EU Involvement in the Financing of the Blue Economy

Proczek, Magdalena; Garbarczyk, Marta

Veröffentlichungsversion / Published Version
Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:
Proczek, M., & Garbarczyk, M. (2023). EU Involvement in the Financing of the Blue Economy. *Studia Europejskie - Studies in European Affairs*, *27*(1), 149-161. https://doi.org/10.33067/SE.1.2023.7

DOI: 10.33067/SE.1.2023.7

Magdalena Proczek[★]
Marta Garbarczyk [★★]

EU Involvement in the Financing of the Blue Economy

Abstract

The prospect of implementing the concept of the Blue Economy is currently still at a relatively early stage of achieving its full potential. The purpose of this paper is to present the idea of the ocean economy and selected aspects of its financing, including initiatives undertaken in this area by the European Union. Part I characterises the Blue Economy, part II discusses selected aspects of financing a sustainable ocean economy, and part III analyses the institutional approach, particularly within the EU, to the financing process of this type of economy. The descriptive method was used to conduct this study, and the available literature on and legal acts related to the subject of the article has been analysed. The undertakings made so far, especially by the EU, are impressive and, moreover, are driving global activity towards the sustainable financing of the Blue Economy. It is becoming a fundamental priority to realise the governments' and international organisations' aspirations to make economies independent from excessive carbon emissions, to counteract water degradation, overfishing, and shrinking drinking water resources. In the long term, it is important to develop coherence between the actions of national entities and the sources and methods of international funding. This is in order to develop a mutual, global good of innovative financing of coastal projects for sustainable development.

Keywords: Blue Economy, Ocean Economy, European Union, Climate Neutrality, Blue Bonds, BlueInvest

★ **Magdalena Proczek** – Warsaw School of Economics, e-mail: mprocz@sgh.waw.pl, ORCID ID: 0000-0001-7888-7850.

★★ **Marta Garbarczyk** – Warsaw School of Economics, e-mail: martagarbarczyk.mg@gmail.com, ORCID ID: 0009-0002-6205-2378.

Introduction

Water is the most common substance on Earth, occupying 71% of the planet's surface (Zintegrowana Platforma Edukacyjna, 2023). It is the foundation of life itself, it influences economic growth and constitutes the basis for maintaining healthy ecosystems. Directly and indirectly, e.g., through fisheries, it provides jobs for more than 200 million people worldwide. At the same time, more than 4.2 billion people are deprived of safely-monitored sanitation services, 3 billion lack the basic conditions to wash their hands, and approximately 2.2 billion of the world's population lack working technologies to provide drinking water. Growing populations, increasing rainfall, the overexploitation of carbon dioxide, water-intensive industrial solutions, and lacks of access to running resources make the issue of water one of the culminating threats to sustainable development. Climate change is successively affecting hydrological cycles, making water resources even more unpredictable and, at the same time, increasing the occurrences of droughts and floods. More than 1 billion people living in monsoon basins and another 500 million living in river deltas are at constant risk of disaster (World Bank, 2022).

Since the 1990s, awareness of sustainable initiatives has been growing, initiatives which, in recent years, have proven to be some of the most effective ways to deal with the economic and social challenges that countries around the world have been facing. There is a need for ground-breaking action, tangible decisions, and, most importantly, time is needed to mitigate the negative effects of advancing climate change and unexpected natural disasters, including those affecting oceans and seas. The uncertainty of tomorrow, due to the failures to date to compile and identify the problems that international organisations have to deal with, is becoming a challenge. A World Bank study shows that the effects of climate change seem to be fundamentally underestimated, so it is paramount at this point in time to initiate and finance initiatives that aim to minimise any negative impacts on the environment, including on the oceans and seas (Holsti, 1983, pp. 145–148).

