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Alice Dellavalle
Fórum Oceano - Associação da Economia do Mar
alice.dellavalle@gmail.com
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Financing ocean sustainability: lessons and limitations of blue bonds

Financiamento da sustentabilidade dos oceanos: lições e limitações das obrigações azuis

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Abstract: The ocean is essential to the global economy but remains greatly underfunded. To fill this gap, in the last years, different blue finance instruments have emerged. In this context, blue bonds offer a promising mechanism to mobilize capital for marine conservation and sustainable ocean projects. This paper explores the structure, function, and potential of blue bonds, analyzing their application across sovereign, development bank, and corporate contexts. Drawing lessons from green bonds, the paper outlines key recommendations to enhance blue bond effectiveness, such as standardised frameworks, stronger reporting systems, and risk mitigation tools.

Keywords: Blue Bonds | Blue Finance | Ocean Sustainability | Sustainable Blue Economy | Marine Conservation.

Resumo: O oceano é essencial para a economia global, mas continua significativamente subfinanciado. Para preencher essa lacuna, diversos instrumentos de financiamento azul têm surgido nos últimos anos. Nesse contexto, as obrigações azuis representam um mecanismo promissor para mobilizar capital em prol da conservação marinha e de projetos sustentáveis nos oceanos. Este artigo explora a estrutura, a função e o potencial das obrigações azuis, analisando sua aplicação nos contextos soberano, de bancos de desenvolvimento e do setor corporativo. A partir das lições aprendidas com as obrigações verdes, o artigo apresenta recomendações-chave para aumentar a eficácia das obrigações azuis, como a adoção de frameworks padronizados, sistemas de reporte mais robustos e mecanismos de mitigação de riscos.

Palavras-chave: Obrigações Azuis | Finanças Azuis | Sustentabilidade dos Oceanos | Economia Azul Sustentável | Conservação Marinha.

Introduction

The ocean is fundamental for the global economy and the overall sustainability of the environment. The Blue Economy sustains over 3 billion people and supports a variety of industries, from fisheries to maritime trade, while absorbing around 25 to 30% of all the human-caused carbon emissions. However, despite its indispensable role, the ocean has often been undervalued and is currently threatened by climate change, overfishing, pollution, and habitat degradation, with heavy repercussions on ecosystem resilience and human livelihoods (World Bank Group, 2025). Such challenges require strong policy and governance, as well as access to substantial financial resources. It has been estimated that closing the ocean finance gap will require at least USD 1 trillion by 2030 (Bosmans & De Mariz, 2023).

Traditional funding sources have been inadequate and almost insufficient to meet the needs of marine environments. In response, blue finance has emerged as a more suitable solution to channel capital toward the protection of ocean and marine ecosystems. Among blue finance instruments, blue bonds have developed rapidly as a mechanism like green bonds but tailored to marine environments. These instruments represent fixed-income debt instruments that allow governments, development banks, and corporations to access capital for ocean-related investments and projects (Treasurer, 2025; World Bank Group, 2025).

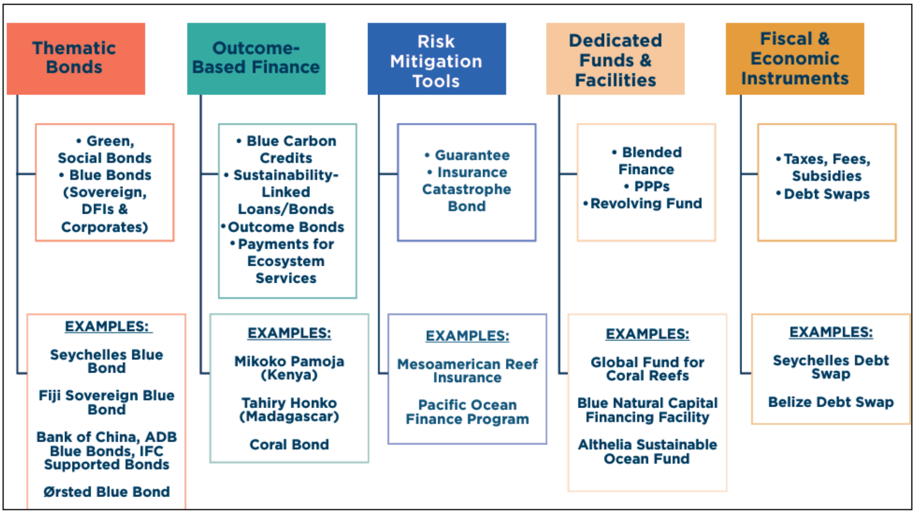
Nevertheless, while blue bonds have great potential to narrow the ocean funding gap and attract private investments, they also face significant challenges and limitations. Blue bonds have high transaction costs, limited standardized metrics for assessing marine impact, investor lack of confidence, and institutional challenges in issuing countries, particularly in Small Island Developing States (SIDS) (World Bank Group, 2025; Gunung Capital, 2023).

