



Blue bonds: A growing resource for sustainability financing

In the Spotlight
November 2023

Key Insights

- Under stress from a variety of sources and severely underfunded, many water resources are in dire need of investment.
- Blue financing could support projects spanning regions, sectors, and asset classes, offering possibilities for fixed income diversification.
- Blue bonds are used exclusively for funding or refinancing ocean-friendly and other clean water projects.

Issuance of sustainable debt has exploded over the past 10 years as investors seek investment returns by allocating capital toward sustainability efforts. This trend is likely to continue as climate change-related challenges become increasingly frequent and disruptive, and several governments have responded by deploying increasing amounts of capital to sustainable projects.

Increasing degradation of inland water and ocean ecosystems have created an urgent need for solutions. Blue bonds are

becoming an innovative means to finance marine projects as well as for water resource management. Blue financing is an emerging area of sustainable finance, with growing interest from investors and issuers alike. A subset of green financing, blue bonds and loans provide funds for ocean and water resource management projects while green bonds finance a broader set of environmental projects.

To contextualize the cost of ocean decline in economic terms, the United Nations (UN) Environment Programme Finance



Matt Lawton, CFA
Portfolio Manager, Global Impact Credit Strategy



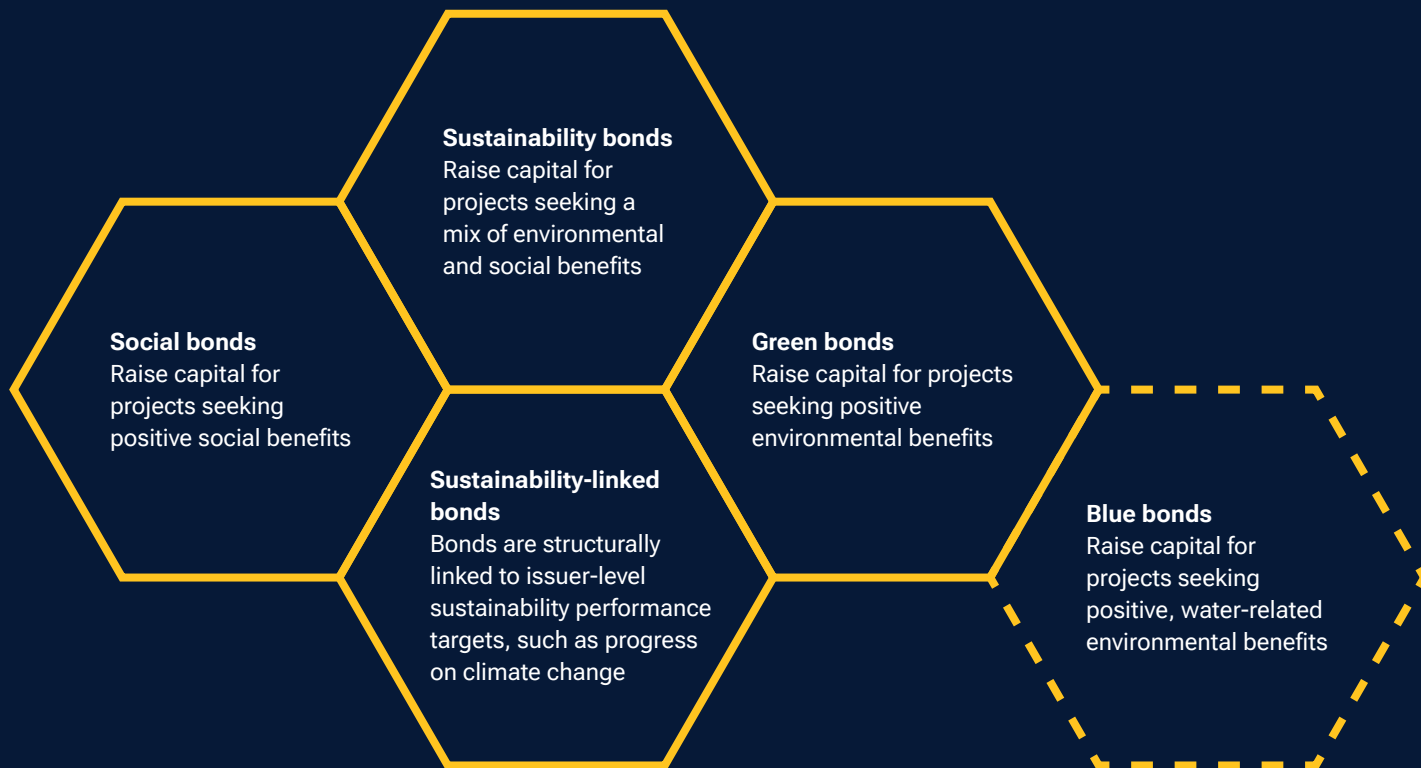
Tongai Kunorubwe, CFA
Head of ESG, Fixed Income

