SEYCHELLES' BLUE FINANCE:
A Blueprint for Wider Adoption?

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noun
the applied science of financial economics.

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Introduction

Something drew you to this study.

This is not surprising, given widespread interest in “Blue economy” innovations for oceanic health, and the enabling “blue finance” transactions. National leaders are interested in improving and sustainably harnessing natural resources for national development. Environmental advocates are seeking new tools to employ in their advocacy. International and local investors may seek a wider impact beyond financial returns alone. Industry leaders may desire to understand how blue finance arrangements affect their industry.

Despite these differing perspectives, almost all people interested in “blue finance” want to know what it is, and how it is linked to ocean health. This is why the Seychelles “blue finance” transactions in recent years have generated such international interest. Despite this widespread interest, media releases provide scant detail on how the deals are actually structured, and how they are linked to oceanic health.

For this reason, this report provides a deeper dive into blue finance by addressing the following questions:

- How were the Seychelles transactions structured? How did they work?
- How are these transactions linked to arrangements that seek to promote oceanic health? and
- How do these arrangements compare with traditional means of managing marine resources?

Reading this report is worth your effort because the reality of these transactions differs significantly from the simplified descriptions provided up to this point. Enjoy.

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Acknowledgements and Disclaimer

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This Finology review of the Seychelles' Blue Finance transactions was conducted from publicly-available information, without the benefit of access to internal documents and personnel involved in the transactions.

The views expressed in this report are solely those of its author.

1 PROP is funded by the World Bank International Development Agency (IDA) and the Global Environment Facility (GEF).

The Seychelles at a Glance

Population: 96,000

Capital city: Victoria

Area: 455km^2

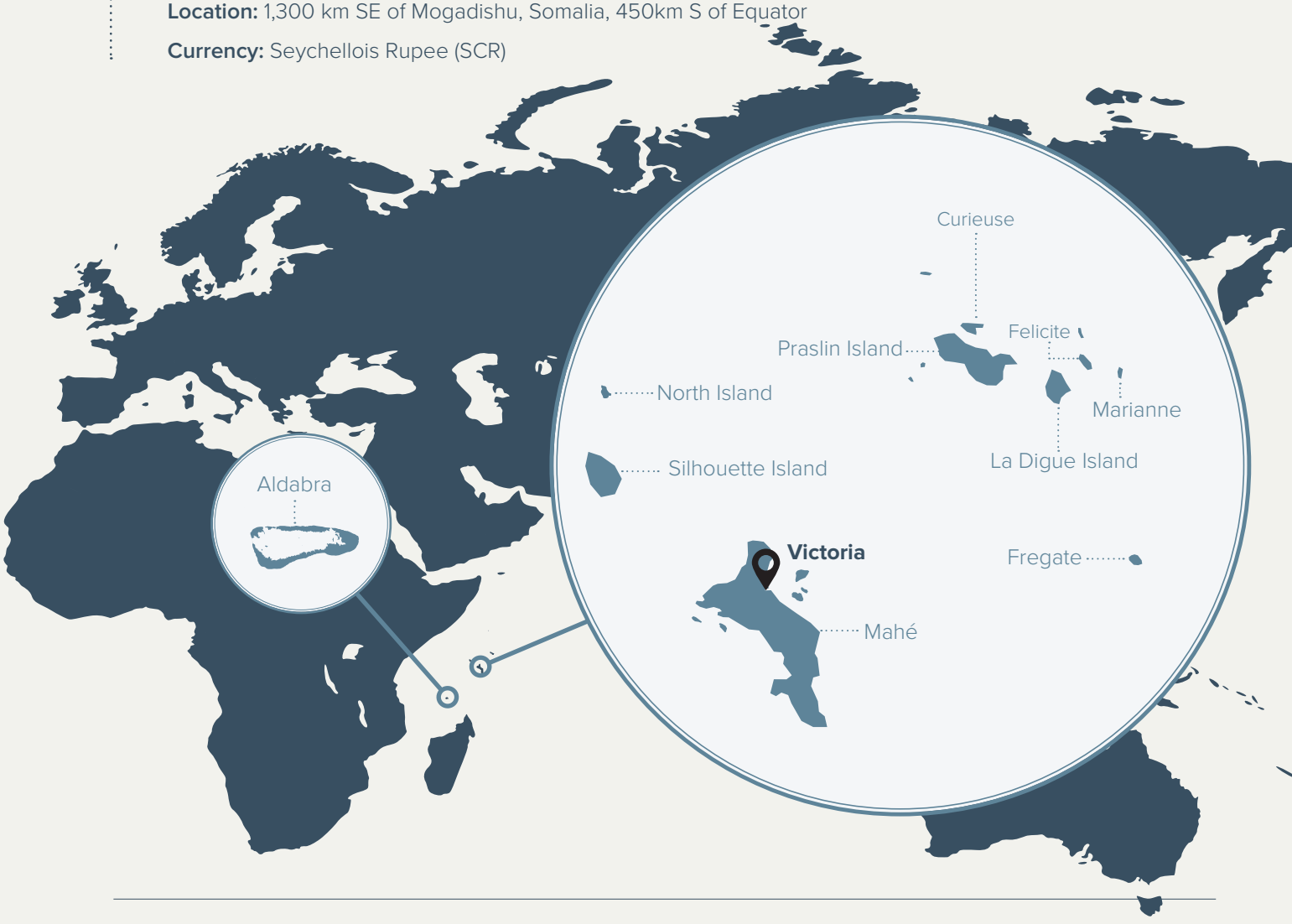
EEZ area: 1.34m km^2

GDP: US$ 2.75b (2017 est.)

Languages: Seselwa Creole, English, French

Location: 1,300 km SE of Mogadishu, Somalia, 450km S of Equator

Currency: Seychellois Rupee (SCR)



Chronology of Events Mentioned in Report

(with acronym definitions)

Nov 19, 1982	Aldabra Atoll designated as a UNESCO World Heritage Site.
Dec 20, 1993	The Seychelles becomes a party to the Convention on Biological Diversity.
Oct 2006	The Seychelles issues a US$200m Eurobond, with bullet repayment in 2011. A $30m supplement to the Eurobond is issued the following year, along with a €54.7m private placement.
Summer 2008	Seychelles defaults on €54.7m private placement.
Oct 2008	Seychelles defaults on $230m Eurobond.
April 2009	Seychelles reaches agreement with eight Paris Club countries to cancel 45% of $180m debt, with remaining debt to be repaid over 18 years (final maturity in 2027).
May 2009	UNESCO's Intergovernmental Oceanographic Commission (IOC) publishes a step-by-step guide for Marine Spatial Planning (MSP).
Feb 2, 2010	Aldabra is designated as a 43,900 ha Ramsar site under the Convention on Wetlands, an intergovernmental treaty.
Oct 2010	Parties to the Convention on Biological Diversity, including Seychelles, agree to the Aichi Biodiversity Targets that include commitment to goal of conserving 10% of marine areas in "protected areas and other effective area-based conservation measures."
2012	**Seychelles establishes a goal of expanding marine protected areas to 30% of its Exclusive Economic Zone (EEZ).**
2014	Seychelles has in place a two-phase approach (with three milestones) for achieving its goal of expanding marine protected areas to 30% of EEZ by 2020.
Feb 25, 2015	Paris Club and Seychelles agree to a deal to support ocean conservation.
Nov 19, 2015	**Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) is established** by legislation; the Conservation and Climate Adaptation Trust of Seychelles Act 2015.
March 4, 2016	**Seychelles buys back $21.4m of its external public debt** at a 6.5% discount with $20.2m funds provided to SeyCCAT by (a) philanthropic grants ($5.0m) and (b) a loan from NatureVest ($15.2m loan at 3%). Seychelles now repays a $21.4m debt to SeyCCAT, with matching payments through to NatureVest for $15m loan. The Seychelles' remaining debt servicing payments on $6.4m loan remain with SeyCCAT for the Blue Grants Fund (BGF) and the Blue Endowments Fund (BEF).
April 11, 2016	The World Bank advances $1,211,000 to the Seychelles to facilitate preparation of the World Bank's proposed SWIOFish3 project.