This paper aims to analyse the structure and functioning of blue bonds as a new tool expanding within the blue finance ecosystem. It will present key actors driving market development, highlight challenges that must be addressed to ensure their implementation and scalability, and outline recommendations for enhancing them, based on lessons learned from green finance and other financial instruments. The aim of the paper is to contribute to the broader discussion on blue financial instruments, providing a general understanding of what blue bonds are, how they work and how they can represent an effective financial tool for the Blue Economy's needs for innovation and scalability.

The blue bonds in the blue finance framework

Blue finance represents a wide range of financial instruments aimed at directing capital towards the development of a sustainable blue economy. These tools include thematic bonds (e.g. blue bonds), outcome-based finance (e.g. blue carbon credits), risk management tools (e.g. resilience bonds), fiscal mechanisms (e.g. debt-for-nature swaps), and dedicated funds or facilities. As part of the thematic bonds, blue bonds look for ways to channel private and public capital toward ocean sustainability, with usefulness in contexts in which public entities try to align financing strategies with marine protection and adaptation strategies (World Bank Group, 2025).

Figure 1 – Blue finance instruments



What are Blue Bonds?

Blue bonds, similarly to any other type of bond, work as financial instruments. They are fixed-income debt securities that enable entities to borrow money from investors, functioning similarly to loans, for a specific period and are typically traded over the counter or as stock exchange. Issued by corporations or governments, they can include pension funds, banks, and private individuals. The investors that lend will receive regular interest payments, in the form of coupons, until the bond matures, at which point the issuer repays the initial principal investment. They are usually representing a less expensive way to obtain funding, increase cash flow or finance projects. Their repayment will depend on the revenue generated by the financed projects (Bosmans and De Mariz, 2023). Bonds can also be guaranteed by third parties, such as development banks, to mitigate the risk of investor losses in case of default. There are two main types of bonds, on one side the "*use-of-proceeds bonds*", used to fund general issuer activities, and on the other hand the "*project bonds*", that focus on funding specific projects (Thompson, 2022).

In the last years, sustainable bonds started emerging as a new debt category. They include green bonds, social bonds, sustainability bonds, and sustainability-linked bonds, all financial instruments that align with the "Principles, Guidelines and Handbooks" of the International Capital Market Association (ICMA, 2021). Within these categories, the blue bonds have been developed to specifically finance projects related to ocean and freshwater ecosystems (Treasurer, 2025).

Blue bonds are created in alignment with the United Nations Sustainable Development Goals (SDGs), with particular focus on the SDG 6 (Clean Water and Sanitation) and SDG 14 (Life Below Water). They specifically finance projects for marine conservation, sustainable fisheries, coral reef restoration, cleaner shipping practices, reduction of oceanic plastic pollution, and eco-friendly tourism initiatives (Mundy, 2025). The first sovereign blue bond was issued in 2018 by the Republic of Seychelles, and raised $15 million to specifically support marine resource conservation, thus setting a precedent for further issuance (Mtambo, 2024).

