

Analyzing the Paradigmatic Impact of Seychelles Blue Economy Financing Model

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Abstract: Seychelles is regarded as the first country to implement a debt-for-nature swap (marine conservation) and blue bond finance model. The goal of the initiative was to secure funding for the preservation of the ocean ecosystem and empower fishermen and women with facilities and skills for value addition in the fishery industry. Since the launch of the innovative blue economy finance framework in 2015, the phenomenon has attracted considerable attention in the literature and policy environment. This development bolsters the visibility of the most underfunded Sustainable Development Goal (Goal 14), however, there has been a limited study on the paradigmatic impact of the finance model. This study argues that Seychelles' blue economy finance model has not only created opportunities for increasing blue funding. But has, in addition, provided a practical financing roadmap that addresses ecological issues through a human-centered approach. This unrecognized impact is significant given the popular debate between critics of ocean preservation and ecological security proponents. The paper argues that the Seychelles' debt-for-nature and blue bond initiatives although ecologically conscious have designed collaborative programs to include the views of private landowners, fishermen and women, civil society organizations, and private landowners. This collaborative and human-centered approach to conservation has enabled fishers to absorb the livelihood impact of fishing regulation and marine zone protection. Although with its challenges, this approach to marine conservation shows that the policymakers in Victoria understand the significance of the marine ecosystem as well as the human agency in controlling overfishing and other harmful activities that may impact the sustainability of life underwater. The study leveraging a qualitative methodology and content analysis technique argues that the Island African country seems to have adopted a human-centered approach in its blue economy framework. Furthermore, the study identifies the challenges that may be associated with the blue bond financing model. In addition, the study argues that the popular evangelism for the adoption of the blue bond should be done with recognition of Seychelles' peculiar robust ocean governance framework.

Keywords: Blue Bond, Debt-for-Nature-Swap, Human-centered approach, Blue Economy Finance, Seychelles

Introduction

Seychelles' blue bond¹ and debt-for-nature-swap initiative (hereinafter referred to as DNS)² have become a reference point for promoters of sustainable blue economy finance. Many argue that the finance mechanism has the potential to enable developing littoral states to secure funding for the least funded Sustainable Development Goal (SDG 14) (Mathew & Robertson, 2021, p. 245). The existing literature makes it evident that scholars have expansively analyzed the blue bond and DNS initiatives. However, it appears that there is a limited

¹ The World Bank (2018) defines the blue bond as "a debt instrument issued by governments, development banks or others to raise capital from impact investors to finance marine and ocean-based projects that have positive environmental, economic and climate benefits."

² According to African Natural Resources Management and Investment Centre (2022:21) DNS "involves forgiving a portion of a country's sovereign debt in exchange for conservation commitments."

study of the paradigmatic impact of the initiatives and how Seychelles' blue bond issuance has inspired the new ICMA blue bond guidelines. From the face of the blue bond, without a careful analysis, one may conclude that the project has taken a radical ecological approach. This is not completely the case given that the project even though with its challenges, has adopted a human-centered approach to enable private landowners, fishermen and women, researchers, and non-governmental organizations to contribute to the execution of blue economy projects. This approach assuages the impact of fish conservation reforms on subsistent fishers. Through their participation in the iteration and execution of programs, they tend to gain clarity on the benefits and challenges of the project. In addition, some projects were designed to benefit private citizens, entrepreneurs, and fishermen directly. Although the success of such initiatives may be contested, the policymakers in Victoria intended to implement an initiative that addresses ecological issues through a human-centered approach.

The adoption of a human-centered approach for Seychelles' blue economy projects is necessary given the demography and economy of Seychelles. The Island country in the Western Indian Ocean derives about 60 percent of its Gross Domestic Product (GDP) from marine resources and tourism (March, Failler, & Bennett, 2023, p.2245). The country also has a large Exclusive Economic Zone measuring up to 1.37 million km² (Secretariat 2020:1). As a result, the livelihood of Seychellois is intrinsically connected to the ocean economy. This reliance on the blue economy and tourism makes any risk to the ocean an existential threat to Seychellois and the state. Even though the country has a considerably stable government with a low corruption perception index, its economy is fragile and susceptible to global disruptions such as the financial crisis of 2007. As a result, before the innovative debt-for-nature swap and blue bond mechanisms, its debt-to-GDP ratio had risen exponentially. In addition, Seychelles does not benefit from developmental aid nor easily get debt cancellation since it reached the status of a high-income country in 2015 which makes the financial burden worse for the archipelagic country.