Sept 29, 2017	The World Bank outlines and approves a selection of financing of the Seychelles' funding obligations under SWIOFish3. The components include: 1. $5.0m loan from the International Bank for Reconstruction and Development (IBRD); 2. $5.29m grant from the Global Environment Facility (GEF); 3. EU€5m guarantee from the IBRD; and 4. $5.0m credit from the GEF's Non-grant Instrument Pilot. Items 3 and 4 are to support the future issuance of the Seychelles Blue Bond.
Oct 15, 2017	The World Bank approves the above package of loans and support. The $5.0m IBRD loan is signed (IBRD-8779), effective April 16, 2018. The $5.0m GEF concessional loan is signed (TF-A5322), effective April 16, 2018.
Feb 2018	The Seychelles announces the creation of two new marine protected areas covering 210,000 km^2 of its EEZ, thus achieving Milestone 1: 15% protection.
April 16, 2018	**SWIOFish3 project effective.**
Oct 29, 2018	**Seychelles launches World's first sovereign blue bond.**
April 2019	The Seychelles legally designates the marine boundaries for Milestone 2 Marine Protected Areas, bringing the total marine protected area to 350,915 km^2, 26% of the Seychelles EEZ, thus meeting and exceeding the Milestone 2: 22.5% protection.
Dec 23, 2019	The Seychelles Blue Investment Fund (BIF) is launched, administered by the Development Bank of Seychelles (DBS).
March 26, 2020	Seychelles President, Danny Faure, announces completion of Phase 2, Milestone 3, with 30% of the nation's EEZ designated for protection.
Sept 30, 2020	SWIOFish3 mid-term review scheduled.
June 30, 2023	SWIOFish3 project completion. Drawdowns cease on $5.0m IBRD loan.
2028	Seychelles Blue Bond will mature.
Feb 15, 2028	First repayment on $5.0m IBRD loan, with twice-yearly repayments for ten years.
Aug 15, 2037	Final repayment on $5.0m IBRD loan.
2057	Final repayment on $5.0m GEF concessional loan.

1 Seychelles Blue Finance

Over the last five years, the Seychelles has featured prominently in the application of innovative financial approaches to environmental challenges. Not surprisingly, this innovative financing has focused on oceanic health, given that this island nation with only 455 km^2 of land has 1.34 million km^2 of ocean within its Exclusive Economic Zone (EEZ). Specifically, the Seychelles has participated in two debt financing initiatives that have provided funding for projects related to increasing the health of its surrounding ocean, as follows:

Figure 1: Two Components of Seychelles Blue Finance

Seychelles Blue Finance	'Debt for Nature' Swap	Blue Bond
Implementation date	March 4, 2016	October 29, 2018
Organizing agency	The Nature Conservancy	The World Bank
Total funding (US$)	$21.6m	$15.0m

These transactions have been widely presented as models to be emulated or replicated elsewhere – both by the agencies that organized the transactions, and by other observers.[2,3] In March 2017, the Seychelles Ministry of Finance, Trade and Economic Planning stated that *"The Blue Bond is expected to have strong replicability potential for other borrowers in the future, by attracting investors to a new field and creating an affordable financing package for the country."* [4]

The 'Debt for Nature' swap's organizing agency, The Nature Conservancy, has subsequently launched a program called Blue Bonds for Conservation, with the stated purpose of applying the Seychelles model in other countries. [5]

> *"Seychelles is working to finalize a marine protection for an area totaling the size of Germany. The Conservancy has identified dozens of coastal and island countries with potential for the first round of 20 debt conversions. Over the next two decades, the program could generate as much as $1.6 billion for marine conservation."*

Given that these two blue finance transactions are spoken of as blueprints, this report describes and evaluates the Seychelles transactions for the purpose of assessing whether such transactions are attractive to island states with similar challenges and opportunities.

The two transactions are described briefly here, with details provided in subsequent sections.

- **The Nature Conservancy's 'Debt for Nature' transaction.** A US$21.6m portion of Seychelles Government debt owed to other countries was repurchased at a discount by the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT). Thus, cash that the Government would have paid to foreign debtholders is now redirected to SeyCCAT, in exchange for agreement to establish MPAs and to participate in an ongoing process of Marine Spatial Planning (MSP). The debt purchase by SeyCCAT was funded via grants

2 Seychelles' Conservation Commitment Comes to Life, The Nature Conservancy Press Release, undated.
"This incredible achievement in Seychelles is a great model for how TNC can use science, innovative financing, and multi-stakeholder negotiations to sustain blue economies and protect high-priority marine habitats in the Western Indian Ocean. By replicating and leveraging our success here, we can move forward with plans to deliver ocean planning and protection at national and regional scales and become a model for the world."

3 Seychelles Swaps Debt for Nature, The Economist, World Ocean Initiative,, April 8,2020.

4 p. 6, Process Framework for SWIOFish3 Project, March 2017. Third South West Indian Ocean Fisheries Governance and Shared Growth Project, The Ministry of Finance, Trade, and Economic Planning, Republic of Seychelles.
An identical quote is also provided in the broadly-contemporaneous IMF document,
Seychelles Climate Change Policy Assessment, IMF Country Report No. 17/162, May 18, 2017.

5 p. 11, Increasing Ocean Protection by 15% in 10 Years, 2019 Annual Report, The Nature Conservancy.

from environmentally minded foundations, and by a low-interest loan provided by NatureVest, the finance arm of The Nature Conservancy. The Nature Conservancy is an international non-Governmental Organization (NGO) based in the Washington, D.C. area, with US$1b annual revenue and over 3,500 employees worldwide.[6]

- **The World Bank's Seychelles Blue Bond transaction.** Three impact investors purchased the US$15m Seychelles Blue Bond.[7] One fifth of the proceeds were channelled into the Blue Grants Fund, administered by SeyCCAT, and the remaining four-fifths established the Blue Investment Fund that will be administered by the Development Bank of Seychelles. The Seychelles Blue Bond is partially guaranteed by the World Bank's International Bank for Reconstruction and Development. Also, the Global Environment Facility provided a concessional $5m loan to cover Blue Bond interest payments.

These two blue finance transactions are integrally related with SeyCCAT, which becomes the organizational vehicle through which the Seychelles operationalizes its activities under SWIOFish3 – the World Bank's Third South West Indian Ocean Fisheries Governance and Shared Growth Project. The integral nature of SeyCCAT and SWIOFish3 is discussed throughout this report, and the governance arrangements are discussed in Section 1.3 of this report.

1.1 The Nature Conservancy's 'Debt for Nature' Transaction

The story of Seychelles' 'Debt for Nature' transaction begins far before 2016. In October 2006, the Seychelles government issued a US$200m Eurobond, with a coupon of 9.125%, a single B rating by S&P, and bullet repayment in 2011. This issuance, arranged by Lehman Brothers, was a remarkable achievement for the Seychelles as a first-time issuer, in that it represented 29% of 2006 GDP and approximately 100% of government revenues.[8] One use of the proceeds of this bond was to fund Seychelles Strategy 2017, a plan to double the nominal per-capita income over a decade, and reduce public debt to 60% of GDP. The following year a €54.7m private placement and a US$30m supplement to the Eurobond were issued to clear a backlog of unremitted profits payable to foreign investors.

The Seychelles had been undertaking reforms earlier in the decade, but these proved insufficient to deal with the consequences of a pegged exchange rate that was incompatible with economic fundamentals, food and fuel price shocks, and the global economic slowdown. So, by the summer of 2008, the Seychelles had defaulted on the €54.7m private placement and default on the US$230m Eurobond followed in October 2008.

In 2008 the International Monetary Fund reviewed the Seychelles' circumstances and recommended a package of reforms, along with recommended debt relief.[9] At the end of 2008, external public debt was US$760m, owed to a variety of creditor categories. Paris Club members were owed 35% of this external public debt, and France accounted for 43% of this Paris Club debt.[10]

In April 2009 Seychelles reached agreement, regarding US$180m of debt, with eight Paris Club countries and one non-Club nation to cancel 45% of the debt principal in two phases, with remaining debt to be repaid over 18 years (final maturity in 2027) with a five-year grace period. The agreement also provided short-term cash flow relief and an agreement that the Seychelles would seek similar accommodation from its other creditors.[11]

Fast-forward five years, and the Seychelles is still negotiating with creditors including Paris Club members. At the end of September, 2015, as the 'Debt for Nature' transaction was being negotiated, external public debt stood at SCR 5.9b, or approximately US$450m.[12] Domestic public debt added another SCR 6.7b, or US$510m.[13]

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6 The Nature Conservancy's Annual revenue is $1,021m for the year ended June 30, 2019. Financial Statements. 4,185 individuals were employed in calendar 2018, according to IRS Form 990. The workforce at the present point in time is characterized as "over 3,500" on The Nature Conservancy's website.