Blue bonds can be categorized into three main types (World Bank Group, 2025):

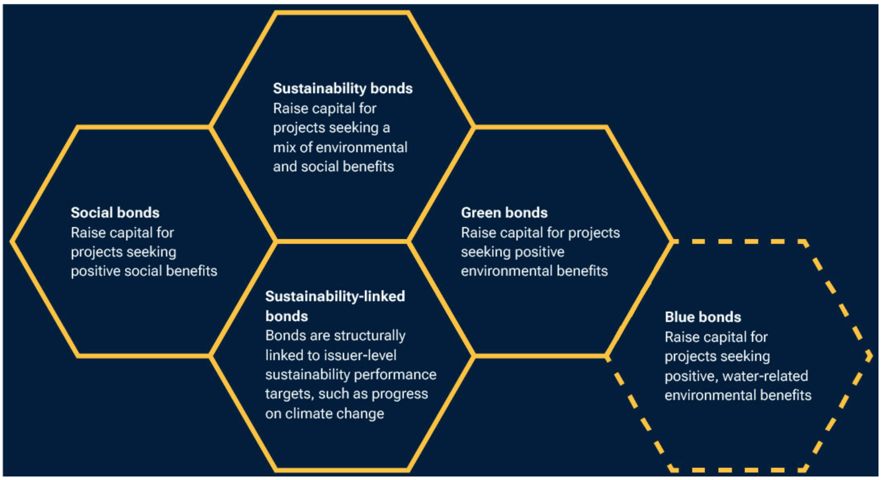
— **Sovereign Blue Bonds** are usually issued by national governments for financing large-scale marine protection projects, and they can leverage sovereign credit ratings to access capital. One example of such bonds is the Seychelles Blue Bond, which raised USD 15 million to finance marine protected areas, sustainable fisheries, and support for the national blue economy strategy. In this case the proceeds were managed by the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT), which helped ensure transparency and long-term impacts (Mtambo, 2024).

— **Development Bank and FI–Issued Blue Bonds** are backed by multilateral development banks (MDBs) and national financial institutions. They are structured to de-risk private investments and attract capital flows. They have been used, for example, by the Nordic Investment Bank that issued the Baltic Sea Blue Bond to fund wastewater treatment and nutrient reduction and by the Asian Development Bank (ADB) that used blue bond to finance climate-resilient fisheries and marine pollution control in Asia-Pacific (World Bank Group, 2025).

— **Corporate Blue Bonds** are issued by private sector entities to finance commercially viable projects. For example, Ørsted's corporate blue bond supports offshore wind development and marine biodiversity restoration (World Bank Group, 2025).

Each category has different issuer types, credit structure, and risk-sharing mechanisms, making them applicable in different context and more or less aligned with investors interests and policy frameworks.

Figure 2 – Blue bonds in the sustainable finance framework



When to use blue bonds within the blue finance landscape

Blue bonds are useful when a government, development finance institution (DFI), or corporate need access to large-scale capital for marine sustainability projects. They have been proven most effective in contexts with clear legal frameworks for bond issuance, and that are ready to be evaluated by investors, thus ensuring transparent and clear reporting of KPIs (World Bank Group, 2025).

Blue bonds differentiate from other blue finance instruments, such as outcome-based finance (which links disbursement to verified ecological results), insurance mechanisms (which provide risk transfer), or blended finance facilities (which aggregate concessional and private capital for high-risk projects), because they offer a predictable fixed-income structure that can be very convenient for institutional investors. Their use is recommended for contexts with stable capital markets and when there is access to sovereign credit ratings or multilateral development banks (MDB) support. Moreover, their use is facilitated when the policy environment aligns with international sustainability frameworks such as the ICMA Green Bond Principles or IFC Blue Finance Guidelines (ICMA, 2023; IFC, 2022).

Other instruments are a better solution in settings where there is a lack of technical capacity, data systems, and strong investor confidence. In such cases, instruments such as debt-for-nature swaps or blended finance funds may be more appropriate. Ultimately, blue bonds should be used in situations where there is a long-term financing goal and for large-scale projects through capital markets. They ensure transparent and accountable initiatives, rather than flexible or results-based mechanisms (World Bank Group, 2025).

Issuance of blue bonds

Blue bonds are typically issued by states, multilateral development banks, financial institutions, or corporations that look for a more diversified investor base. With such instruments, they can attract, for example, institutional players, venture capital firms and high-net-worth individuals interested in sustainable marine investments (Young, Noble et al., 2025).