However, the combination of a rising debt profile and reliance on ocean resources placed the country in a vintage position to pursue a sustainable blue economy campaign as well as to make a good case to raise funds. As a result, in 2015, with the support of the Nation Consultancy (TNC), it agreed to swap its \$21.6 Million debt with the obligation to develop 30 percent of its EEZ into a marine protected zone. In place of the swapped loan, the government of Seychelles issued a \$15 million blue bond in 2018 (Bolliger 2020:4; Mathew & Robertson 2021:224). The process led to the emergence of the SeyyCCAT Which has been instrumental in strategic research and the governance of the blue bond and DNS proceeds. While the blue bond is the first of its kind, the debt-to-nature swap mechanism has been implemented since the 1980s (Bedarff Holznel & Jakobeit, 1989). However, Seychelles' initiative is innovative due to its focus on marine resources and the overall bolstering of the blue economy.

Since the Island country secured the blue bond in 2018, several authors and analysts have written about the innovative debt for ocean conservation and sustainability. Many recommend the mechanism to other countries facing climate and debt crises. While these arguments are well thought out, the paradigmatic impact of the blue economy financing initiative is increasingly significant for future analysis as well as understanding the considerable success of the Seychelles case study. Therefore, this study seeks to make two key contributions.

The first is the recognition of the paradigmatic impact of Seychelles' blue finance initiatives—which in the view of the paper addresses ecological as well as human security issues through a human-centered design³. Thus, this study uses a human-centered ecological security theory to analyze the phenomenon and to center the argument on the process rather than the outcome. This helps one understand the broader theoretical link between the project and the intention of policymakers in Victoria. The study therefore argues that the Blue Bond project is a practical example of the complementarity that exists between ecological security and human security.

Furthermore, the current blue bond literature has yet to examine the influence of blue bond practice on the new ICMA guidelines for blue bond issuance. This is not surprising given that the ICMA only recently released the guidelines in September 2023. Thus, the study seeks to establish the argument that the Seychelles blue bond process influenced the provisions of the new blue bond issuance guideline.

The study in expanding the aforementioned issues shall leverage a qualitative method to analyze Seychelles' blue economy finance model. It will rely on the human-centered ecological security paradigm under the broader environmental security theory to examine the blue bond and the challenges of promoting a climate-friendly policy.

³ Giacomini (2014:610) defines human-centred design as 'a design based on the use of techniques which communicate, interact, empathize and stimulate the people involved, obtaining an understanding of their needs, desires and experiences which often transcends that which the people themselves actually realized

Methodology

This study leverages a qualitative research methodology to analyze key missing pieces from the extant literature on Seychelles' sustainability initiatives focusing primarily on the blue bond and the debt-for-nature swap initiatives. The study uses a constructionism epistemological approach since most claims here are subjective and drawn from existing arguments. Therefore, it relies on secondary sources to espouse the subjective argument that the blue bond and DNS initiatives processes were human-centered approaches toward the actualization of ecological security. Meanwhile, in terms of data analysis, the study adopts a content analysis technique.

Data Collection

This study relies on data from secondary sources such as scholarly publications in open-source databases, textbooks, government policy documents, and the media.

The Human-Centered Ecological Security Paradigm

A significant chunk of ecological security literature focuses on climate change. However, this paper views such existing arguments as viewpoints that may be used to explain broader ecological security issues. While there is a plethora of contrasting paradigms on the relationship between the environmental crisis and security, this study adopts the human-centered approach to ecological security. Baysal & Karakaş (2017, p. 22) identify the dichotomy between the different paradigms of environmental security including one of the sub-paradigms that views climate change as a threat to human security. Brauch (2008, p. 25) argues thus: “The human dimension of global environmental change covers both the contribution and the adaptation of societies to these changes. These processes pose many social, cultural, economic, ethical, and even spiritual questions, such as our motivations for saving and our responsibility to the environment”

