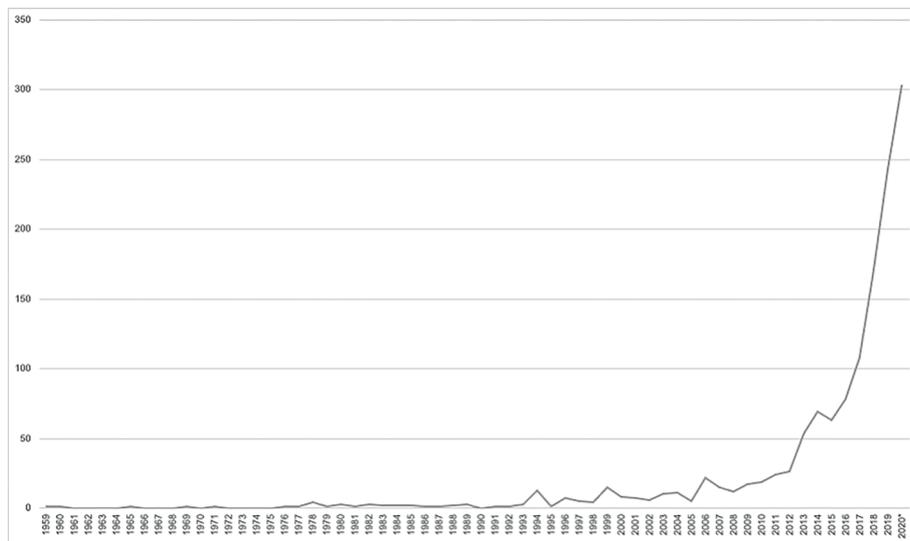


Figure 3. Annual scientific production in Scopus and WoS databases related to the blue economy, 1959-2020.

geographical distribution of country scientific production, covering the 1959-2020 period. Publications are concentrated in the Global North, particularly in: North America (United States and Canada), Europe (United Kingdom, Italy, Spain, Germany, Greece, Norway, and Portugal) and Oceania (Australia and New Zealand). From the Global South perspective, stand out countries from Asia (China, India, Russia, Pakistan, Japan, and Thailand), Latin America (Brazil, Peru, Argentina, Chile, Mexico, Panama, and Jamaica), Africa (South Africa, Kenya, Nigeria, Namibia, Ghana, Tanzania, and Egypt) and the Middle East (Saudi

Arabia, Oman, and Iran). Grey areas indicate countries that did not have any publication retrieved in this study. As presented in the introduction, the Global South plays a key role when it comes to the blue economy agenda, even though there is still room for a more intense activity in this debate internationally – mainly in Latin American and African countries.

Figure 3 shows the evolution of production in the theme over time. The time series can be clearly divided into three periods: (i) 1959-2000, with low production on the topic; (ii) 2001-2010, with a slight increase in production; and (iii) 2010-onward, with

exponential growth in publications on the subject especially after the Rio+20 (2012). The last decade was responsible for 84.2% of publications in the area, highlighting the growing relevance of the seas and oceans agenda in recent years.

As will be seen in the following figure, the first two periods concentrated a rather limited debate in terms of actors, agendas, and sciences. After the Rio+20 event, the UN publishes a report on the blue economy and then the concept not only becomes more widely adopted in the literature and by international organizations, but is no longer a discussion ground just for the biological, natural, and earth sciences.

Figure 4 shows trend topics based on keywords plus covering the period 1994-2020, when the volume of publications on the issue increases in terms of quantity. The choice of keywords plus is justified because it maps in a more appropriate way the reference base of the publications considered in the research. In line with the other analyses, it is clear its increase in frequency from 2010, precisely from 2012.

In the second half of the 1990s, management and planning discussions stood out, many of them focused on the United States (U.S.).

“The U.S. government began investigating the role of the ocean in the national economy in 1974. Periodic research papers covered the topic until the National Ocean Economics

Program [NOEP] began in 2001 with the goal of creating a temporally and spatially consistent measurement of the ocean economy for the U.S. This data became available in prototype format in 2001 and became an official publication of the Federal Government in 2007 as the Economics National Ocean Watch (ENOW) data series. It has been updated regularly ever since. Data in this series includes establishments, employment, wages paid, and gross value added” (GEM, 2021).

In the first decade of the 2000s, discussions on ship design, shipbuilding, freight transportation, and ports and harbors led the debate. Pauli (2010) proposed a model based on technological innovation (Martínez-Vázquez, Milán-García and Valenciano, 2021). At this time, the economic literature was very much focused on what is known today as “maritime economics,” focused on maritime infrastructure, shipping, and insurance, so that the debate on efficiency, management, and innovation were at the forefront of the discussion.