The issuance of a blue bond involves a structured approach to ensure credibility and alignment with sustainability objectives. First, issuers should align with international frameworks, primarily the International Capital Market Association (ICMA) framework, which include use of proceeds, to specify how the funds raised will be used, criteria to evaluate and select eligible projects, ultimately putting in place systems to manage the allocated funds and providing regular and transparent reporting on the financial and environmental performance of the projects (Young, Noble et al., 2025). Second, a comprehensive Blue Bond Framework should be developed, including the definition of a clear environmental baseline consistent with ocean sustainability objectives and SDGs, as well as the establishment of clear measurable targets and KPIs. Third, issuers may obtain a second-party opinion (SPO) from independent and reputable evaluators, assessing the bond's alignment with sustainability principles (UN Global Compact, 2020).

Blue bond issuance has been rapidly evolving in the sustainable finance framework. Although relatively new compared to green bonds, first issued in 2007, the blue bond market has been growing, with $2.5 billion in bonds issued in a single year (Mundy, 2025). Despite initially slow adoption, they have begun to emerge after the Seychelles' pioneering issuance, which supported marine protected area expansion. Indonesia followed by issuing a sovereign blue bond, raising $150 million in 2023 for coastal restoration projects, and other multilateral financial institutions have also contributed significantly, issuing approximately $2 billion in blue bonds to date (Mundy, 2025). Fundamental to this development was the initiative of the World Bank which created a Sustainable Development Bond, aimed at raising global investor awareness and funds on plastic waste mitigation in oceans, emphasizing the urgency of marine conservation issues (World Bank, 2019).

Furthermore, the private sector has also become more active in blue bond issuance, raising about $9 billion so far (UN Global Compact, 2020). Notably, financial institutions in Asia, such as Bank of China, BDO Unibank of the Philippines, and Thailand's Bank of Ayudhya, have issued over $3 billion in blue bonds to finance marine-related client projects. Additionally, ocean-related companies like Danish offshore wind firm Ørsted, Dubai-based port operator DP World, and Japan's Mitsui OSK Lines have collectively raised significant funds, with over €100 million each, to finance projects targeting marine ecosystem protection and pollution reduction (Mundy, 2025).

Market actors

The blue bond market is characterized by different actors:

— On one hand, *international financial institutions*, that account for more than half of blue bond issuances between 2018 and 2022 and directly issue bonds, like the World Bank and the Asian Development Bank, or, like the International Finance Corporation (IFC), support domestic banks in issuing bonds, such as was done in Thailand, the Philippines, and Ecuador with amounts ranging from USD 50 million to USD 100 million (Bosmans & de Mariz, 2023). The World Bank alone has issued five blue bonds totalling USD 324 million through its PROBLUE program, aimed at supporting the sustainable development of oceanic sectors (World Bank, 2022b).

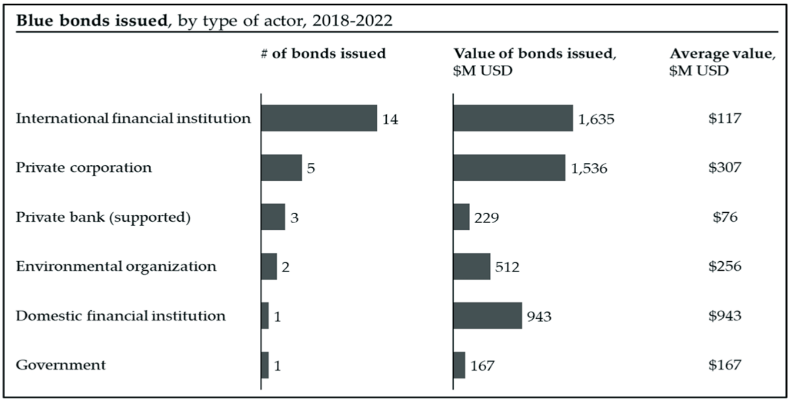
— *Corporate* actors play a smaller role, with less than one-fifth of blue bonds issued. This is because even corporations that are clearly aligned with ocean and water sectors often focus on green bonds due to the established trust and recognition associated with the

International Capital Market Association's (ICMA) framework (Roth et al., 2019). However, companies such as Seaspan Corporation, Maruha Nichiro, Mowi, Grieg Seafood, and BRK Ambiental have ventured into the blue bond space and corporate-issued blue bonds are typically larger, averaging USD 307 million, which is approximately 2.6 times greater than those issued by international financial institutions, averaging USD 117 million (Bosmans & de Mariz, 2023).