L. Wenhai of the National Marine Data and Information Service in China, C. Cusack of the Marine Institute in Ireland, and M. Baker of the University of Southampton in the UK have conducted research on the Blue Economy. In the article *Successful Blue Economy Examples With an Emphasis on International Perspectives* (Wenhai, Cusack, Baker, 2019), the positive aspects of implementing the Blue Economy from the perspective of international cooperation are pointed out. It is stated that so-called "blue finance" is based on a macroeconomic concept, covering every

aspect of global and national governance. The researchers highlighted the importance of planning and coordinated development between the coastal and ocean economic system and the comprehensive development of marine ecosystems. In contrast, researchers from the University of Wollongong in Australia, namely M. Voyer, G. Quirk, A. Mcllgorm, and K. Azmi have identified the conceptual values and interpretations of the Blue Economy. They have provided examples of marine industries included in or excluded from various conceptualisations. They also highlighted the growing trend towards valuing nature, spatial boundaries in the oceans, and the strengthened securitisation of the world's oceans (Voyer et al., 2018).

The main objective of this paper is to present selected ways of financing the Blue Economy, including initiatives undertaken by the European Union. This paper consists of an introduction, three parts, and a conclusion. Part I presents the idea of the Blue Economy, part II presents selected aspects of financing a sustainable ocean economy, and part III analyses the institutional approach to the development of financing this type of economy. The focus is on the main endeavours for financing the ocean economy. The descriptive method was used to conduct this study, and the dynamisation of ocean economy in financial terms was analysed. The aspect of expanding environmental safeguards through restraining carbon emissions was also taken into consideration.

The Characterisation of the Blue Economy

As early as 2007, a report by the United Nations agency showed the undeniable impact of human activity on the increase of global warming. In the same year, a group of pension funds approached the World Bank for the first time to help finance a project that favoured the environment. The idea proved to be a breakthrough in a collaboration of development experts, scientists, investors, and policy makers. Ultimately, it has been recognised as a cornerstone in the search for a solution to environmental problems and the deepening of cooperation between banks, development agencies, rating agencies, and investors as regards nature conservation.

The United Nations Conference on Sustainable Development, held in Rio de Janeiro in 2012, among other things defined the Blue Economy as an ocean economy. At the time, improving human wellbeing while reducing increasing ecosystem threats was identified as its overarching goal. It should be noted that optimising the use of natural resources and ocean efficiency within the accepted ecological framework had already become an important aspect of the Blue Economy at that time (European Environment Agency, 2021).

The ocean economy, also known as the Blue Economy, encompasses all sectors of the economy that show a direct or indirect connection to the ocean. This creates numerous economic and social development opportunities for countries, as well as a diversification of business profiles for coastal companies. The opportunities created are a result of the traditional activities of natural reservoir development, nature conservation and tourism projects, and expansion in the areas of ocean information and science (Stefanakis, 2021).

The Blue Economy accounts for integration in the development of the ocean economy. It also accounts for the values of incorporating environmental sustainability and social governance along with innovative and dynamic business models. Such a pattern is seen as a compatible decoupling of economic and social activity and development from the optimisation of the benefits derived from accumulated water resources. Blue growth means making full use of marine and water resources while ensuring the integrity of the entire ecosystem. This presupposes a situation where all economic activities are carried out consistently with scientific recommendations in the realm of ecological safety and feasibility (Cheung, 2021). The improvement of living standards should always be balanced with maintaining a healthy ecosystem. Oceanic economic activity is still in its early stages, and in recent years has been referred to as an economic frontier. The physical context of the ocean highlights this barrier. A three-dimensional environment exists in which resources such as fisheries are subject to multiple jurisdictions and political limits.

Life in the oceans accounts for more than 95% of the entire biosphere. Water and oceans support the life of thousands of marine and terrestrial organisms by, among other things, absorbing carbon dioxide, producing oxygen, regulating global temperature and climate, and processing nutrients (Cheung, 2022). Ocean economy supplies a significant proportion of the global population with food and constitutes the mode of transport for more than 82% of global trade. Coastal and ocean fronts provide essential resources for the development of the tourism industry. 32% of the global supply of hydrocarbons is provided by the seabed, and exploration in search of these is moving towards the depths of the ocean. Significant technological advances are spurring new frontiers in the development of ocean resources, including the extraction of minerals from the seabed and bio-ecological exploration. Ocean waters hold great potential for the development of renewable blue energy production using tides, thermal sources, waves, and biomass (Scipioni, 2023).