In contrast to the advocacy for environmental security that prioritizes human security, ecological security proponents argue that environmental threats should be addressed through the preservation of the environment for the well-being of “contemporary human beings” (future generation) (MacDonald, 2015). A more radical approach is ecocentrism which advocates both for the preservation of living and non-living things (Eckersley, 2005). They contend that the focus on current human needs is not sustainable and makes environmental security objectives vague. While these arguments provide a broader perspective, they focus on human benefit and undermine human agency. Cherry (1995, p. 87) further splits ecological security into three categories. The first is the Nature-Centric which views ecological security as a concept concerned with maintaining “the optimal association among organisms at the micro-level and between organisms and their ecosystem(s) at the macro-level.” Meanwhile, human-centric ecological security views humans beyond mere spoilers but as the ultimate controller of natural resources and nature. The third views humans and the other aspects of the ecosystem as interdependent and indispensable in securing the ecosystem. Zhu, Hashimoto, and Cushman (2023, p.2488) after a literature review argue that several scholars appear to adopt the human-centered ecological security paradigm in their analysis.

While extant literature has exhaustively explicated the issue of the referent object of environmental security, there is a limited focus on human agency. Meanwhile, a significant portion of the environmental crises of today's world are triggered by human activities. Therefore the advocacy for ecological security thinking that recognises the need to preserve the environment as well as ameliorate the impact of conservation on livelihood appears to be a noble one. If conservation has any nexus with human security as this paper suggests, then the approach through which environmental preservation is implemented becomes significantly essential. It is therefore imperative for policymakers to involve affected persons and welfare groups such as civil society organizations in the planning, iteration, and execution of conservation projects. This approach is more sustainable because the human actor now becomes the driver of environmental conservation and adopts a sustainable lifestyle that protects the environment. This appears to be the approach of the Seychelles government in its blue economy project which has used part of the gains from its blue finance model to provide platforms for private property owners, fishermen, women, researchers as well as civil society organizations to participate in the implementation of Seychelles blue economy aspirations. Although conservation projects including the blue bond often assume a top-bottom approach a human-centered implementation might produce a more sustainable outcome.

It should be noted that a human-centered approach here does not mean that human needs should take priority over ecological security by any means necessary. Rather, the paper argues that in executing ecological conservation

projects, affected stakeholders should be factored in the planning, iteration, and execution phases. This approach reduces conflict of interest and fosters a common agenda for government and interested parties.

Seychelles Blue Finance Initiatives

Seychelles' economy significantly relies on the ocean economy to thrive. Tourism and Fishery are the major contributors to Seychelles' GDP (Saddington, 2023, p. 1). As a result, the blue economy and SDG14 are not new conversations to the Eastern African state. In 2015, the Seychelles government reached an agreement with the Nature Conservancy (hereinafter referred to as TNC and the Paris Club for the TNC to buy out the country's debt owed to the Paris Club. The TNC provided a \$15.2 million loan, meanwhile, impact investors provided a \$ 5 million grant. In return, the Seychelles government was obligated to extend its 0.03 percent marine protected area to 30 percent (Yali & Ziye, 2020). In 2015, the SeyCCAT Act created the Seychelles Conservation and Climate Adaptation Trust (hereinafter referred to as SeyCCAT) and saddled it with receiving and allocating the loan from the TNC. This obligation includes issuing a \$20.2 million loan to the government to settle the 21.6 million owed to the Paris Club at an agreed 6.5 % discount. The Seychelles government has an obligation to repay the 20.2 million loans to SeyCCAT at an agreed expanded due date (Yali & Ziye, 2020).

In place of the swapped debt, Seychelles issued a blue bond in 2018 and raised \$15 million from investors in the United States meanwhile, the IBRD World Bank provided a \$ 5 million guarantee and the GEF supported it with a \$5 Million credit. Part of the proceeds was invested in the blue investment fund (\$13 million). Meanwhile, \$3 million was paid to SeyCCAT for issuance of grants. SeyCCAT in addition to the allocation of the funds in its coffers is mandated to conduct research and provide advisory.