— Other significant actors include *environmental organizations*. One relevant example is the Nature Conservancy which launched the Blue Bonds for Conservation project in 2019, refinancing debt for Belize and Barbados to free resources for marine conservation investments (TNC, 2022).

— Finally, *state-owned banks and governmental entities* like the Bank of China and the government of Hainan Province also participate in issuing blue bonds (Bosmans & de Mariz, 2023).

Figure 3 – Bond issued by type of actor[1]



How blue bonds support the blue economy

Blue bonds are emerging as a fundamental financial instrument to address environmental and economic challenges linked to the ocean and marine activities. Their importance to the blue economy concerns three central aspects:

— *The ocean and climate change are deeply interconnected, and investing*

[1] Source: Bosmans P. and De Mariz F. (2023)

in the blue economy can help address these critical issues. On one hand, oceans are facing rising temperatures, acidification, and sea level rise which damages marine life and have far reaching secondary effects, which are exacerbated by human activities such as overfishing and overexploitation of resources. Sea level rise alone has been estimated to cause annual economic losses up to USD 14 trillion by 2100 (Bosmans and de Mariz, 2023; Jevrejeva et al., 2018). On the other hand, the ocean plays a fundamental role in the mitigation of climate change, as it functions as the biggest carbon sink on the Earth, but it also has great economic value. From an economic point of view, the ocean economy is worth around US$1.5 trillions, and it is expected to double reaching US$3 trillion by 2030, implying the creation of approximately 40 million jobs (LSE 2024; Young, Noble et al. 2025; Mtambo, 2024).

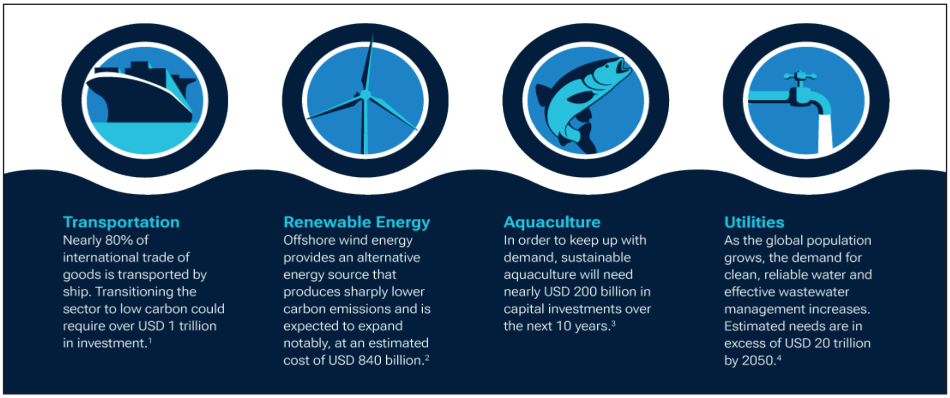
In this context, blue bonds represent a valuable instrument to create financial returns, together with positive environmental and societal outcomes that can allow for a more profitable and sustainable global economy (Mtambo, 2024):

— *Blue bonds are a tool for bridging the financing gap in the ocean economy.* In 2019, the SDG14 received only USD 2.3 billion, 0.6% of the total SDG funding planned, making it the least financed goal. Only 2% of blended finance transactions support SDG14, far behind other goals like climate action (16%) and clean water (5%) (Bosmans and de Mariz, 2023).

Private sector involvement is also limited, with SDG14 lagging in corporate sustainability objectives, which results in a lack of investment commitment. Yet, achieving SDG14 by 2030 is estimated to require USD 155.7 billion (WEF, 2022). Currently, only 2% of countries are on track to meet this target (Bosmans and de Mariz, 2023).

— *Investing in the oceans has great economic potential.* The total asset value of the blue economy has been estimated at USD 24 trillion. With strategic investments of USD 2–4 trillion in sustainable ocean sectors, it could generate net benefits of value USD 8–23 trillion over 30 years, with benefit–cost ratios between 3:1 and 12:1.