7 Seychelles Launches World's First Sovereign Blue Bond, World Bank Press Release, Oct 29, 2018.

8 p. 6, Government of Seychelles, Debt Restructuring Review Presentation, World Bank Debt Management Facility (DMF) Stakeholders' Forum, Berne, 8 June 2011.

9 International Monetary Fund Report, October 31, 2008. Staff Report for the 2008 Article IV Consultation and Request for a Stand-by Arrangement. Prepared by the African Department (in consultation with other departments), Approved by Thomas Krueger (AFR) and Philip Gerson (SPR).

10 p. 9, Government of Seychelles, Debt Restructuring Review Presentation, World Bank Debt Management Facility (DMF) Stakeholders' Forum, Berne, 8 June 2011.

11 p. 18, *Ibid.*

12 *p. 8, Debt Management Strategy: For the years 2016 – 2018, December 2015 Report,* Ministry of Finance, Trade & The Blue Economy, Republic of Seychelles, Exchange rate of 0.0766 US$ to 1 SCR, as of Sept 30, 2015. https://www.exchangerates.org.uk/SCR-USD-exchange-rate-history.html

13 p. 7, Figure 3, Ibid. Exchange rate of 0.0766 US$ to 1 SCR.

Table 1: External Public Debt, Sept 30, 2015

External debt stock	SCR m	US$ m	%
Multilateral	1,536.3	117.7	26.1
Bilateral, of which	1,507.1	115.4	25.6
Paris Club	891.2	68.3	15.1
Non-Paris Club	615.9	47.2	10.5
Commercial Banks	632.8	48.5	10.7
Private	2,214.4	169.6	37.6
Total, Sept 30, 2015	**5,890.6**	**451.2**	**100.0**

Some members opt out of the Club negotiations, leaving Club members, Belgium, France, Italy, the United Kingdom, and non-Club member, South Africa, negotiating over a combined debt of around US$30m.[14,15] Even though external public debt had been paid down as a result of the reforms put in place, this component of external public debt is still only 6% of total external debt, or 3% of Seychelles' total public debt.[16]

Allowing for some creditors opting out, a remaining US$21.6m debt became the basis for The Nature Conservancy's 'Debt for Nature swap.' The Nature Conservancy, in concert with other environmental foundations, facilitated a buyback by the Seychelles Government in exchange for the Seychelles adopting oceanic conservation measures.

This debt was discounted to US$20.2m (93.5c on the dollar) in a purchase by SeyCCAT that was organized and partially funded by NatureVest, The Nature Conservancy's investing unit.[17,18] Due to the inherent charitable nature of the buyback, it is not possible to determine whether the US$20.2m debt purchase was above, below, or at fair market value. At the start of the decade, Seychelles sovereign debt was being restructured at a significant discount to principal value, but expected discounts would have been lower by the middle of the decade because the Seychelles was in a much stronger economic position.[19] And, this 6.5% discount is presumably being applied to debt values that have already been heavily discounted since 2008. What we do observe is that creditor participation was at the time the highest achieved in a Paris Club buyback process.[20]

Not only was the debt purchased at a discount by SeyCCAT, but the terms of the debt were also modified in three ways:

1. **Term.** Again, the loan term was reset, with part of the debt payable over ten years and the remainder over 20 years;
2. **Interest.** The interest rate payable by the Seychelles Government was reset to 3%; and
3. **Currency.** Part of the debt could be repaid in Seychelles Rupees, at the Government's discretion, using the spot exchange rate on the day that payment is due.

As Figure 2 shows, SeyCCAT received the US$20.2m funds to purchase this US$21.6m sovereign Seychelles debt from two sources, both organized by The Nature Conservancy. First, a US$5m grant was donated by various philanthropic organizations with an interest in oceanic conservation – the Leonardo DiCaprio Foundation, the Waitt Foundation, Oak Foundation, the China Global Conservation Fund, Jeremy & Hannelore Grantham Environmental Trust, Lyda Hill Foundation, Oceans 5, and the Turnbull Burnstein Family Charitable Fund, among others.[21] Second, a US$15.2m loan at 3% for 10 years was provided by NatureVest.

14 Several sources exclude South Africa from the list of negotiating creditor nations. See, for example, 'Debt for Dolphins': Seychelles Creates Huge Marine Parks in World-First Finance Scheme, Feb 22, 2018, The Guardian. However, the Paris Club's Feb 25, 2015 press release notes South Africa as an ad hoc participant, and The Nature Conservancy's press release regarding the transaction lists The Republic of South Africa as a collaborator.

15 Paris Club and Seychelles Agree to a Deal to Support Ocean Conservation, Feb 25, 2015. Press Release, Club de Paris / Paris Club.

16 Estimates of external public debt around 2015 or 2016 vary, but appear to exceed US$400m.

17 Case Study: Seychelles Debt Conversion for Marine Conservation and Climate Adaptation, March 2017. Convergence Blended Finance, Inc. Note that we have not been able to confirm the details of the debt purchase from NatureVest, The Nature Conservancy, or creditor country sources.

18 https://www.nature.org/en-us/about-us/who-we-are/how-we-work/finance-investing/naturevest/

19 UPDATE 2-Seychelles Launches Defaulted Bond Exchange Offer, Dec 15, 2009, Reuters. This article notes plans for the private placement and Eurobond debt to be repackaged as new notes to be issued at a 50% discount on the principal amount tendered.

20 Paris Club and Seychelles Agree to a Deal to Support Ocean Conservation, Feb 25, 2015. Press Release, Club de Paris / Paris Club. Announced a record preliminary creditor participation, representing 91% of eligible debt.

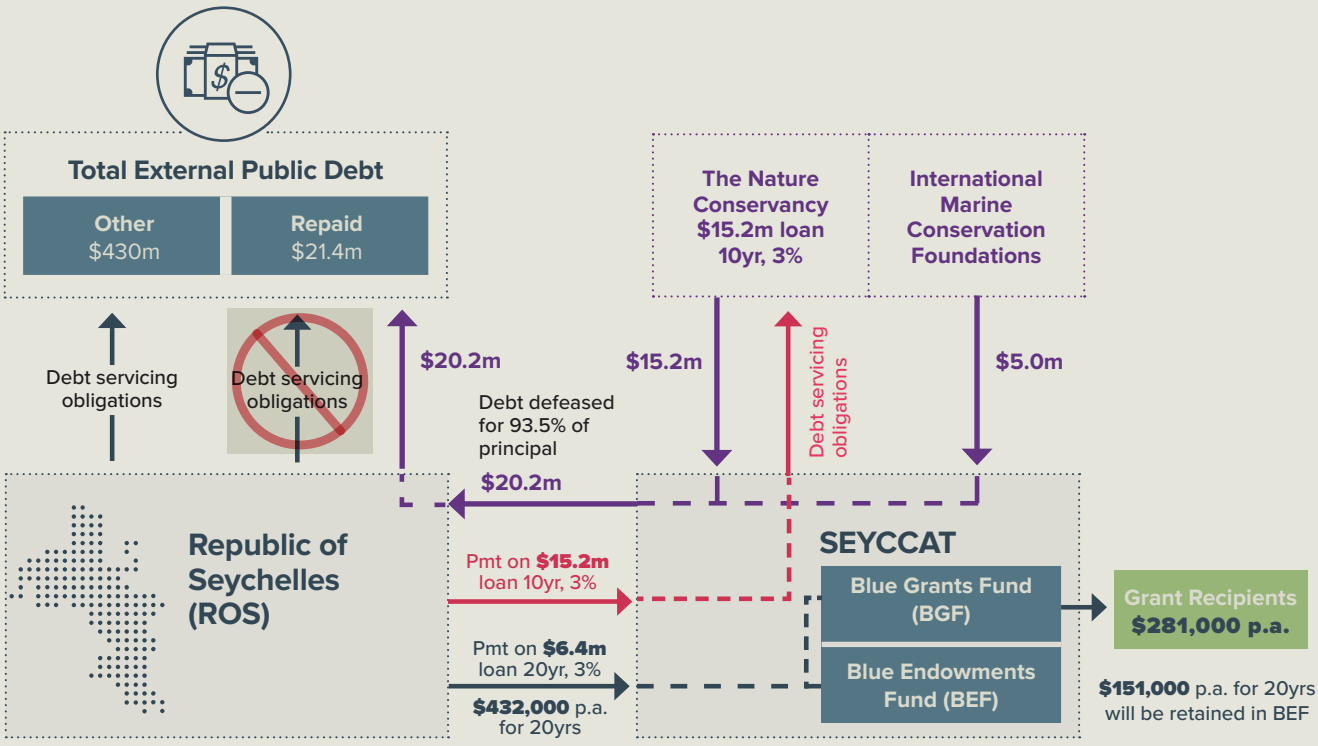
21 Seychelles Closes Landmark Buyback of Paris Club Debt and Activates Marine Conservation and Climate Change Adaptation Initiative, March 4, 2016. Press Release, Ministry of Finance, Trade Investment and Economic Planning, Republic of Seychelles.