Nowadays, the annual economic value generated by the oceans is close to US 3 trillion, representing 2.5% of global GDP. Some of the tasks of

the ocean economy include: providing minerals and food, neutralising greenhouse gases, producing oxygen, setting weather standards and fulfilling the role of sea lanes in international trade (UNCTAD, 2023). The ocean economy can already now be called the fifth largest market in the world.

Financing the Ocean Economy and the Sustainable Development Goals

Almost every aspect of the global economy development outlined in the 17 Sustainable Development Goals depends on water resources. Catalysing investments that lead to environmental outcomes and targets is particularly facilitated by Goal 14 – Life Under Water (UN Global Compact, 2023). In its stipulations, it can be seen that the proper management of irreplaceable ocean resources is a fundamental element leading to a sustainable future. The area of surface water from the shoreline is subject to eutrophication and significant pollution. It is predicted that by 2050, 20% of large marine ecosystems will be affected by this phenomenon, and the oceans constitute 97% of the world's water and account for almost 99% of the Earth's total living space (UNIC Warsaw, 2023). Due to the littering of the oceans and seas, overfishing, the effects of climate change, and the rapid increase in the diversity and intensity of ocean usage, the aquatic environment is being driven to irreversible degradation. The biodiversity of the oceans is being subjected to the adverse effects of human activity and climate change. Millions of tonnes of plastic waste and oil spills are a small part of what the Blue Economy is currently facing.

Therefore, governments and international organisations and institutions should become active and invest in a plan to rebuild a sustainable ocean economy. At the same time, coastal and island countries should strongly demand the protection of the waters belonging to them, however, they are often unable to afford a prioritisation of the Blue Economy due to other development issues. Until now, most countries have relied solely on philanthropic support for funding their oceans and seas. It now seems fundamental to integrate the activities of international organisations, financial institutions, and environmental programmes to finance the protection of ocean ecosystems.

The preservation of coastal resources, along with ensuring their protection and wellbeing is possible in particular through the transformation of ocean economies, as financed by financial instruments including the issuance of so-called "blue bonds". These bonds demonstrate a transformative impact on ocean economies through capital support in the form

of the financing of ocean initiatives. Such solutions signal an opportunity to mobilise the resources of public and private actors to strengthen ocean economies. The financial support provided to ocean industries and coastal states is proving to be the most significant factor in stimulating economic transformation. In addition, it potentially contributes to increasing the volume of publicly available financing options or developing more favourable terms for their acquisition. As with a single investment, in order to motivate and attract institutional investors to invest in blue debt securities, they must provide transparency with regard to the use of the proceeds, the environmental objectives completed, and, most importantly, offer positive returns on invested capital (Obiegło, 2020).

Another reason why blue financial instruments are becoming tools to stimulate oceanic transformation are the economic and social benefits achieved in the process. Unconventional ocean finance instruments are commonly used to invest in spheres of the ocean economy so as to provide assistance in creating sustainable ecosystems, to guarantee the protection of their livelihoods, and enhance food security in the most crisis-affected areas. A comparative area for achieving economic benefits and conversion in terms of ocean transformation is the adaptation of the strategic Sustainable Development Goals by countries and international organisations. This adds value to both public and private issuers in conceptualising investment projects and adapting to commitments resulting from an issuing of blue bonds. The decision of the issuer to take its debt instruments to the public market is linked to the increasing scale of visibility and recognition among financial investors. The publicity generated by the issuance of blue bonds is able to generate further economic capital, and the resulting funding can stimulate ocean initiatives in other related areas, including social development and tourism (Gates, 2022).