Seychelles' Vision for the Blue Economy

According to Seychelles' Blue Economy Strategic Policy Framework and Roadmap (2018, p.4), Seychelles' blue economy vision from 2018 to 2030 is as follows: "To develop a blue economy as a means of realizing the nation's development potential through innovation, knowledge-led approach, being mindful of the need to conserve the integrity of the Seychelles marine environment and heritage for present and future generations."

Seychelles' reliance on ocean resources for the growth and sustainability of the state and its people means that the blue economy will always be a top priority of policymakers in Victoria. As a result, the country has formulated initiatives and regulations to govern the blue economy. However, this study shall place particular emphasis on the blue bond initiative and the Seychelles' Blue Economy Strategic Policy Framework and Roadmap (2018-2030).

Even though the usefulness of the ocean to Seychelles' economy has never been in doubt, the aspiration of the country significantly needed financial support. As a result, it has leveraged its geography to access funding through the DNS and the blue bond to reduce its debt burden and raise funding for its sustainable blue economy program. One of the groundbreaking achievements of Seychelles' sustainability program has been the 30% conservation of its Exclusive Economic Zone as a protected marine area. This milestone was part of its promise to impact investors and the TNC before the DNS agreement in 2015. The paper, therefore, argues that the geography of Seychelles (an archipelago surrounded by 115 Islands) is a competitive advantage in convincing impact investors as well as recording a decent success in the execution of DNS and blue bond.

The Seychelles Blue Economy Strategic Framework and Roadmap (2018, p. 4) lists "Economic diversification & resilience to reduce economic vulnerability and increased GDP derivation from marine sectors, shared prosperity through the creation of high-value jobs and local investment opportunities, Food security and well-being and Integrity of habitats and ecosystem services, sustainable use, and climate resilience" as the four pillars of its blue economy program.

Indeed, the blue bond is instrumental to the success of Seychelles' blue economy aspirations. The SeyCCAT which controls 20% (\$ 3 million)of the blue bond proceeds (\$15 million) and regulates the marine spatial plan has considerably lived up to expectations given the current ongoing and executed projects. Below is a list of two completed and two ongoing blue grants funded (part of the proceeds from the blue bond) projects:

Table 1. SeyCCAT Projects

Project	Ongoing	Completed	Category	Stakeholders
Community-based ecological wetland rehabilitation, Pasquiere, Praslin.	✓		Restoration of Wetland	Terrestrial Restoration Action Society of Seychelles, Park Authority, Praslin EBA Watershed Committee, Wildlife Club of Seychelles and the local community
Pilot and integration of tracking, logbook, and market traceability tools for co-management of the small-scale fisheries sector in Seychelles	✓		Sustainable Small-Scale Fishery Management	Fishermen and Boat Owners Association (FBOA) ABALOBI – South Africa Collecte Localisation Satellites (CLS) – France.
Piloting voluntary fisheries zone closure on Praslin Island for the benefit of the marine environment and fisher folks		✓	Prevention of excessive harvest of ocean resources	Lasosiasyon Peser Pralen (Praslin Fishers Association), Environmental NGO Anba Lao, Seychelles Fishing Authority
Blue Economy Internship Programme-4th Edition		✓	sustainable development opportunities for young people	SIDS Youth AIMS Hub – Seychelles

The above list of the use of proceeds shows that Seychelles' blue economy framework focuses on both ecological and human security issues. More so, Civil Society Organisations and private property owners as well as fishermen and women are involved in most of the activities. This creates the opportunity for co-creation and iteration. Such a human-centred approach in addition reduces the likelihood of conflict of interest.

What is the Extant Blue Bond standard?

The blue bond is a subset of green bonds under sustainable bonds. Before September 2023 when the International Capital Market Association (ICMA) released the guidelines for blue bond issuance, issuers relied on existing ICMA frameworks to predict basic investor requirements. In addition to the guidelines, issuers are to be on the lookout for additional investor requirements. It is also possible for investors to have their unique framework, thus, the ICMA blue bond Guideline (2023, p.12) advises issuers to work with legal experts, environmental scientists, and personal bankers for a smooth process.

The ICMA Guidelines provide for pre-issuance and post-issuance obligations. The former stipulates that the issuer must create a bond framework, that will be a public document outlining how an issuer intends to align with the global Sustainable Development Goals. The Guideline in addition stipulates that a blue bond framework should adopt the following governing principles:

1. Use of proceeds
2. Process for project evaluation and selection
3. Management of proceeds
4. Reporting (Allocation and Impact Reporting).