A US$15.2m tranche of the US$21.6m Seychelles debt has debt-servicing cash flows to SeyCCAT that match back-to-back with SeyCCAT's debt servicing obligations to NatureVest. That is, both loans are for the same amount (US$15.2m), the same time to maturity (10 years), and have the same interest rate (3%). So, those cash flows, in and out, are a net "wash" for SeyCCAT.

The remaining US$6.4m tranche of the US$21.6m Seychelles debt is repayable over a 20-year period, also with a 3% interest rate.[22] It is this tranche that is partially repayable in local currency. This debt results in SeyCCAT receiving US$432,000 per year for 20 years from the Seychelles Government.

Between now and 2036, US$281,000 per year will be distributed by SeyCCAT through competitive grants made in response to requests for proposals. The balance of US$151,000 each year that is not distributed will be invested in the Blue Endowments Fund (BEF). When this endowment fund matures in 2036 with an expected value of US$6m to $7m, the endowment will start funding projects after cash flows from the debt transaction have come to an end.

Figure 2: The 'Debt for Nature' Transaction's Cash Flows



22 SeyCCAT's Blue Funds are structured as three pillars. https://seyccat.org/wp-content/uploads/2017/09/infographic_blue_funds_bat_web.pdf

In exchange for this funding, The Nature Conservancy and allied philanthropic organizations received the following:

- **Marine Spatial Planning (MSP).** An agreement that the Seychelles would participate in a process of surveying the nation's vast EEZ and establishing something like a land-based zoning system that specifies approved and non-approved uses for each specific area;
- **Marine Protected Areas (MPAs).** An agreement that the Seychelles will establish 30% of its EEZ as marine protected areas, in which extraction of marine resources is restricted or prohibited; and
- **Blue Economy Funding.** Funds would be made available through SeyCCAT for blue initiatives. SeyCCAT's funding activities are discussed later in this report.

It is clear that the Seychelles had already committed to an MSP process including establishing 30% of its EEZ as MPAs well prior to entering into the 'Debt for Nature' transaction. This is discussed in more detail in Section 2.1 of this report.

1.2 The World Bank's Seychelles Blue Bond Transaction

As with the 'Debt for Nature' transaction, the story of the Seychelles Blue Bond begins before the actual transaction. On April 11, 2016, the World Bank approved advancing a US$1,211,000 loan to the Seychelles that was to be used to facilitate preparation of the World Bank's proposed SWIOFish3 project, the Third South West Indian Ocean Fisheries Governance and Shared Growth Project.[23,24] The letter clarifies that the advance does not imply a commitment by the World Bank to assist in financing the Seychelles' obligations under the project. The advance was to be rolled into a future loan from the World Bank, which, if approved, was to be completed on or before the refinancing date of December 31, 2017.[25]

Thus, two years prior to the Seychelles Blue Bond, cash flows facilitated by the World Bank were financing the Seychelles' involvement in SWIOFish3.

By September 29, 2017, the World Bank had outlined the Seychelles' complete financing package for the SWIOFish3 project, comprised of the following:[26,27]

1. A US$5.0m loan from the International Bank for Reconstruction and Development (IBRD);
2. A US$5.29m grant from the Global Environment Facility (GEF);
3. A €5m guarantee from the IBRD; and
4. A US$5.0m credit from the GEF's Non-grant Instrument Pilot.

Items 3. and 4. in the above list were specifically provided to "enable the future issuance of the World's first blue bond by Seychelles." And, item 1. in the above list is the US$5m loan that the previous year's advance is to be rolled into.

A couple of weeks later, on October 15, 2017, the above package of financing, credit guarantee and grants was agreed between the World Bank and the Seychelles government.[28] This package included the Seychelles' US$5m loan and an agreement that the Seychelles would borrow a further US$15m via the blue bond. The agreement for the US$5m IBRD loan specified an incremental US$3,776,500 of available proceeds, given the prior US$1,211,000 advance and the US$12,500 loan fee.[29] These proceeds could be drawn on via the World Bank procurement process for expenditures related to the SWIOFish3 project. Procurement withdrawals can be made up to June 30, 2023, when SWIOFish3 is scheduled to end.[30] Funds not drawn down are subject to a 0.25% p.a. commitment charge.[31] As of the end of 2019, US$1.49m had been drawn down, with US$3.51m undisbursed.[32] While the 20-year loan is scheduled for final repayment on Aug 15, 2037, repayments on the total loan balance begin after a 10-year interest-only "grace period", with twice-yearly repayments scheduled from 2028 through 2037 inclusive.[33]

23 Project Preparation Advance (PPA) No. P4760, Approval Letter dated April 11, 2016, signed by Mark R. Lundell, World Bank Country Director for Seychelles, Arica Region.

24 SWIOFish details are provided at https://projects.worldbank.org/en/projects-operations/project-detail/P155642. Details include funds flows and the measurable goals to be achieved by June 30, 2023.

25 ANNEX to PPA No. P4760, Clause 3.03, and Clause 4.02.

26 Board Approves Over $20 Million for Seychelles Sustainable Fisheries and Marine Resources Conservation, World Bank Press Release, Sept 29, 2017.

27 Seychelles – Third South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish3), Loans & Credits, World Bank Press Release, Sept 29, 2017.

28 Supplemental Letter dated Oct 15, 2017, signed by Dr. Louis Rene Peter Larose, on behalf of Republic of Seychelles, and Mark R. Lundell, World Bank Country Director.

29 Section IV. A., Loan Agreement (Third South West Indian Ocean Fisheries Governance and Shared Growth Project) Between Republic of Seychelles and International Bank for Reconstruction and Development, Loan No. 8779-SC.

30 Section IV. B. 2., *Ibid.*

31 Article 2.04, *Ibid.*

32 Implementation Status & Results Report, SWIOFish3, Dec 26,2019, The World Bank.

33 Schedule 3, Amortization Schedule, loan agreement.

The agreement for the US$5m loan also lays out the various components of SWIOFish3, and identifies which financing will be used for each component of the project. This is laid out more fully later in this section and is depicted in Figure 4.

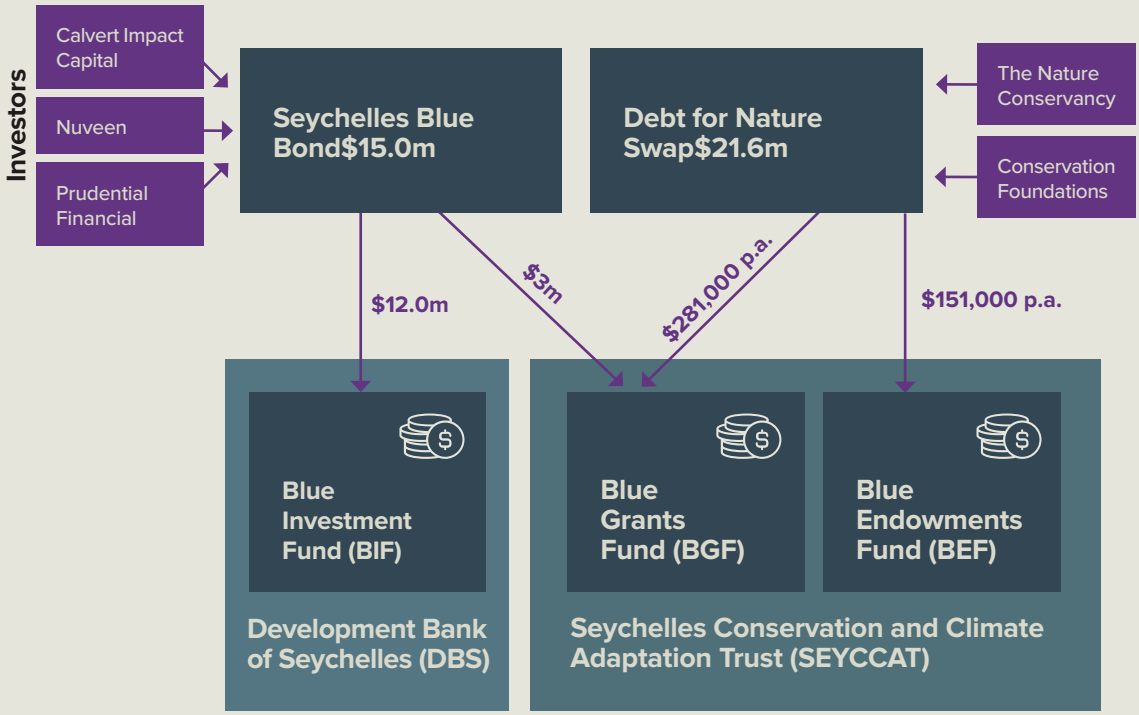
Following two years of this preliminary financing, the crowning component was put in place – the Seychelles Blue Bond. By October 29, 2018, three impact investors – Calvert Impact Capital, Nuveen, and Prudential Financial – invested a combined US$15m in the Seychelles Blue Bond. One fifth of the proceeds, US$3m, is directed into the Blue Grants Fund (BGF), administered by SeyCCAT. This is the point of connection between the two aspects of the Seychelles' blue financing; they both fund the activities of SeyCCAT, as Figure 3 demonstrates.