The crucial element of financing sustainable investments for the ocean economy is that the inflow of capital can occur at the early stages of development or when upgrading already undertaken projects. Therefore, the Sustainable Development Goals motivate groups of countries as well as international organisations and institutions to initiate alternative treatments to decompose global trade in the near future, as well as to reduce excessive carbon emissions (Jacson, 2002). There is a great need for instruments that prioritise initiatives that promote the implementation of the initiatives set out in the Sustainable Development Goals.

The Blue Economy vs. EU Projects

The ocean economy is presently guided by the comprehensive actions of public and private actors with an approach of flexibility and prudence. Cross-sectoral, sectoral or long-term actions constitute the substitutes for effects. To date, the European Union's decisions on this issue have mainly been based on assessing the value and costs to society, as well as the impact on other cross-border activities (Sozosfera, 2021).

According to the World Ocean Council (WOC), the sustainability of ocean waters occurs when their activity corresponds to the long-term recovery capacity of aquatic ecosystems. It seems that the essential aim of the aforementioned interpretation is to take into account existing environmental constraints. Currently, many international documents addressing this issue focus on the quantification of benefits as well as the development of future growth projections. In the European Commission's approach, marine spatial planning plays an important role, as it provides a guarantee for a faster resolution of natural resource issues (European Commission, 2021). The European Commission's communication details the Blue Economy's sustainability agenda. It sets out to achieve the goals of zero pollution and climate neutrality by greening ports and decarbonising maritime transport. With such solutions, it would be possible to guarantee the generation of a quarter of the electricity generated in the European Union as early as 2050. Ports for trans-land connections used as energy storage will therefore be crucial in the future (World Resources Institute, 2021).

Reducing pollution and converting to a circular economy is another priority for the EC and its action on sustainable ocean management. The Commission envisages updating standards that specify the design of fishing methods, the decommissioning of offshore platforms, and the recycling of ships, thereby reducing pollution from microplastics and other plastics (Janik, 2020). Over 30% of the EU's marine area is already capable of reversing biodiversity loss, thereby contributing to significant social and financial benefits. The EC also envisages adaptation measures that strengthen coastal resilience through the protection of coastlines against the increasing risks of flooding and erosion (benefits for the coastal economy and tourism) (Social Watch, 2022).

Standards to ensure sustainable food production will also be developed in the EU. The regulations will apply to trade in algae, sea grass and seafood, and fishing will also be subject to stringent controls. On the upside, seafood produced on the basis of unconventional solutions will help protect European waters and develop innovation (United Nations,

2022). The issue of improving the management of marine space has additionally been considered. The Blue Forum is going to lead and coordinate dialogue between stakeholders, actors, and scientists in areas such as tourism, shipping, renewable energy, and aquaculture. All of the abovementioned activities are going to stimulate an exchange of views in the context of the rules of cooperation for the sustainable use of the ocean environment.

As early as 2005, the Commission took necessary measures to extend the European Emissions Trading Scheme (EU-ETS), which, in the coming years, is to also include maritime transport, which accounts for more than 80% of the planet's resource handling. Its functioning and principles of cooperation with key stakeholders are based on the concept of The Poseidon Principles, which describe the global framework and tenets of responsible ship financing (Global Maritime Forum, 2023). Their premise is to promote the decarbonisation of international shipping. The principles integrate climate considerations into the lending decisions and financial resources of banking institutions. The Universal Definition of Principles for Responsible Banking for Ocean Shipping (Rousseau, 2020) has already been accepted and implemented by no fewer than 185 banks.

The EC's actions were followed by the International Maritime Organisation (IMO), which unexpectedly changed the existing net content limits for ships' exhaust gases. Their operation outside control zones was reduced from 3.5% to 0.5%, while standards in control zones were set at 0.1%. This stringent approach implies that ships not meeting these standards will be barred from entering seaports. EC research shows that ships are responsible for just over 940 million tonnes of carbon dioxide entering the atmosphere each year, which represents around 2.5% of all greenhouse gas emissions (Romanowska, Madrjas, 2019).