Initiative estimates that ocean-linked sectors contribute USD 2.5 trillion in value to the global economy and support over 30 million jobs. Additionally, the ocean provides a vital source of protein to 3 billion people, and its ecosystems are significant mitigators of climate change.

Access to safe, clean, and accessible water is in short supply for billions of people. Shortages are exacerbating agricultural challenges and hindering humanitarian efforts. Meanwhile, oceans generate oxygen, absorb excess heat and

The sustainable debt market

(Fig. 1) The main types of sustainable debt



As of November 2023.
Source: T. Rowe Price.

carbon emissions produced by human activity, and support vital ecosystems. Yet they are under threat from climate change, pollution, overfishing, and habitat damage, among a host of other pressures.

Blue bonds in sustainable finance

The sustainable bond market comprises green, blue, social, sustainability, and sustainability-linked bonds. The sustainable bond market has experienced rapid growth in recent years, both in terms of size, surpassing USD 1 trillion annually, and the breadth of impact themes. Despite this, it remains quite small compared with traditional debt markets. Moreover, the UN has stated that sustainable projects have been underfunded, estimating that a USD 5–7 trillion annual investment is needed to meet Sustainable Development Goals (SDGs), underscoring the urgency and need for additional investment.

Blue bonds could help accelerate the growth of the sustainable bond market while facilitating capital flow to address this funding gap, and recent industry guidance can help investors direct capital toward projects aligned with SDGs. Asset managers, in their role of enabling investors to deploy capital at scale, can act as a catalyst for positive change in the sustainable development and preservation of finite shared water resources.

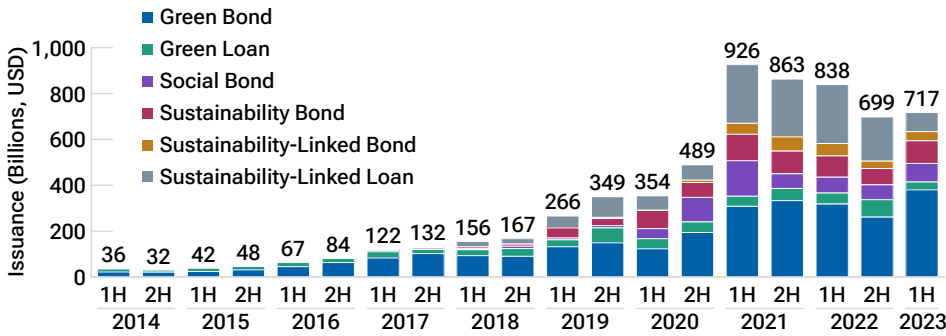
Frameworks for sustainable projects

All UN members adopted the 17 SDGs in 2015 that defined specific targets to be met by 2030. The SDGs provide a blueprint of global goals to achieve a sustainable future for all. Though progress has been slow, issuance of investments aligned with SDGs has picked up.

Importantly, the International Finance Corporation, a member of the World Bank Group, generated guidelines for blue finance, building on the International Capital Markets Association's principles and guidelines for sustainable bond issuance. These guidelines help to inform issuers and investors alike about expectations to be met to use the blue bond label and avoid the potential for "bluewashing"—the inadvertent or intentional misrepresentation of the blue and broader sustainability characteristics of a financial product and/or of the sustainable commitments and/or achievements of an issuer. Currently, the vast majority of labeled sustainable bonds align with these guidelines. Blue bonds and loans are used exclusively for financing ocean-friendly or clean water projects. Sovereigns, development banks, quasi-sovereigns, and corporate issuers, among others, can finance projects that align with UN SDG 6 (clean water and sanitation) and SDG 14 (life below water) via blue bonds or loans.

The sustainable debt market has increased

(Fig. 2) Annual sustainable debt issuance by instrument type



As of June 30, 2023.

Sources: BloombergNEF and Bloomberg Finance L.P.