The remaining bond proceeds of $12m established the Blue Investment Fund (BIF). The BIF was launched on December 23, 2019 by the Development Bank of Seychelles (DBS), which administers the fund. The BIF operates as a revolving fund from which loans are made to facilitate specified oceanic activities and business diversification in the marine sector.

Loans of between US$10,000 and US$2.4m, expressed in equivalent Seychelles Rupees, are currently offered by DBS at 4.0% p.a. for up to 15 years.[34] Loans can be made to (a) Seychellois individuals; (b) locally-registered civil society organizations; or (c) locally-registered Seychellois-majority-owned firms. These local firms can be (i) small- and medium-sized fisheries enterprises; (ii) larger public-private partnerships; or (iii) joint ventures between local and foreign enterprises, where the local partner is the JV majority shareholder. Recipients of these loans must contribute at least 20% of the funds required for the proposed venture that will be funded by the loan.

As previously noted, the World Bank had assembled a package of four financing items, where the third and fourth items were to support the Seychelles Blue Bond. The Global Environment Facility assisted the Seychelles with its bond obligations by providing the Seychelles with a concessional US$5m loan to cover interest payments.[35] This also provides assurance to bondholders, as does a US$5m partial loan guarantee from the World Bank / International Bank for Reconstruction and Development (IBRD). Figure 4 indicates how the Seychelles Blue Bond combines with GEF and IBRD components to fully fund the Seychelles Government's obligations under the SWIOFish3 project.

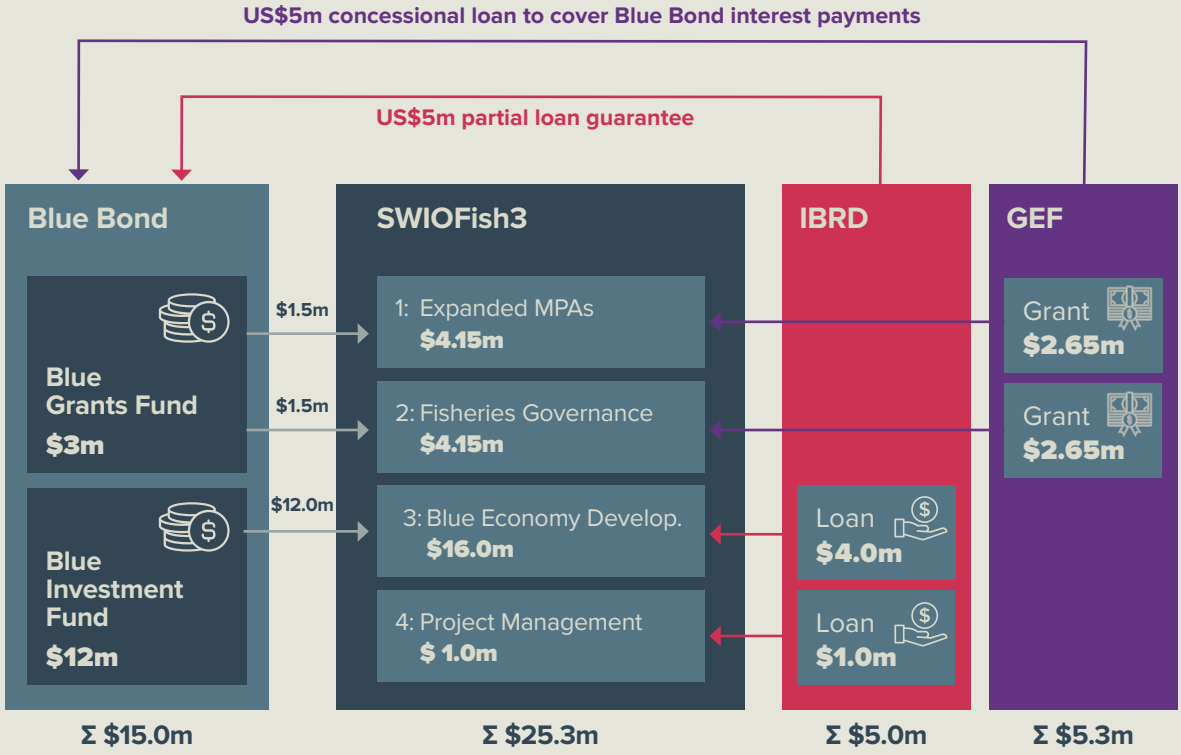
Figure 3: Seychelles Blue Bond and 'Debt for Nature' Transaction Both Fund SeyCCAT



34 Blue Investment Fund (BIF) Scheme, Development Bank of Seychelles. Application Portal.

35 See page 9, Agenda Item 09, 55th GEF Council Meeting, Dec 18-20, 2018, GEF-7 Non-grant Instrument Program.

Figure 4: How SWIOFish3 is Funded by IBRD, GEF and the Seychelles Blue Bond



The **first component** of SWIOFish3 is supporting the Seychelles' expansion of its marine protected areas, which will be funded by a US$2.65m GEF Grant and by US$1.5m (10%) of the Blue Bond proceeds. Similarly, the **second component** of SWIOFish3 seeks to improve governance of priority fisheries, which will also be funded by a US$2.65m GEF Grant and by US$1.5m (10%) of the Blue Bond proceeds. The **third component** of SWIOFish3 seeks sustainable development of the blue economy, which is funded by the remaining US$12.0m proceeds of the Blue Bond, and by a US$4.0m loan from the IBRD. This US$12.0m is presumably the Blue Investment Fund that is administered by the Development Bank of Seychelles, given that the BIF objectives align with that of SWIOFish3 Component 3. In short, grants from the IBRD and GEF are combined with the entire proceeds of the Seychelles Blue Bond to fund SWIOFish3.[36]

The World Bank estimates that the IBRD partial loan guarantee lowered the Seychelles borrowing cost by at least 2% p.a. The World Bank also estimates that the GEF concessional loan to cover Blue Bond interest payments further lowered the Seychelles' net borrowing cost by over 3% p.a.[37] The GEF concessional loan carries a 0.25% interest rate and is structured as a 40-year loan with a 10-year grace period.[38] Not surprisingly, this concessional loan is 100% drawn down as of the end of 2019.[39]

In substance, the Seychelles Blue Bond, organized by The World Bank, is a means of assisting the Seychelles Government to pay its funding obligations under SWIOFish3, a World Bank project.

36 See pp. 3 - 6 of the Environmental and Social Management Framework for SWIOFish3 Project, Feb 2017. Ministry of Finance, Trade and Economic Planning, Republic of Seychelles.
See also p.52, para. 83, *Seychelles Climate Change Policy Assessment*, IMF Country Report No. 17/162, May 18, 2017.

37 Seychelles: Introducing the World's First Sovereign Blue Bond – Mobilizing Private Sector Investment to Support the Ocean Economy, Blue Bond Case Study, June 7, 2019. Financial Products & Client Solutions, The World Bank.

38 p.52, *Seychelles Climate Change Policy Assessment*, IMF Country Report No. 17/162, May 18, 2017.