In 2017, industry organisations succeeded in excluding shipping from the emissions trading scheme. This was the result of actions led by, among others, the International Maritime Organisation, which prioritised more advanced global strategies. The major maritime players of Liberia, Panama, and the EU Member State of Malta all advocated for stipulations counteracting climate change (Jurdzinski, 2017). Shortly thereafter, IMO member countries endorsed the introduction of shipping restrictions as the decarbonisation process progressed. Milestones were set, including the previously-mentioned designation of global sulphur emission control zones and the reduction of overall sulphur oxides emitted from the combustion of marine fuels. The scrapping of obsolete marine vessels unfit for further use has also proven to be a necessity. Generally, a ship sails for 25–30 years, but, unfortunately, investments in such capital-

intensive vessels are not able to amortise in that time. Thus far, everything has taken place under strict legislative supervision, while investment decisions were being relegated to the sidelines. Shipyards around the world are trying to adapt production to the required use of existing low-sulphur solutions (Janik, 2020). The use of conventional fuels is allowed, but with the assumption that ships have special systems called scrubbers to stop sulphur from being emitted.

Thus, the biggest challenge facing maritime transport is the availability and development of innovative and alternative green technologies. The European Maritime Safety Agency (EMSA) defines alternative fuels as energy sources that serve – at least to a small degree – as substitutes for fossil fuels (Now Environment, 2017). Thus, LNG is the current cure-all on the way towards a technological upgrade. Experts at the Oxford Energy Centre conclude that this is going to be the biggest revolution since the transition from sail to steam power was made. What is more, they argue that low-carbon natural gas is not only a cleaner fuel, but also a cheaper fuel, especially when one considers emission expenditure, which accounts for between 60–80% of a unit's total operating costs (The Oxford Institute for Energy Studies, 2018).

There is a real need for the EU's activities to reconstruct the policy frameworks, behaviours, and institutional models that, at the present time, pose barriers to achieving the goals of a blue, sustainable economy. Ensuring adequate skills and qualifications for those in control of water initiatives is another important area, followed by the issue of financing and optimal pricing. When initiatives are implemented, suppliers should ensure that they have the capacity to fully cover maintenance and operational costs, as well as being given full access to investment funds to improve leverage (Word Bank, 2022a).

The European Commission is strengthening cooperation within a sustainable Blue Economy with the European Investment Bank Group. Investments in the bio economy and so-called "blue innovation" are supported. The European Maritime, Fisheries and Aquaculture Fund, through the BlueInvest Fund, promote sustainable value chains based on coastal, ocean, and marine activities. In 2022, this accelerator and platform supporting investment in sustainable technologies announced another capital initiative fully dedicated to the Blue Economy. It aims to mobilise an additional EUR 500 million of EU funding. Over the past three years, BlueInvest's initiatives in sustainable oceans, fisheries, and the environment have included the signing of a large number of financing agreements and raising investor awareness while helping to bridge the financing gap. BlueInvest's achievements to date include (European Commission, 2022):

- 2,400 online projects from 300 reputable companies;
- 24 Blue Economy project deals signed;
- 25 deals concluded with private investors;
- 200 SMEs guaranteed individual coaching support;
- and EUR 100 million of EU funding received through the EIF BlueInvest Fund.

Moreover, in order to finance the transformation of the ocean economy in the long term, the EC has called for blue investments to be included in the operational programmes for the EU Structural Funds until 2027 in the national recovery plans (European Commission, 2021a).

Conclusions

At present, it seems fundamental to integrate the activities of international organisations (including within the EU), financial institutions, and environmental programmes with local economies and their complex ecosystems. The health of the ocean economy is fundamentally linked to the overall state of the oceans. Challenges such as pollution, climate change or simply the lack of awareness in the context of sustainable ocean management and governance techniques are an unprecedented threat to water resources. They are successively reducing the potential economic and social benefits of the globe.