Figure 4 – Financial Gap of the Blue Economy[2]



Investments catalysed through blue bonds not only allow to addressing pressing environmental issues but also offer considerable economic and social returns. These include job creation, enhancing food security, reducing pollution, managing water scarcity and increasing conservation efforts. Overall, blue bonds ensure financing to work on global key pressure points contributing to healthier ecosystems, improved livelihoods, and strengthened economic stability.

Such benefits are ensured because of the specific characteristics of blue bonds:

- *Blue bonds have a broad geographical scope*. Their aim is to fund initiatives with impact in different countries and within broad geographical areas, ensuring effects on a bigger scale and fostering regional cooperation. For example, the Nordic-Baltic Blue Bond, which focuses on financing projects on wastewater management and coastal flood mitigation, works across Sweden, Norway, and Finland (Thompson, 2022). Moreover, the Pacific Blue Shipping Partnership Bond has the objective to raise capital for the maritime transport sector for multiple Pacific Island nations (Thompson, 2022).
- *Blue bonds can also have a critical role in Small Island Developing States (SIDS)*. SIDS are very specific because of their heavy reliance on marine resources. At the same time, they are usually lacking basic infrastructure, reducing their ability to independently finance marine related projects. Blue bonds, because of their very nature, foster coordination and regional collaboration. An illustrative example is what happened in the Seychelles, where the first Blue

[2] Source: Lawton M. and Tongai K. (2023).

Bond was issued contributing to support marine spatial planning, sustainable fisheries management, and entrepreneurship within the blue economy (Thompson, 2022).

— *Blue bonds are an instrument to address ocean-related challenges*, such as marine pollution, overfishing, biodiversity loss, and climate change adaptation. For example, the Nordic-Baltic Blue Bond issued bonds to reduce agricultural runoff of pollutants into marine ecosystems (Thompson, 2022). Additionally, they can be particularly useful in developing countries when used as debt-for-nature swaps, a financial instrument that allows external debt to be reduced by exchanging it with the implementation of local environmental conservation measures. Countries such as Seychelles, Indonesia, Colombia, Gabon, Belize, and Barbados have successfully made use of such instruments to refinance sovereign debt (Young, Noble et al., 2025).

— *Blue bonds also offer social and community benefits*. The investment in sustainable marine industries generates direct effects on employment, fostering economic diversification, and supporting coastal communities. For example, Fiji's planned blue bond explicitly targets marginalized groups such as small-scale fishers and marine-based enterprises (Thompson, 2022).

— Finally, *blue bonds represent an opportunity for closing the financing gap in Sustainable Development Goal 14* (Life Below Water). They allow the mobilization of private sector investments, enhancing global efforts towards a more sustainable management of marine resource and climate actions (Bosmans and de Mariz, 2023).

Lessons learned for enhancing blue bonds

The development of the blue bond market can learn valuable lessons from more mature markets, like the green bond market. Green bonds managed to have rapid growth because of climate policy commitments like the Paris Agreement, which increased environmental awareness, and stronger ESG expectations from investors. However, their growth faced several obstacles. Challenges included fragmented regulation, inconsistent reporting standards, limited investor awareness, and limited credibility and impacts, also due to greenwashing concerns (Treasurer, 2025; Thompson, B.S.).

Blue bonds, as a newer instrument, can be improved by learning from similar financial instruments already in place:

— *Standardized frameworks and regulation will be central.* Drawing from the green bond experience, establishing standardized frameworks to ensure market transparency and investor confidence should be the focus. In the green bond experience, the adoption of the Green Bond Principles (GBP) by ICMA provided critical guidance for defining eligible projects, impact reporting, and third-party validation (Treasurer, 2025). A similar approach is essential for blue bonds and existing frameworks, such as the IFC's Guidelines for Blue Finance, can be used as a foundation to harmonize criteria and prevent bluewashing (World Bank Group, 2025). One illustrative example is the case of China, where the creation of a comprehensive green bond framework, anchored in inter-ministerial coordination and central-local government alignment, was pivotal to rapid market growth and consistent impact monitoring (Lin & Hong, 2022). The blue bond market could replicate such mechanisms by embedding robust permitting, legal clarity, and transparent governance into the enabling environment (World Bank Group, 2025).