39 Implementation Status & Results Report, SWIOFish3, Dec 26,2019, The World Bank.

1.3 Seychelles Blue Finance and the Role of SWIOFish3 and SeyCCAT

The World Bank's SWIOFish3 project provides the backdrop and organizing framework for the two Seychelles blue finance transactions. The SWIOFish3 process framework lays out the planned Seychelles Blue Bond as a central part of project funding, and also identifies The Nature Conservancy's 'Debt for Nature' transaction as an integral component of expanding marine protected areas. SWIOFish3 is therefore a representation of the World Bank's governance, vision and funding for expanded marine protected areas, fisheries industry improvements, and development of the "blue economy."

Key SWIOFish3 documents, such as (a) the process framework and (b) the environmental and social management framework, have been prepared as work product of the Seychelles Ministry of Finance, Trade and Economic Planning. However, there are indications that much of this material has been prepared in close association with the World Bank. In any event, SWIOFish3 is a collaboration of the World Bank and the Republic of Seychelles.

SeyCCAT is the operational entity through which the proceeds of both blue finance transactions are funnelled, and by which the marine spatial planning process is undertaken. It is a trust that was established by the Conservation and Climate Adaptation Trust of Seychelles Act, 2015.[40] Its stated legislative purpose is to establish SeyCCAT so as to regulate the debt transactions and related matters. The legislation defines how the cash flows are to be distributed or retained, how executives are to be appointed, and other governance matters. In particular, the legislation defines the SeyCCAT board of directors as:[41]

a. Two ex officio directors appointed on the nominations of

    ii. The Government of Seychelles; and

    iii. The Nature Conservancy.

b. Seven other suitably qualified directors appointed as nominated by the institutions selected by the ex officio directors.

Directors are appointed for a three-year term, and can be reappointed. Current directors are:

- **Minister Wallace Cosgrow**
  SeyCCAT Chair
  Minister for Environment, Energy and Climate Change
- **Minister Maurice Loustau-Lalanne**
  SeyCCAT Deputy Chair
  Minister of Finance, Trade, Investment and Economic Planning
- **Rob Weary**
  SeyCCAT Treasurer
  Chair of the SeyCCAT Finance Committee
  Director, Conservation Finance, The Nature Conservancy
- **Michel Pierre**
  SeyCCAT Secretary
  CEO, Citizens Engagement Platform Seychelles
- **Jude Talma**
  Chair of the Blue Grants Fund Committee
  Principal Secretary for Fisheries,
  Ministry for Fisheries and Agriculture
- **Oliver Bastienne**
  Partner, ACM & Associates
  (was EY Seychelles affiliate)
- **Amit Wasserberg**
  Founder and Executive Director,
  Silhouette Cruises Capt. Amit Wasserberg
- **Glenny Savy**
  CEO, Islands Development Company (IDC)
- **Beatty Hoarau**
  Treasurer and a founding member,
  Fishing Boat Owners Association (FBOA)

In short, SeyCCAT appears to operate as a joint venture between the Republic of Seychelles and The Nature Conservancy, with governance shared between the two entities – Seychelles as borrower and The Nature Conservancy as lender. Governance input is also provided by other stakeholder groups.

Composition of the executive team also reflects this partnership. Helena Sims, SeyCCAT's MSP Project Manager, has been employed since April 2015 (before SeyCCAT was established) by The Nature Conservancy in the role of Seychelles MSP Project Manager.[42]

40 Conservation and Climate Adaptation Trust of Seychelles Act, Act 18 of 2015, Nov 19, 2015.

41 Part III, Section 7(2), *Ibid.*

42 https://seyccat.org/about-us/#our-people

2 Seychelles Blue Finance Outcomes Since 2016

The previous section describes how the two Seychelles blue finance transactions have been structured. They also demonstrate how the two transactions integrate as part of a broader strategy to implement marine spatial planning in the Seychelles EEZ. We now examine publicly available information regarding the outcomes associated with these transactions. We divide this section into three parts: (1) what marine protection was instituted on completion of the 'Debt for Nature' transaction, and subsequently; (2) what projects have been funded through SeyCCAT since 2016; and (3) what we know about loans made by the Blue Investment Fund as administered by the Development Bank of Seychelles.

2.1 Marine Protected Area Outcome on Signing of 'Debt for Nature' Transaction, and Since

In 2012, the Seychelles established a goal of expanding protected areas, as follows:[43]

- 50% of all terrestrial areas (47% at the time); and
- 30% of the marine EEZ (0.04% at the time), including 15% in 'no take' areas.

This goal, established well prior to either of the blue finance initiatives, was subsequently operationalized as part of the Seychelles marine spatial planning Initiative. MSP was defined and proposed as a step-by-step process in a document prepared by UNESCO's Intergovernmental Oceanographic Commission (IOC) and published in 2009.[44] The Seychelles Marine Spatial Planning Initiative, which appears to be a local implementation of this global IOC strategy, is described as having two phases and three milestones, as follows:[45]

- **Phase 1,** From Feb 2014 through 2017, with legal designation in Feb 2018
  - → Milestone 1: 15% of Seychelles EEZ protected
- **Phase 2,** from Feb 2018 through 2020
  - → Milestone 2: An additional 7.5% of EEZ protected
  - → Milestone 3: A further 7.5% of EEZ protected

Thus, a process was in place by at least February 2014 to establish 30% of Seychelles EEZ as Marine Protected Areas (MPAs). Given the above chronology, it is apparent that the commitment to bring 30% of Seychelles' EEZ under MPAs was not a consequential result of the 'Debt for Nature' transaction, since the commitment appears to precede the transaction by several years. Hence the wording of the July 21, 2016, Seychelles Government press release that speaks of the transaction "enabling the Seychelles to begin investing in conservation efforts, including its commitment to place 15 percent of its Exclusive Economic Zone under marine protection by the end of calendar year 2016."[46] That is, the transaction may have enabled the process, and it may have brought it forward by a year, but the 'Debt for Nature' transaction was not in any direct sense a "purchase" of nature commitments from the Seychelles Government that it had not previously made.

The conclusion that the Seychelles had already committed to bringing a greater proportion of its EEZ under a form of marine protection is reinforced by the

43 See Seychelles Marine Spatial Plan Initiative.

44 Marine Spatial Planning: A Step-By-Step Approach Toward Ecosystem-Based Management, Report, May 2009. Charles Ehler & Fanny Douvere. UNESCO's Intergovernmental Oceanographic Commission (IOC) and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO. 2009 (English).

45 https://seymsp.com/the-initiative/process/

46 Seychelles Clears Hurdle to Protect 30% of Its Waters, Press Release, July 21, 2016. Ministry of Finance, Trade Investment and Economic Planning, Republic of Seychelles. This press release also noted that in 2015 it had committed 154,000 sq. mi. (~400,000 km²) of ocean for high levels of protection.

fact that the Seychelles is a party to the Convention on Biological Diversity.[47] Among other commitments, the Seychelles will work toward the goal of conserving 10% of marine areas in "protected areas and other effective area-based conservation measures."[48] This is one aspect of the Aichi Biodiversity Targets which were put in place by Parties to the Convention on Biological Diversity in October 2010.

And earlier, March 4, 2016, the Seychelles Government announced it had closed on its debt transaction and that it was working with The Nature Conservancy and a wide array of partners to create a Marine Spatial Plan for its entire 1.3m km^2 EEZ.[49] The chronology and documentary evidence indicate that the Seychelles had been working with international governance agencies and NGOs to undertake MSP and expand MPAs well before the TNC transaction.

In any event, by February 2018, the Seychelles had announced the creation of two new marine protected areas covering 210,000 km^2 of its EEZ.[50] These MPAs were as follows:

- **Aldabra Group** (74,400 km^2). Marine National Park that restricts almost all human activities. Mostly deep and some inshore waters surrounding the Aldabra Group, an archipelago 1,100 km west of Seychelles' main islands; and
- **Amirantes Group to Fortune Bank** (136,000 km^2). Marine Protection & Sustainable Use Area that specifies significant new conditions and restrictions for a swathe of Seychelles' central ocean.

The timing of this announcement and the magnitude of protected areas is consistent with Phase 1, Milestone 1, of the Seychelles MSP Initiative. That is, the resulting 210,000 km^2 designation is at least 15% of the Seychelles EEZ.

It is worth noting that the MPA Atlas website indicates that these protected areas have not yet been implemented.[51] The Aldabra Marine National Park entry on MPA Atlas states that:

> *"All current activities that involve extraction, seabed alteration and/or disturbance are allowed until 2020, or when they expire, whichever is soonest. All restrictions, conditions, area-based considerations and management plans come into effect no later than 2021."*

Similarly, the MPA Atlas also indicates on its entry regarding the "Amirantes Group and Fortune Bank" MPA that *"Agreement was reached to allow for existing uses up to 2020, while developing management plans and methodology to improve sustainability."* It also lists this MPA as "not implemented."