The success of ocean-sustainability initiatives depends mainly on the coherent coordination of project financing, design, and implementation of the Blue Economy at the macro, micro, and local levels. This is because it is assumed that it will come from the issuance of sustainable blue assets, public funding, and philanthropy from global international and state partners. The growing popularity of debt instruments issued to raise funds for specific climate and environmental goals has led to the design of blue assets. Blue bonds provide capital to issuers, who repay a set amount of debt with interest over time. In turn, they finance the funds raised towards a sustainable ocean economy.

Countries and international organisations and institutions, particularly the EU, are increasing the issuance of blue assets with the intention of moving towards a zero-carbon economy. Blue debt instruments are a pioneering transaction that represents another source of green capital. Their concept identifies the fundamental undertakings required for an effective financing of coastal resilience, outlines its premise, and defines the status of blue bonds in the rapidly evolving scheme of sustainable finance (Blue Natural Capital, 2021).

An effective transformation of the Blue Economy into something more sustainable requires investment financing that will provide significant

guarantees of environmental benefits. The investment concept of blue bonds, however, is not limited to raising and accumulating capital. It also addresses reputational considerations, pricing advantages, building a reliable investor base and an established institutional position, including that of the EU.

References

Blue Natural Capital (2021) *BNC Positive Impacts and Blue Bonds*. Available at: https://bluenaturalcapital.org/our-approach/bnc-positive-impacts-and-blue-bonds/ (Access 10.02.2023).

Cheung, W., Ota, Y. and Cisneros-Montemayor, A. (2019) „Sustainability of Ocean and Human Systems Amidst Global Environmental Change", *Predicting Future Oceans*. No. 1, pp. 78–116.

European Commission (2021) *Sustainable blue economy. A new approach for a sustainable blue economy in the EU*. Available at: https://oceans-and-fisheries.ec.europa.eu/ocean/blue-economy/sustainable-blue-economy_en (Access 10.02.2023).

European Commission (2021a) *European Green Deal: Commission adopts strategic guidelines for sustainable and competitive EU aquaculture*. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_1554 (Access 10.02.2023).

European Commission (2022) *BlueInvest: Commission and EIF agree to mobilise €500 million with new equity fund for blue economy.* Available at: https://oceans-and-fisheries.ec.europa.eu/news/blueinvest-commission-and-eif-agree-mobilise-eu500-million-new-equity-fund-blue-economy-2022-03-28_en (Access 10.02.2023).

European Environment Agency (2021) *Droga do globalnego zrównoważonego rozwoju*. Available at: https://www.eea.europa.eu (Access 10.02.2023).

Gates, B. (2022) *How to Avoide a Climate Disaster*. New York: Penguin Random House.

Global Maritime Forum (2023) *Poseidon Principles*. Available at: https://www.globalmaritimeforum.org (Access 11.02.2023).

Holsti, K. (1983) "A Framework for Analysis", *International Politics*. No. 4, pp. 145–148.

Jackson, J. (2002) *Perceptions about the WTO trade institutions*. Available at: https://scholarship.law.georgetown.edu (Access 20.02.2023).

Janik, M. (2020) „Zielony Ład obejmie również morza i oceany całego świata", *Rzeczpospolita*. Available at: https://www.rp.pl (Access 10.02.2023).

Jurdziński, M. (2017) *Międzynarodowa Organizacja Morska (IMO) w procesie globalizacji żeglugi morskiej*. Available at: https://wn.umg.edu.pl (Access 10.02.2023).

Obiegło, M. (2020) *Niebieskie obligacje jako innowacyjne źródło finansowania*. Available at: https://www.linkedin.com/pulse/niebieskie-obligacje-jako-innowacyjne-%C5%BAr%C3%B3d%C5%82o-monika-obieg%C5%82o/?originalSubdomain=pl (Access 10.02.2023).

Romanowska, M. and Madrjas, J. (2019) *Komisja Europejska ogłosiła Zielony Ład. Jakie zmiany czekają transport?*. Available at: https://www.rynekinfrastruktury.pl/wiadomosci/drogi/komisja-europejska-oglosila-zielony-lad-jakie-zmiany-czekaja-transport-69833.html (Access 10.02.2023).