Water resource pressure points

A variety of challenges—chiefly water scarcity, pollution and degradation, and risks to marine ecosystems—are stressing global water resources and limiting global growth.

Water scarcity

While water covers over 70% of the Earth's surface, increasing demand and unpredictable supply have led to significant accessibility challenges for an estimated 2 billion people. Clean water is essential to health, food security, poverty reduction, and economic stability.

Additionally, climate change has exacerbated the unpredictability of water availability, spurring water management challenges globally. The impacts of water scarcity are made worse by pollution contaminating water sources, making it unusable for many purposes. Pollution from oil spills, the shipping industry, chemical and industrial waste, and runoff from agriculture are degrading the marine ecosystem. Trash, notably from plastic, is another form of pollution. The World Bank estimates that USD 114 billion is needed each year through 2030 to achieve its clean water goal (SD6).

Biodiversity

The severe deterioration of biodiversity—the forms of life in an ecosystem—is in part evidenced by the rapid acceleration in the extinction of species. We believe that preserving biodiversity is essential to the long-term social and economic development of humanity and that biodiversity loss and climate change are fundamentally interlinked twin crises. The UN included SDG 14 (life below water) in response to concerns about stress on marine ecosystems. To date, it is the least funded SDG.

Oceans are the world's largest natural carbon sinks, which can absorb more carbon than they produce. Carbon sinks play a key role in controlling climate change as they absorb significant amounts of human-generated greenhouse gas emissions. By absorbing carbon from the atmosphere, the ocean is growing more acidic and directly harming some marine animals.

Addressing pressure points

The blue economy comprises activities associated with preserving the ocean and using them in a sustainable way to develop economies and improve livelihoods. Blue bonds may provide a tool for investors seeking to contribute to better environmental outcomes. As with any fixed income investment, blue bonds

“Clean water is essential to health, food security, poverty reduction, and economic stability.”

carry investment risks, which include credit risk and interest rate risk. In addition, emerging markets are less established than developed markets and therefore involve higher risks.

The world's policymakers, governments, investors, and individuals alike all have an important role to play in the blue economy. The finance industry can provide some of the much-needed capital through innovative solutions such as blue bonds to help support and enhance ocean sustainability, mitigate against the threats of climate change, and improve access to clean water. These projects historically have been underfunded. As the urgency to face these struggles increases, so, too, does the need for investment. While a nascent market today, blue bonds offer

an opportunity for investors seeking to diversify their portfolios and invest directly in issuers and projects seeking to generate positive and measurable impact.

While blue bonds can support projects anywhere, we see heightened pressures in developing economies where capital is most scarce, spanning regions and sectors. Northern Africa and Western Asia are water-stressed regions, while Latin America's needs are more focused on aquaculture and agriculture, and Asia must contend with elevated levels of plastic pollution.

In addition to regional considerations, projects that support water resources and can be financed using blue bonds and loans span many sectors.



Blue financing mobilizes capital to projects addressing some of the challenges facing global water resources.

How blue bonds support the blue economy

(Fig. 3) Estimated costs of identified activities to support water resources by sector.



Transportation

Nearly 80% of international trade of goods is transported by ship. Transitioning the sector to low carbon could require over USD 1 trillion in investment.¹



Renewable Energy

Offshore wind energy provides an alternative energy source that produces sharply lower carbon emissions and is expected to expand notably, at an estimated cost of USD 840 billion.²



Aquaculture

In order to keep up with demand, sustainable aquaculture will need nearly USD 200 billion in capital investments over the next 10 years.³



Utilities

As the global population grows, the demand for clean, reliable water and effective wastewater management increases. Estimated needs are in excess of USD 20 trillion by 2050.⁴

¹ Source: UNCTAD (2023).

² Source: International Energy Agency (2019).

³ Source: Nature Conservancy (2019).

⁴ Source: World Water Council and OECD (2015).

INVEST WITH CONFIDENCE™

T. Rowe Price identifies and actively invests in opportunities to help people thrive in an evolving world, bringing our dynamic perspective and meaningful partnership to clients so they can feel more confident.