In the second decade of the 2000s, the agenda seems to expand as it considers international cooperation, ocean policy, societies, and institutions. It is then noticeable that this agenda is progressively expanding, not only in terms of actors, but also in terms of topics covered. This progressive and continuous

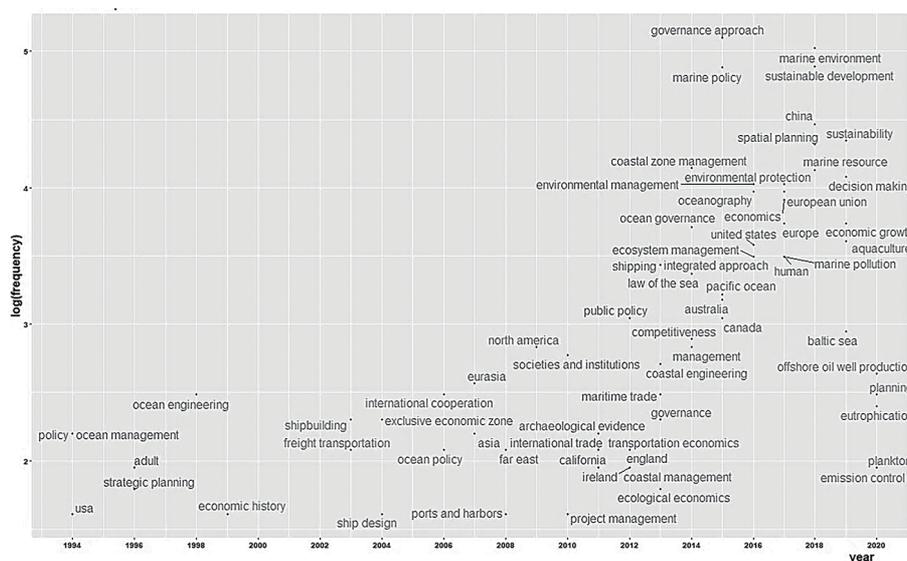


Figure 4. Trend topics related to the blue economy based on keywords plus, 1994-2020.

movement was responsible for the broader realization of the following period that the economic discussion about seas and ocean could not be limited to the approaches and methodologies of economic science; rather, it should increasingly consider and dialogue with international politics, regional/global governance, and climate change.

More recently, the 2010s decade witnessed an increase in themes, actors, and their frequency. Unlike previous temporal analyses, it is difficult to identify the discussion (and its nature) that leads the period, since different terms indicate distinct issues and agendas. The discussion now covers economic growth, public policies, resource scarcity, climate change and pollution, as well as actors and institutions. Paradoxically, what is noticeable in the 2030 Agenda and in the UN Ocean Decade is that when mentioning seas and ocean in both agendas there is almost exclusive mention of SDG14, which in turn is very much focused on the biological and marine perspective.

Among the most frequent keywords related to the research, stand out many concepts that are often considered as synonyms, such as blue economy, maritime economy, marine economy, economy of the sea, blue growth, and ocean economy/governance. This is the reason why this article plays with the idea of “fifty shades of blue” economy, given the fact that they do not mean the same. This article plays with the idea of “shades”, proposing that they are more than mere nuances of perfectly interchangeable terms; they are actually concepts, thus fully imbricated with particular ideas, actions, and perceptions.

More recently, sustainable development, sustainability, and climate change stand out as key issues when it comes to the economic analysis of the seas and ocean, reinforcing the strong relationship of the agenda with the sustainable exploitation of resources. Some economic sectors also stand out, such as fisheries, aquaculture, and tourism. According to OECD (2016), these sectors are key to the future of “ocean economy” (as the institution calls this potential) particularly when it comes to the generation of employment and income. Finally, the focus on the management of these resources, presented through the term marine spatial planning, is no less important – making a parallel with the initial approach to the theme, very present in the 1990s. Precisely because

of the wide scope of the discussion, the following paragraphs will objectively summarize a conceptual proposal for each of the concepts related to the blue economy.

“Blue economy” appears mainly from 2012, precisely after the Rio+20 United Nations Conference on Sustainable Development (Patil et al., 2016, UN, 2012), thus the number of publications with this keyword significantly increased since then. Since the blue economy can be understood as a spin-off of the green economy concept, Santos and Carvalho (2020), Ido and Shimrit (2015), Arieff (2008) and Seele (2007) argue that “blue is the new green”. Despite the term blue “economy”, it is evident that it has a close interface with social and environmental issues and is not just limited to economic issues. In this way, it is possible to understand such a close relationship with the concept of sustainable development. Addressing social issues, education, science, and innovation end up playing a key role in this matter; addressing environmental issues, climate change and sustainable exploitation of resources are also essential; finally, addressing economic issues, topics such as employment, wages, gross domestic product (GDP) and gross value added (GVA) are also fundamental (Santos, 2021).