By April 2019, the Seychelles legally designated the marine boundaries for Milestone 2 MPAs.[52] This designation expanded the areas previously identified – the Aldabra Marine National Park, and the Amirantes to Fortune Bank Marine Area of Outstanding Natural Beauty. This brought the total marine protected area to 350,915 km^2, 26% of the Seychelles EEZ, thus meeting and exceeding the cumulative Milestone 2 of 22.5% protection.[53] As with milestone 1, implementation of the protected areas will be deferred until 2021.

On March 26, 2020, the Seychelles President, Danny Faure, announced completion of Phase 2, Milestone 3, with 30% of the nation's EEZ designated for protection. While the official maps of the designated protection areas have not yet been published, it appears that they continue to expand on the Aldabra Marine National Park (201,235 km^2) and the Amirantes Group to Fortune Bank Marine Area of Outstanding Natural Beauty (217,548 km^2).[54] However, there are designation orders for a series of separate protected areas, as follows: [55]

47 The Seychelles signed the Convention on Biological Diversity on June 10, 1992, ratified it on Sept 22, 1992, and became a party to the Convention on Dec 20, 1993. See CBD list of parties.

48 See Strategic Goal C, Target 11, of the Aichi Biodiversity Targets, which were adopted in Nagoya, Aichi Province, Japan, Oct 18 – 29, 2010.

49 Seychelles Closes Landmark Buyback of Paris Club Debt and Activates Marine Conservation and Climate Change Adaptation Initiative, Press Release, March 4, 2016. Ministry of Finance, Trade Investment and Economic Planning, Republic of Seychelles.

50 In Seychelles, an Innovative Approach to Marine Protection, June 8, 2018. News and Stories, UN Environment Programme.

51 http://www.mpatlas.org/mpa/sites/68808472/

52 Aldabra Group (Marine) National Park (Designation) Order,
Amirantes (Marine) to Fortune Bank (Marine) Area of Outstanding Natural Beauty (Designation) Order,
Orders Signed April 12, 2019 by Wallace Cosgrow, Minister of Environment, Energy and Climate Change.

53 https://seymsp.com/news/milestone-2-achieved/

54 Seychelles Achieves 30 Percent Marine Conservation Commitment, Undated Press Release, The Nature Conservancy.

55 Official Gazette., March 26, 2020, No. 236 of 2020.

(ANB = Area of Outstanding Natural Beauty; NP = National Park)

- **Amirantes to Fortune Bank** ANB Order (S.I. 44 of 2020)
- **Poivre Atoll** ANB Order (S.I. 45 of 2020)
- **Denis Island** ANB Order (S.I. 46 of 2020)
- **Farquhar Archipelago** ANB Order (S.I. 47 of 2020)
- **Cosmoledo and Astove Archipelago** ANB Order (S.I. 48 of 2020)
- **Farquhar Atoll** ANB Order (S.I. 49 of 2020)
- **Alphonse Group** ANB Order (S.I. 50 of 2020)
- **Desroches Atoll** ANB Order (S.I. 51 of 2020)
- **Aldabra Group** NP Order (S.I. 52 of 2020)
- **Bird Island / Ile aux Vaches** NP Order (S.I. 53 of 2020)
- **Amirantes South** NP Order (S.I. 54 of 2020)
- **D'Arros to Poivre Atolls** NP Order (S.I. 55 of 2020)
- **D'Arros Atoll** NP Order (S.I. 56 of 2020)

When announcing these protected areas that account for 30% of national EEZ, the Seychelles President noted that the nation has achieved its obligations under the "UN Convention on Biological Diversity and the UN Sustainable Development Goals, particularly Goal 14 on Life under Water."[56]

As with milestones 1 and 2, milestone 3's implementation has been deferred until 2021. [57]

In summary, as of March, 2020, the Seychelles has achieved its target of designating 30% of its EEZ as MPAs, with half subject to "no take" protection, and the other half subject to specified protections that are still under development. While this is presented as a consequence of The Nature Conservancy's 'Debt for Nature' transaction, it is apparent that the commitments to an ongoing process of marine spatial planning and the resulting zoning of marine areas significantly predates the TNC arrangement. The TNC transaction and the Seychelles Blue Bond could be said to facilitate establishment of MPAs, in that the MSP process is funded by these transactions. Use of these funds for marine zoning and other activities is addressed in the next section.

2.2 Funding Provided from SeyCCAT's Blue Grants Fund

SeyCCAT invites applications for both small/medium and large grants to fund projects capable of achieving one of the following five objectives:

1. **Marine Zoning:** Support new and existing marine and coastal protected areas and sustainable use zones;
2. **Fishing Sector:** Empower the fisheries sector with robust science and knowhow to improve governance, sustainability, value and market options;
3. **Marine Ecology:** Promote the rehabilitation of marine and coastal habitats and ecosystems that have been degraded by local and global impacts;
4. **Climate Change:** Develop and implement risk reduction and social resilience plans to adapt to the effects of climate change;
5. **Blue Economy:** Trial and nurture business models to secure the sustainable development of Seychelles' blue economy.

Small/medium grants are made for amounts up to SCR 100,000 (US$5,700), and large grants are made for amounts up to SCR 1.0m (US$57,000).[58] Blue Grants have been made in three rounds so far (BGF 1, 2 and 3), with the BGF 4 round opened April 6, 2020.

SeyCCAT has funded eight small/medium projects; all but one of which was funded in the BGF 3 round. Details of all eight small/medium projects are provided in an annex to this report. See Table 4. The last two projects listed in that table, shaded in blue, are the two projects that have been completed so far. The total amount funded so far is SCR 798,000, or US$45,500, with another third of this amount provided, in cash or in kind, by the applicant. The shortest project funded was scheduled to take seven months, and the longest was to take 18 months. The projects covered each of the five SeyCCAT objectives except '1. Zoning'.

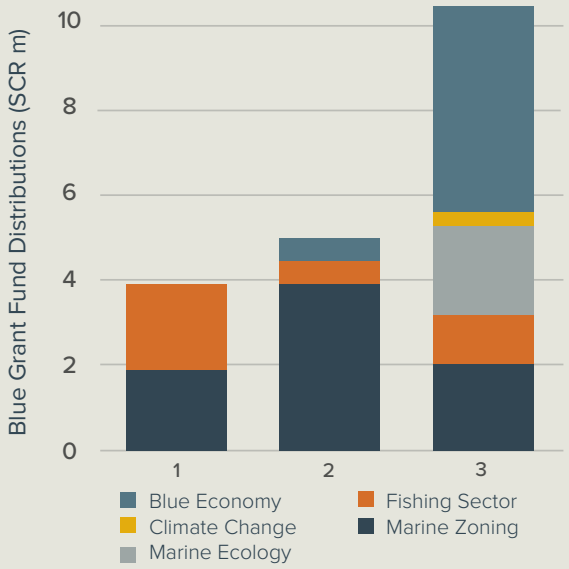
SeyCCAT has also funded 23 large projects; in all three of the BGF rounds. Details of all 23 large projects are provided in Table 5 in an annex. The last four projects

56 Speech by President Danny Faure on the occasion of 30% of Seychelles' EEZ Designated as Marine Protected Area, March 26, 2020.

57 Seychelles protects 30 percent of territorial waters, meeting target 10 years ahead of schedule, Seychelles News Agency, March 26, 2020, Daniel Laurence.

58 https://seyccat.org/how-to-apply/

Figure 5: BGF Funding by Round and Objective



listed in that table, shaded in blue, are the projects that have been completed so far. The total amount funded so far is SCR 18.3m, or just over US$1m, with an almost equal amount provided, in cash or in kind, by the applicant. Almost all the funded projects run for between one and two years. The projects covered each of the five SeyCCAT objectives except for '4. Climate Change.'

Figure 5 summarizes the detailed information provided in the annex. Specifically, it shows the total BGF grants made by SeyCCAT in each of the last three rounds, and divides the funding into the five objective categories listed by SeyCCAT. This information is also provided in tabular form in Table 2. Note that only the last round funds projects in all five objective categories. Table 2 also shows the total co-financing provided by the grant applications, in cash or in kind. Grant recipients have received just over US $1.0m over the last three rounds, and have also proposed using a similar amount of their own funding for these projects. The total level of grant funding by SeyCCAT has increased in each subsequent round.