Rousseau, P.C.G. (2020) *Rising after Covid-19: the role of the blue economy as a step towards a sustainable business outlook*. Available at: https://www.linkedin.com/pulse/rising-after-covid-19-role-blue-economy-step-towards-outlook/ (Access 12.02.2023).

Scipioni, A., Manzardo, A. and Ren, J. (2023) "Processes, Supply Chain, Life Cycle Analysis and Energy Transition for Sustainability", *Hydrogen Economy*. No. 2, pp. 256–276.

Social Watch (2011) *What is sustainable development?* Available at: https://www.socialwatch.org (Access 3.01.2022).

Sozosfera (2021) *Zrównoważona niebieska gospodarka w Unii Europejskiej*. Available at: https://sozosfera.pl (Access 11.02.2023).

Stefanakis, A. and Nikolaou, I. (2021) "Environmental Engineering", *Circular Economy and Sustainability.* No. 2, pp. 113–167.

Teraz środowisko (2017) *Komisja Europejska upomina się o plany rozwoju infrastruktury paliw alternatywnych*. Available at: https://www.teraz-srodowisko.pl/aktualnosci/komisja-europejska-wzywa-do-nadrobienia-zaleglosci-w-infrastrukturze-paliw-alternatywnych-3552.html (Access 12.02.2023).

The Oxford Institute for Energy Studies (2018) *The LNG Shipping Forecast: costs rebounding, outlook uncertain*. Available at: https://www.oxfordenergy.org/publications/lng-shipping-forecast-costs-rebounding-outlook-uncertain/ (Access 11.02.2023).

UN Global Compact (2023) *Blue Bonds*: *Accelerating Sustainable Ocean Business*, *United Nations Global Compact*. Available at: https://unglobalcompact.org/take-action/ocean/communication/blue-bonds-accelerating-sustainable-ocean-business (Access 10.02.2023).

UNCTAD (2023) *Oceans Economy and Fishers.* Available at: https://unctad.org/topic/trade-and-environment/oceans-economy (Access 10.02.2023).

UNIC Warsaw (2023) *Cele Zrównoważonego Rozwoju*, *Cel 14: Chronić oceany, morza i zasoby morskie oraz wykorzystywać je w sposób zrównoważony*. Available at: https://www.un.org.pl/cel14 (Access 10.02.2023).

United Nations (2022) *New FAO report: The Aqua Crop Model*. Available at: https://www.unwater.org/news/new-fao-report-aquacrop-model (Access 11.02.2023).

Voyer, M. et al. (2018) "Shades of blue: what do competing interpretations of the Blue Economy mean for oceans governance", *Journal of Environmental Policy & Planning*. Vol. 20(5), pp. 595–616. DOI: https://doi.org/10.1080/1523908X.2018.1473153.

Wenhai, L., Cusack, C. and Baker, M. (2019) "Successful Blue Economy Examples With an Emphasis on International Perspectives" 2019, *Ocean Solutions*. Vol. 6, pp. 1–14. DOI: https://doi.org/10.3389/fmars.2019.00261.

World Bank (2022) *Water Resources Management*. Available at: https://www.worldbank.org/en/topic/waterresourcesmanagement (Access 10.02.2023).

World Bank (2022a) *Water Supply*. Available at: https://www.worldbank.org/en/topic/watersupply (Access 10.02.2023).

World Resources Institute (2021) *High Level Panel for a Sustainable Ocean Economy*. Available at: https://www.wri.org/initiatives/high-level-panel-sustainable-ocean-economy (Access: 23.08.2021).

Zintegrowana Platforma Edukacyjna (2023) *Obecność wody w przyrodzie*. Available at: https://zpe.gov.pl/szukaj?query=obecno%C5%9B%C4%87+wody+w+przyrodzie (Access 10.02.2023).