Important Information

This material is being furnished for general informational and/or marketing purposes only. The material does not constitute or undertake to give advice of any nature, including fiduciary investment advice, nor is it intended to serve as the primary basis for an investment decision. Prospective investors are recommended to seek independent legal, financial and tax advice before making any investment decision. T. Rowe Price group of companies including T. Rowe Price Associates, Inc. and/or its affiliates receive revenue from T. Rowe Price investment products and services. **Past performance is not a reliable indicator of future performance.** The value of an investment and any income from it can go down as well as up. Investors may get back less than the amount invested.

The material does not constitute a distribution, an offer, an invitation, a personal or general recommendation or solicitation to sell or buy any securities in any jurisdiction or to conduct any particular investment activity. The material has not been reviewed by any regulatory authority in any jurisdiction.

Information and opinions presented have been obtained or derived from sources believed to be reliable and current; however, we cannot guarantee the sources' accuracy or completeness. There is no guarantee that any forecasts made will come to pass. The views contained herein are as of the date written and are subject to change without notice; these views may differ from those of other T. Rowe Price group companies and/or associates. Under no circumstances should the material, in whole or in part, be copied or redistributed without consent from T. Rowe Price.

The material is not intended for use by persons in jurisdictions which prohibit or restrict the distribution of the material and in certain countries the material is provided upon specific request. It is not intended for distribution to retail investors in any jurisdiction.

DISCLOSURE CONTINUES ON THE FOLLOWING PAGE.

Important Information (cont.)

Australia—Issued by T. Rowe Price Australia Limited (ABN: 13 620 668 895 and AFSL: 503741), Level 28, Governor Phillip Tower, 1 Farrer Place, Sydney NSW 2000, Australia. For Wholesale Clients only.

Brunei—This material can only be delivered to certain specific institutional investors for informational purpose only. Any strategy and/or any products associated with the strategy discussed herein has not been authorised for distribution in Brunei. No distribution of this material to any member of the public in Brunei is permitted.

Canada—Issued in Canada by T. Rowe Price (Canada), Inc. T. Rowe Price (Canada), Inc.'s investment management services are only available to Accredited Investors as defined under National Instrument 45-106. T. Rowe Price (Canada), Inc. enters into written delegation agreements with affiliates to provide investment management services.

Colombia, Chile, Mexico, Peru, Uruguay—This material is prepared by T. Rowe Price International Ltd - Warwick Court, 5 Paternoster Square, London, EC4M 7DX which is authorised and regulated by the UK Financial Conduct Authority - and issued and distributed by locally authorized distributors only. For professional investors only.

DIFC—Issued in the Dubai International Financial Centre by T. Rowe Price International Ltd which is regulated by the Dubai Financial Services Authority as a Representative Office. For Professional Clients only.

EEA—Unless indicated otherwise this material is issued and approved by T. Rowe Price (Luxembourg) Management S.à r.l. 35 Boulevard du Prince Henri L-1724 Luxembourg which is authorised and regulated by the Luxembourg Commission de Surveillance du Secteur Financier. For Professional Clients only.

Hong Kong—Issued in Hong Kong by T. Rowe Price Hong Kong Limited, 6/F, Chater House, 8 Connaught Road Central, Hong Kong. T. Rowe Price Hong Kong Limited is licensed and regulated by the Securities & Futures Commission. For Professional Investors only.

Indonesia—This material is intended to be used only by the designated recipient to whom T. Rowe Price delivered; it is for institutional use only. Under no circumstances should the material, in whole or in part, be copied, redistributed or shared, in any medium, without prior written consent from T. Rowe Price. No distribution of this material to members of the public in any jurisdiction is permitted.

Korea—This material is intended only to Qualified Professional Investors. Not for further distribution.

Mainland China—This material is provided to qualified investors only. No invitation to offer, or offer for, or sale of, the shares will be made in the mainland of the People's Republic of China ("Mainland China", not including the Hong Kong or Macau Special Administrative Regions or Taiwan) or by any means that would be deemed public under the laws of the Mainland China. The information relating to the strategy contained in this material has not been submitted to or approved by the China Securities Regulatory Commission or any other relevant governmental authority in the Mainland China. The strategy and/or any product associated with the strategy may only be offered or sold to investors in the Mainland China that are expressly authorized under the laws and regulations of the Mainland China to buy and sell securities denominated in a currency other than the Renminbi (or RMB), which is the official currency of the Mainland China. Potential investors who are resident in the Mainland China are responsible for obtaining the required approvals from all relevant government authorities in the Mainland China, including, but not limited to, the State Administration of Foreign Exchange, before purchasing the shares. This document further does not constitute any securities or investment advice to citizens of the Mainland China, or nationals with permanent residence in the Mainland China, or to any corporation, partnership, or other entity incorporated or established in the Mainland China.