“Marine” tends to consider only the activities from/of the sea, while “maritime” usually takes into account a wider spectrum of activities related to the sea (Kronfeld-Goharani, 2018), particularly issues associated with shipping and innovation. However, there are heterogeneous and different definitions of marine economy, making it difficult to compare it internationally (Surís-Regueiro et al., 2013).

“Economy of the sea” and “sea economy” led the discussion in the 1970s and 1980s, while the term “ocean” is most often used with “governance” and has a broader nature (Santos, 2020). Despite this, it is worth mentioning that from a conceptual point of view Brazil still does not have an official definition to deal with this agenda. However, in July 2020, the Technical Group (GT) “GDP of the Sea” was created under the coordination of the Ministry of Economy, which has adopted the concept of “economy of the sea” in the national context. The GT has the following objectives: “To define the concept of economy of the sea for Brazil; to identify its sectors and activities; to elaborate a methodology proposal to measure

Brazil's GDP of the Sea; and to present a suggestion for the consequent institutionalization." Therefore, the country is adopting the concept of "economy of the sea" and, within the scope of this GT, is currently discussing ways of measuring and defining which sectors will be contemplated in the "GDP of the Sea", fully or partially (Santos, 2021).

Despite the conceptual review, it is necessary to make it clear that the literature reflects the confusion about these concepts. The same term ends up presenting different explanations, hindering a more accurate conceptualization. Besides, due to the inappropriate or even wrong use of them, bibliometric or even bibliographic research may not capture the totality of articles that actually consider the topic in question. However, considering more than a thousand of articles in the area, the objective of this section was to briefly link the main agendas associated with each of the concepts, in order to facilitate their differentiation. As soon as different international policymakers understand the real meaning of each of these concepts, which in turn involve a diversity of policies, sectors, and actors, it will be easier to commit to the results and goals of both the 2030 Agenda and the UN Ocean Decade.

DISCUSSION

This section seeks to summarize the key issues related to the blue economy in the context of the current decade; to present key gaps, challenges, and opportunities; and to bring recommendations. Since this article copes with the UN Ocean Decade from an economic perspective, it focuses on dealing with the economic UN Ocean Decade outcomes and suggests how to face its main challenges. Ergo, blue economy can be understood as an umbrella concept, which is not limited to the contribution or economic methodology, but which has a close relationship with sustainable development. Precisely for this reason, it is important that it is well understood in the context of the 2030 Agenda and the UN Ocean Decade.

As mentioned in the introduction, seas and ocean have never been the subject of intense research in economic science literature. Therefore, there is a lack of methods and analyzes of this sector based on others that already exist. Evaluating the journal of economic literature (JEL) codes, Santos (2019) argues that there is little or no relevance to maritime, marine,

and oceanic issues, which certainly end up appearing in a transversal, marginal and peripheral way in other analyzes. Because the blue economy has interfaces with so many areas and subareas enshrined in economic science and allows studies of different methodological nature, there is no standardized method of classifying academic literature in the economic field in the JEL classification system. Consequently, the studies end up dispersed, making it difficult to consolidate a group of professionals and researchers on the topic. In the JEL system, there is no direct mention of the terms "marine", "maritime", "blue", "river", "sea", "ocean", "coast" or "offshore", for example. In fact, there are even few mentions related to the term "water" - L95 (gas utilities, pipelines, water utilities), Q25 (water), Q53 (air pollution, water pollution, noise, hazardous waste, solid waste, and recycling). It is also because of this complexity of issues that there are many conceptual confusions presented in the previous section, which in turn affects the broader understanding of current global, regional and national agendas dealing with seas and ocean.

Madeira (2020) also analyses top JEL codes of these publications, showing that Q (agriculture and natural resource), O (economic development, innovation, technological growth), C (mathematical and quantitative methods), R (urban, rural, regional, real estate, and transportation economics) and L (industrial organization) stand as the main ones. Considering the same analysis but detailed at two digits, stand out: Q25 (water), Q56 (environment and development, environment and trade, sustainability, environmental accounts and accounting, environmental equity, population growth), Q01 (agriculture), O21 (planning models, planning policy) and O13 (agriculture, natural resources, energy, environment, other primary products). The author shows that among the type of blue resources, stands maritime resources (78%), coastal resources (17%), and other water resources (5%).

Therefore, the discussion of the blue economy should not be limited to the resources of the ocean. In line with this, Santos and Fontes (2020) defended the need to expand the concept of the Brazilian economy of the sea, suggesting also considering the economic activities associated with inland waters. Although the country does not have yet an official definition of the concept, the definition widely used in the country

considers only the economic activities that have direct influence from the sea, including economic activities that do not have the sea as a raw material, but that are carried out in its surroundings, covering only activities carried out exclusively in municipalities facing the sea (Carvalho, 2018).