— A major barrier during the early phase of the green bond market was limited investor awareness. *Proactive education campaigns, stakeholder dialogues, and the dissemination of best practices* helped reduce uncertainty and build market depth. The blue bond market should invest in investor education to increase confidence by communicating the ecological, financial, and policy relevance of marine-related investments (Treasurer, 2025; World Bank Group, 2025).

— A third critical lesson is the *catalytic role of government policy and credit enhancement*. Green bonds grew more rapidly when aligned with national policy priorities and sustainability goals, often supported by multilateral institutions. In the blue bond context, the Seychelles and Fiji issuances illustrate how MDB involvement, such as from the World Bank and UNDP, can significantly reduce borrowing costs and improve investor confidence (World Bank Group, 2025). Without such backing, smaller economies face high coupon rates and weak market traction. Blue bond scalability depends on this integration of financial risk mitigation tools (World Bank Group, 2025).

— Unlike traditional financial instruments, *blue bonds must be treated as part of a broader, flexible "menu" of blue finance solutions*. As highlighted by the World Bank (2025), instruments such as blue bonds, outcome-based bonds, debt-for-nature swaps, and blended funds should be chosen taking into consideration the specific policy challenges, institutional capacity, and regulatory context of the issuing country or institution. A one-size-fits-all model would have the risks of creating mismatches between goals, financial instruments, and impact delivery. Thematic bonds can mobilize large-scale capital and improve sovereign ESG performance, but only when supported by the right enabling conditions: investor-ready pipelines, reporting infrastructure, legal frameworks, and access to guarantees (World Bank Group, 2025).

Challenges to the effective adoption of blue bonds

Even though they are facing growth and increasing interest from different stakeholders, blue bonds face different challenges, including technical, institutional and market-related barriers that limit the scalability and effectiveness of this instrument. These challenges are more evident in developing countries and Small Island Developing States (SIDS), which are usually more dependent on the Blue Economy.

Among the most important to keep into consideration:

— *Blue bonds are perceived as high-risk instruments* because of their complex nature. As they are linked to environmental, society, and governance concerns, they entail higher risks than other financial instruments and investors often struggle to evaluate the benefits of ocean-related projects. In most cases, they have limited track records and long-term effects that are difficult to assess (Gunung Capital, 2023). In emerging markets, difficulties are more evident because of their limited access to finance and their lack of credit enhancement mechanisms, which are critical for mobilizing institutional investors (World Bank Group, 2025).

— *They have limited mechanisms for a reliable and transparent reporting*. This increases the risk of bluewashing (Kılıç, 2024; Gunung Capital, 2023), while the absence of standardized metrics makes the verification more costly and technically demanding compared to other contexts. As in the case of the Seychelles Blue Bond and Belize's debt-for-nature swap, it is important to create customized monitoring frameworks, which can further increase transaction costs and complexity (World Bank Group, 2025).

— *Blue bonds market lacks a global taxonomy and governance framework*. Issuers often rely on systems in place for green bonds principles or develop proprietary guidelines, but this result in a lack of investor confidence (Treasurer, 2025). This fragmentation limits market comparability, slowing down adoption (World Bank Group, 2025).

— *Revenue streams are difficult to identify for ocean-related projects*, particularly when the projects target ecosystem restoration, biodiversity conservation, or pollution mitigation. Moreover, these projects often rely on public subsidies or donations, raising concerns