Malaysia—This material can only be delivered to specific institutional investor. This material is solely for institutional use and for informational purposes only. This material does not provide investment advice or an offering to make, or an inducement or attempted inducement of any person to enter into or to offer to enter into, an agreement for or with a view to acquiring, disposing of, subscribing for or underwriting securities. Nothing in this material shall be considered a making available of, solicitation to buy, an offering for subscription or purchase or an invitation to subscribe for or purchase any securities, or any other product or service, to any person in any jurisdiction where such offer, solicitation, purchase or sale would be unlawful under the laws of Malaysia.

New Zealand—Issued by T. Rowe Price Australia Limited (ABN: 13 620 668 895 and AFSL: 503741), Level 28, Governor Phillip Tower, 1 Farrer Place, Sydney NSW 2000, Australia. No Interests are offered to the public. Accordingly, the Interests may not, directly or indirectly, be offered, sold or delivered in New Zealand, nor may any offering document or advertisement in relation to any offer of the Interests be distributed in New Zealand, other than in circumstances where there is no contravention of the Financial Markets Conduct Act 2013.

Philippines—ANY STRATEGY AND/ OR ANY SECURITIES ASSOCIATED WITH THE STRATEGY BEING DISCUSSED HEREIN HAVE NOT BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION UNDER THE SECURITIES REGULATION CODE. ANY FUTURE OFFER OR SALE OF THE STRATEGY AND/ OR ANY SECURITIES IS SUBJECT TO REGISTRATION REQUIREMENTS UNDER THE CODE, UNLESS SUCH OFFER OR SALE QUALIFIES AS AN EXEMPT TRANSACTION.

Singapore—Issued by T. Rowe Price Singapore Private Ltd. (UEN: 201021137E), 501 Orchard Rd, #10-02 Wheelock Place, Singapore 238880. T. Rowe Price Singapore Private Ltd. is licensed and regulated by the Monetary Authority of Singapore. For Institutional and Accredited Investors only.

South Africa—Issued in South Africa by T. Rowe Price International Ltd (TRPIL), Warwick Court, 5 Paternoster Square, London EC4M 7DX, is an authorised financial services provider under the Financial Advisory and Intermediary Services Act, 2002 (Financial Services Provider (FSP) Licence Number 31935), authorised to provide "intermediary services" to South African Investors. TRPIL's Complaint Handling Procedures are available to clients upon request. The Financial Advisory and Intermediary Services Act Ombud in South Africa deals with complaints from clients against FSPs in relation to the specific services rendered by FSPs. The contact details are noted below: Telephone: +27 12 762 5000, Web: www.faisombud.co.za, Email: info@faisombud.co.za

Switzerland—Issued in Switzerland by T. Rowe Price (Switzerland) GmbH, Talstrasse 65, 6th Floor, 8001 Zurich, Switzerland. For Qualified Investors only.

Taiwan—This does not provide investment advice or recommendations. Nothing in this material shall be considered a solicitation to buy, or an offer to sell, a security, or any other product or service, to any person in the Republic of China.

Thailand—This material has not been and will not be filed with or approved by the Securities Exchange Commission of Thailand or any other regulatory authority in Thailand. The material is provided solely to "institutional investors" as defined under relevant Thai laws and regulations. No distribution of this material to any member of the public in Thailand is permitted. Nothing in this material shall be considered a provision of service, or a solicitation to buy, or an offer to sell, a security, or any other product or service, to any person where such provision, offer, solicitation, purchase or sale would be unlawful under relevant Thai laws and regulations.

UK—This material is issued and approved by T. Rowe Price International Ltd, Warwick Court, 5 Paternoster Square, London EC4M 7DX which is authorised and regulated by the UK Financial Conduct Authority. For Professional Clients only.

USA—Issued in the USA by T. Rowe Price Associates, Inc., 100 East Pratt Street, Baltimore, MD, 21202, which is regulated by the U.S. Securities and Exchange Commission. For Institutional Investors only.

© 2023 T. Rowe Price. All Rights Reserved. T. ROWE PRICE, INVEST WITH CONFIDENCE, and the Bighorn Sheep design are, collectively and/or apart, trademarks of T. Rowe Price Group, Inc.