Furthermore, the guideline stipulates that an issuer must clearly state the project categories. These projects must conform to environmental standards. Issuers are also required to state how they will manage and mitigate environmental and social risks in the process of mapping out projects that will be developed with the proceeds of the

blue bond. The guideline and the United Nations Environment Programme Finance Initiative recommends a long list of projects that should be excluded from financed projects. Under the guidelines, issuers are advised to exclude the following broad project themes:

(i) Coastal Climate Adaptation and Resilience (ii) Marine Ecosystem Management, Conservation, and Restoration (iii) Sustainable Coastal and Marine Tourism (iv) Sustainable Marine Value Chains (a) Sustainable Marine Fisheries Management (b) Sustainable Aquaculture Operations (c) Sustainable Downstream Operations, Including Transparency and Traceability Across Supply Chains (v) Marine Renewable Energy (vi) Marine Pollution (a) Wastewater Management (b) Solid Waste Management (c) Resource Efficiency and Circular Economy (d) Non-point Source Pollution (vii) Sustainable Ports (viii) Sustainable Marine Transport.

Table 2. An example of excluded projects under the ICMA Guide

1. COASTAL CLIMATE ADAPTATION & RESILIENCE	
EXCLUSIONS: Grey infrastructure in ecologically sensitive areas	
Impact Reporting	
Example Project Output	Example Impact Indicators
Nature-based solutions to coastal protection implemented	Area benefiting from improved climate resilience and disaster risk management (ha) Reduction in land-loss from coastal erosion (km ²)

In addition to the items in the above theme, the guideline endorses the United Nations Environment Program Finance Initiative recommendations on items that should not be funded. The document stipulates that issuers should exclude practices under the following broad categories that do not conform to international laws and best practices or are self-sufficient without additional funding from the blue economy framework:

1. Seafood
2. Ports
3. Marine Transportation
4. Marine renewable energy
5. Coastal and marine tourism
6. Coastal Resilience: Infrastructure and Nature-based Solutions
7. Waste prevention and management.

Please see an example of a table of an activity excluded from fundable projects under sea foods below:

Table 3. An excluded blue project under the United Nations Environment Program Finance Initiative recommendations.

Criterion	Scenario	Recommendation	Verification (basic)	Verification (Extended)
1. Location and siting of farms	Evidence that owned and operated farms or farms in supply chain are not located in a legally designated aquaculture zone or do not have the required legal permit or licence, including within legally protected areas that do not allow multiple uses, such as High Conservation Value Areas or RAMSAR or UNESCO World Heritage Sites	Do not finance	Company disclosure	Public records RAMSAR sites HCVA UNESCO

The United Nations Environment Program Finance Initiative has provided the above criterion and several others under the categories to regulate the fundable projects under the blue bond initiative.

The guideline also stipulates that a blue bond issuer must contact the services of a second party who is mandated to offer an external review of the alignment of the blue bond with the four components of the broader green bond principles. The issuer is further mandated to make this information public on its official website.

Furthermore, the ICMA blue bond guideline (2023) makes provision for a post-issuance. First, the issuer is advised to allocate and manage the funds transparently. It must monitor and ensure the management of the net proceeds of the bond with periodic external audits. The external auditor is saddled with the responsibility of auditing the internal monitoring process and the allocation of funds derived from net profit. Second, the issuer is mandated to issue an annual report on the allocation of resources to projects and the impact such projects are expected to yield. Allocation and Impact Reporting. The principles recommend annual reporting of both allocations to projects and their expected impact. This report enables investors to track the impact of their investment. The guideline provides the following as impact indicators:

“(i) Coastal Climate Adaptation and Resilience (ii) Marine Ecosystem Management, Conservation, and Restoration (iii) Sustainable Coastal and Marine Tourism (iv) Sustainable Marine Value Chains (v) Marine Renewable Energy (vi) Marine Pollution (vii) Sustainable Ports (viii) Sustainable Marine Transport.”

The final phase of the post-issuance stage is the engagement of an external body of professionals to audit the management of the proceeds from the blue bond. The external auditor is charged with the responsibility of verifying the reports emanating from the internal audit of allocated funds.