about their financial sustainability, and the lack of clear beneficiaries complicates the design even further (World Bank Group, 2025).
— *Blue bond issuance often incurs high preparatory and transaction costs*. These costs include technical assistance, legal support, and feasibility studies. An example is the Seychelles Blue Bond that required preparatory expenses up to 20% of the issuance value. Debt-for-nature swaps are even more complex because of the involvement of multi-party negotiations, which increase time and financial burdens (Kılıç, 2024; World Bank Group, 2025).
— *The blue bond market remains relatively new, resulting in limited issuances and investors*. There is low awareness about blue finance mechanisms, and this limits liquidity and reduces growth potential (Gunung Capital, 2023). Additionally, there are a limited number of successful and verifiable blue bond projects, making it even more difficult to build trust (World Bank Group, 2025).
— *Methodology to quantify impact of marine projects is a challenge.* Being more complex to assess than in the green context because of their dynamic nature, the metrics are often simplified or selectively reported, which can distort impact assessments (March et al., 2023; World Bank Group, 2025).
— *Many coastal states and islands have limited institutional capacity, which limits their ability to design, implement and manage blue bonds projects.* Such contexts often face weak regulatory frameworks and financial markets, and lack of coordination among government agencies (World Bank Group, 2025). The lack of ownership, even when supported by external stakeholders like development finance institutions (DFIs), limits long-term sustainability.
— *The effectiveness of blue bonds depends on enabling policy environments, including marine spatial planning, environmental laws, and investor protection mechanisms*. Many jurisdictions, particularly in the Global South, lack these instruments, creating ineffective development of blue bond proceeds. Currency volatility and foreign exchange can make this uncertainty worse (World Bank Group, 2025).
— *SIDS encounter a unique set of challenges*, because they usually face higher borrowing costs due to perceived macroeconomic instability and limited access to private finance, as investors favour less risky projects. Moreover, they need to deal with inadequate infrastructure, weak governance, and higher vulnerability to external shocks like climate events or pandemics. All elements which increase risk and complexity (Benzaken et al., 2024; World Bank Group, 2025).

Recommendations and conclusions

Overcoming these challenges and improving the blue bonds as a scalable financial instrument for ocean sustainability will demand addressing different institutional and technical challenges.

First of all, *investment readiness* should be improved by creating a standardized regulatory framework, with the aim of reducing transaction costs and building investor confidence (World Bank Group, 2025). To standardize impact metrics and enable comparability across jurisdictions, blue bond should integrate international frameworks such as the IFC Blue Finance Guidelines and the Sustainable Blue Economy Finance Principles.

Secondly, it will be critical to build *robust investment pipelines*. Projects must be technically prepared and financially structured, in alignment with national blue economy strategies. To reduce fragmentation of projects and reduce issuance costs, aggregation mechanisms, such as pooled portfolios or regional hubs, should be used (World Bank Group, 2025).

Thirdly, to de-risk the bonds instruments such as sovereign guarantees and blended finance should be used, particularly in the contexts of emerging markets and Small Island Developing States (SIDS).

Fourthly, *transparent data systems and science-based metrics* should be integrated into the bonds development to allow for more reliable monitoring and verification. To allow investors to evaluate long-term performance, independent validation of environmental and social impacts could be used (World Bank Group, 2025).

Finally, *stakeholder coordination* will be fundamental to ensure the development of blue bonds and allow them to reflect local priorities and deliver societal and environmental benefits. National and regional platforms might be adopted to help collaboration.

Conclusion

Several improvements should be undertaken to allow the blue bonds to become more consolidated as financial instrument, although, they already hold da significant promise as a catalytic tool to finance the blue gap and a transition towards a more sustainable blue economy. When designed together with strong institutions, transparent impact metrics, and stakeholder ownership, blue bonds can deliver measurable environmental and socio-economic outcomes.

The case of the Seychelles Blue Bond demonstrates this potential: it not only exceeded its conservation targets by transforming over 410,000 km² into Marine Protected Areas (more than 30%), but also and supported five fisheries management plans, a national fleet management plan, and a new licensing system, that contributed to the rebuilding of fish stocks and improved fisheries value chains. In financial terms, the bonds guaranteed an economic internal rate of return (EIRR) of 7.1% with a net present value of $1 million, the fish processed saw an increase in prices of about 156%, and local by-catch sales rose from 10% to 64% between 2018 and 2023.

This example not only was the pioneer in emitting blue bonds but also shows the immense potential that such instrument can have if backed by an enabling framework. Blue bonds could go beyond just creating financial innovation, they can become drivers of systemic change. To scale this successful example, there will be need to reduce transaction costs, enhance impact verification, and build market confidence, but with the right mechanisms it has already proven its potential of scaling as a widespread solution for financing ocean sustainability.

Resources

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