Costa and Caldeira (2018) also conduct a bibliometric survey of the theme, this time focusing on ocean literacy. They conclude that it is an underrated term in the scientific literature, arguing that the ocean literacy campaign started in 2004, in the U.S., and has still been quantitatively dominated by the country. The U.S., UK, Canada and other European countries stand out in this discussion, which tends to have a national relevance that overflows the public policy debate and top teaching/research, reaching children and young people's education. This shows that the Global South once again has room to further its local, national, and regional policies to promote maritime awareness.

When it comes to the 2030 Agenda and how blue economy is addressed, the focus on the biological and environmental perspective of the SDG14 is quite evident, which also considers the asymmetry between different states in the international system when specifically addressing small island developing states (SIDS) and least developed countries (LDCs) – once again stressing the role of the Global South. Among the sectors covered by the blue economy, the following stand out: defense and (inter)national security; fishing and aquaculture; offshore energies; seabed mining; transport, logistics and maritime infrastructure; shipbuilding and repair; tourism, sport, and leisure; environment and climate (Santos, 2019). Therefore, with national and geopolitical impacts, these sectors encompass much more than just 'marine life' – focus of the SDG14.

That is precisely why this article proposes to think of the seas and ocean 'outside the box' – referring to the SDG14 box – as it limits society's broader perception of the seas/ocean in the 2030 Agenda. Indeed, we are not advocating that the SDGs approach is inadequate or inappropriate to boost UN Ocean Decade results and outcomes, nor is it different from what the world has been doing. However, there is a strong simplification and biological bias when associating the seas and ocean only through SDG14.

Having a close relationship with other SDGs, such as clean energies (SDG7), economic growth (SDG8), industry, innovation, and infrastructure (SDG9), climate change (SDG13), peace, justice, and strong institutions (SDG16) and partnerships for the goals (SDG17), the blue economy contributes to the 2030 Agenda (goals and targets), far beyond SDG14, and to the UN Ocean Decade (outcomes, challenges and actions), far beyond food supply and marine spatial planning (MSP). In fact, when it comes to UN decade actions, "blue economy" is even directly mentioned, although with no further explanations.

Thus, 2021 seems to be a favorable year for the expansion and complexification of the debate on the seas and ocean in the 2030 Agenda, either by the effective beginning of the UN Ocean Decade, or by the postponement of the Ocean Conference. This conference would take place in 2020, in Lisbon, and was initially postponed to 2021 – remaining without a current definition, given the COVID-19 pandemic. Still within the era of the 2030 Agenda, there is then a need to shift this paradigm. This is the call of this article, proposing that the complexity of sectors related to the seas and ocean be properly addressed in terms of policy and governance design.

The economic issue is in fact transversal to both the 2030 Agenda and the UN Ocean Decade, which is why it is essential to be clear about similar concepts, different stakeholders, and related policies. Consequently, it is necessary that the various actors involved in this agenda speak a single language when it comes to real and potential role of the blue economy in the current decade. When among the outcomes of the decade there is "a sustainable harvested and productive ocean ensuring the provision of food supply", we mean that the blue economy can go much further than this.

CONCLUSION

The purpose of this article is fully aligned with the UN Ocean Decade, mainly because it proposes to expand the knowledge and data about the marine/maritime activities. A better understanding of the concept of blue economy is essential to create a common ground for academics and practitioners, so that they speak the same language. By dotting the I's and crossing the T's, this article aimed to explain the

nuances and reduce the existing confusion on a global scale when it comes to the blue economy concept and related policies.

Blue economy has a more in-depth relation to sustainability, governance, and political perspectives, which can be understood as a new development paradigm. Different actors (state, non-state, government agencies, civil society, foundations, universities, research centers, international organizations, and regional development banks), scales (local, national, regional, multilateral, and global), and initiatives (public, private, and PPP) are fundamental to deal in an integrated way with the challenges and sectors associated with the blue economy.

Two key milestones can be identified in this agenda: 2012 and 2021. In 2012, there was a significant increase in publications of scientific articles and reports on the theme, due to the United Nations Conference on Sustainable Development (Rio+20), held in Rio de Janeiro, Brazil. More recently, in 2021 begins the United Nations Decade of Ocean Science for Sustainable Development (2021-2030). Both agendas have placed the seas and the ocean in an unprecedented role in the collective global effort for knowledge, preservation, and sustainable exploitation.

In order to reach “the science we need for the ocean we want”, it is mandatory to define what ocean we want and how economic policies and methodologies may support it. Coping with too many concepts, metrics, and approaches does not help at all. Since among the Decade outcomes, challenges, and actions there are mentions of the economic question, the full understanding of the concept of blue economy seems to be fundamental and mandatory for its success at the end of 2030. Moreover, given the current situation of the COVID-19 pandemic, understanding the relevance of the blue economy in this decade will be key and critical to design countercyclical economic policies, particularly in the countries of the Global South.

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