The Paradigmatic Impact of Seychelles Blue Finance Initiatives

There are two paradigmatic contributions of the Seychelles blue economy framework to blue economy financing in theory and practice. The first notable impact of the Seychelles blue economy finance model is the road map it has created for blue bond issuance which in the view of this paper has inspired the formulation of the ICMA guidelines (2023). For example, the SeyCCAT list of excluded projects from the blue bond financing contains most of the items provided under the ICMA blue bond guidelines. In addition, the steps and requirements in the new ICMA rules including the employment of internal and external auditors were practiced by the SeyCCAT. The internal and external audit reports of SeyCCAT are open and can be found on the internet. The new ICMA Blue Bond Guidelines, appear to have followed the trajectory of SeyCCAT’s implementation strategy, especially in areas like monitoring of allocations and project, and the recognition of the agency of local communities and how marine protection impact the social and economic lives of people living in protected areas.

Secondly, SeyCCAT’s implementation mechanism appears to consider the human agency and the social and economic impact on fishermen and women. As a result, most of its projects are collaborative and inclusive of small-scale fishers. In addition, it has issued grants for sensitization projects and initiatives to increase the capacity of fishermen and women to scale their businesses and leverage new market opportunities.

The Seychelles blue finance model is groundbreaking in terms of how it leverages a human-centered approach to implement its blue economy model. However, as with external finance programs, the DNS and the blue bond by their nomenclature are top-down initiatives. As a result, many affected stakeholders such as fishermen and private landowners may have played a minute role in the preliminary processes. This therefore means that even though the Seychelles government’s implementation of the blue bond is inclusive there is a likelihood of some disgruntled groups and conflict of interest.

Challenges of the New Blue Economy Finance Model

Since Seychelles issued the blue bond in 2018 more countries have explored the blue finance model. Scholars have often cited the Seychelles case study to argue that a blue bond is an innovative option that has the potential to increase financing of the blue economy. That said, a few challenges can impede the success of the process. A blue bond issuer may encounter challenges either in the issuing phase or the implementation phase. The former is the point at which the issuer offers the bond, meanwhile, the latter is the stage starting from the allocation of the bond proceeds to the payment of interest and capital.

At the issuing phase, blue bond issuers may face conflict of interest challenges with prospective investors. March, Failler, and Bennett (2023, p. 2245) argue that investors may cheerily pick a blue project since one of the incentives for investing is an anticipated investment in an interesting area in the ocean economy. Therefore, the national aspiration of an issuer might be at variance with the interest of investors. Furthermore, blue bonds are not as flexible as usual government bonds, thus the use of proceeds may not be flexible to cater to the changing needs of the issuer.

The green economy question is yet another challenge of the blue bond model. Seychelles for example intends to explore oil resources despite being a renowned global leader in sustainable blue economy practices (Bolliger 2020, p. 7). Thus, countries that rely on oil resources as their major economic sustainer yet pursue a sustainable blue economy finance model may be criticized for blue washing and lack of transparency.

Furthermore, Seychelles is a unique case study because of its considerably strong democratic institution, high GDP per capita, and low poverty rate. Thus, Bolliger (2020, p. 7) argues that investors must ensure adequate palliatives are factored into the blue bond agreement especially when the issuing state is a dictatorship. This helps to ameliorate the livelihood impact of fishery conservation and marine spatial plans in general on affected stakeholders.

In the final analysis, the combination of the debt-for-nature swap and the blue bond does not discharge an existing loan. Rather, it increases the external debt profile of the issuing state. Therefore, a country that has a fragile ocean economy governance structure may end up accruing more debt with insignificant return on investment.

Conclusion

This study analyzed the Seychelles innovative blue economy finance model focusing primarily on the process rather than its outcome. The main argument of the paper is that the Seychelles employs a human-centered approach to ecological security issues which engenders co-creation and iteration. Furthermore, the paper highlighted that despite the human-centered approach, initiatives such as the blue bond and the DNS are intrinsically top-bottom. As a result, there is the likelihood of exclusion of non-state actors at the initial stage which can be problematic. In addition, the study identified challenges that issuing states may encounter in the cause of issuing blue bonds.

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