Table 2: SeyCCAT Blue Grant Funding Summary (SCR)

BGF Round	Obj	Objective Description	Large Grant	Co-financing	Small Grant	Co-financing
1	1	Marine Zoning	1,877,200	3,850,000		
	2	Fishing Sector	1,891,290	2,080,217	100,000	
Total Grants, Round 1			3,768,490	5,930,217	100,000	
2	1	Marine Zoning	3,858,600	4,455,438		
	2	Fishing Sector	498,000	482,000		
	5	Blue Economy	596,838	112,000		
Total Grants, Round 2			4,953,438	5,049,438		
3	1	Marine Zoning	2,000,000	2,808,600		
	2	Fishing Sector	1,062,686	162,000	100,000	
	3	Marine Ecology	1,948,262	965,688	99,720	
	4	Climate Change	-	-	300,000	215,500
	5	Blue Economy	4,601,210	3,106,329	197,998	18,750
Total Grants, Round 3			9,612,158	7,042,617	697,718	234,250
Blue Grant Fund Distrib. (SCR)			**18,334,086**	**18,488,524**	**797,718**	**234,250**
Blue Grant Fund Distrib. (US$)			**1.05m**	**1.05m**	**0.05m**	**0.01m**

Overall, SCR 19.1m or US$1.1m has been distributed in Blue Grant Funding over three years. This is roughly consistent with the US$281,000 received each year by SeyCCAT since the 'Debt for Nature' transaction, plus income earned on the US$3m received from the Seychelles Blue Bond funds.[59]

It is useful to see how funding was spread across each of the SeyCCAT objectives. As Table 3 shows, projects associated with Marine Zoning account for just over 40% of the total Blue Grant funding, and just over 42% of the large-grant funding. A further 47% of Blue Grant funding is to enhance the effectiveness and efficiency of fishing and other business activities that occur on the ocean. And, just over 12% of funding has gone to projects that address marine ecology or climate change / adaptation.

2.3 Loans Provided from the Blue Investment Fund Administered by DBS

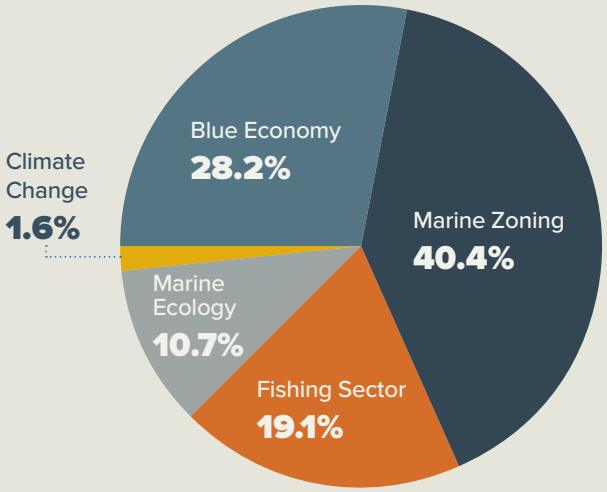
We are unable to find as much public information on loans made by Development Bank of Seychelles as we are on the projects funded by SeyCCAT. However, we do know that the first call for loan applications was in April 2019. In the second round, for which applications are currently being invited, the requirement has been waived for the applicant business to have existed for at least two years prior to applying. As noted in Section 1.2, the maximum loan amount is SCR 42m (US$2.4m), at a 4% p.a. interest rate and repayment over a period up to 15 Years.

The Seychelles national budget specifies that US$2.0m will be made available through DBS (and US$0.5m through SeyCCAT).[60] Interestingly, the US$2.0m budget amount announced in the National Assembly is less than the maximum loan amount offered by DBS. It is possible that funds were not fully utilized in the first round, and are therefore added to the second round. Regardless, this is a substantial amount of debt funding available through DBS.

Table 3: Grant Funding by SeyCCAT Objective

SeyCCAT Objective	Small	Large	Total
1. Marine Zoning	0.0%	42.2%	40.4%
2. Fishing Sector	25.1%	18.8%	19.1%
3. Marine Ecology	12.5%	10.6%	10.7%
4. Climate Change	37.6%	0.0%	1.6%
5. Blue Economy	24.8%	28.4%	28.2%
	100.0%	**100.0%**	**100.0%**

Figure 6: Grants by Objective



59 It is also possible that some of the US$3m capital is distributed as a grant, although this is not apparent from publicly-available information.

60 Seychelles Government Budget For the Fiscal Year 2020, Theme: "Equitable Outcomes-Shared Prosperity" Delivered by: Ambassador Maurice Loustau-Lalanne, Minister of Finance, Trade, Investment and Economic Planning In the Seychelles National Assembly, Ile Du Port, Victoria, Mahe, Seychelles, on Thursday Oct 31, 2019 at 9.00 a.m.

The Development Bank of Seychelles maintains a Facebook page, which provides some information regarding loan funding from the Blue Investment Fund.[61] According to this page, BIF is funding 15 ongoing projects, two of which have now ended. Interestingly, the two completed projects that are listed are also projects that have received BGF funding from SeyCCAT. They are:

1. **Blue Economy Internship Programme.** Led by SIDS Youth AIMS Hub.[62] The 4th edition of the program was also provided with a BGF small grant by SeyCCAT and is listed in Table 4 in an annex to this report;
2. **Blue Economy Entrepreneurs.** Led by Eco-Sol Consulting Pty Ltd, which is run by Nimhan Senaratne. Mr Senaratne was a Director, Seychelles Ministry of Environment and Energy. This entrepreneurship program was also provided with a BGF large grant by SeyCCAT and is listed in Table 5 in an annex to this report.

DBS note that they are subject to official information requests, which may provide additional information for Seychellois or Seychelles organizations.

61 https://www.facebook.com/pg/Blue-Finance-Seychelles-389242248473533/posts/

62 https://www.syah.org/

3 Evaluating Seychelles Blue Finance

To this point we have described the two Seychelles blue finance transactions, and identified, to the extent possible, the use to which funds have been allocated. We now consider whether these examples of Blue Financing provide templates for other similar nations.

3.1 Understanding the Problem that These Blue Finance Transactions Address

The Seychelles has beautiful pristine natural marine locations that are worth securing for future generations to behold. One such place is the lagoon within Aldabra, the world's largest raised coral atoll.[63] It has been essentially reserved for research since The Royal Society's activities there in the late 1960s led to the Society leasing the atoll in August 1971.[64] Control and protection of Aldabra passed to the Seychelles Island Foundation (SIF) in 1979, which still manages the atoll today.[65] Since 1982, Aldabra has been designated as a UNESCO World Heritage Site.[66] And, since February 2, 2010, Aldabra has been designated as a 43,900 ha Ramsar site under the Convention on Wetlands, an intergovernmental treaty.[67]

The Nature Conservancy ties its financing through the 'Debt for Nature' transaction with protection of places such as Aldabra.[68] However, protective designations have been in place for more than three decades prior to the TNC transaction. Since visits to Aldabra are rare, and visitors infrequent, the actual threats faced by Aldabra's ecosystem, according to the Ramsar website, are "oil spills from a nearby tanker route, alien invasive species introduction and establishment, and ... climate change." It is worth asking what it is about existing governance arrangements that requires further protective designations, and what protective designations might achieve against such threats.

It is also important to draw a distinction between (a) protecting ecologically significant coral atolls and their lagoons; and (b) establishing a large marine protected area. Using Aldabra as an illustration, it is protected in its entirety through a series of overlapping national and international designations over its 439 km^2

63 https://www.ramsar.org/wetland/seychelles?site=2630#map-leaflet

64 *Aldabra and the Aldabra Research Station,* D.R. Stoddart, Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences, Vol. 286, No. 1011, The Terrestrial Ecology of Aldabra (Jul. 3, 1979), pp. 3-10, The Royal Society.

65 http://www.sif.sc/about

66 https://whc.unesco.org/en/list/185/. The designation is memorialized by a bronze plaque on the atoll, stating, "Aldabra, wonder of nature given to humanity by the people of the Republic of Seychelles, 19th November 1982." Or, alternately, in French, "Aldabra, joyau de la nature offert a l'humanite par le people de la Republique des Seychelles."

67 p. 42, Ramsar List The Convention on Wetlands was agreed in 1971, in Ramsar, Iran, and became effective in 1975

68 *Saving Seychelles,* Tumblr Post, Matt Brown, The Nature Conservancy, December 2015.
"... thanks to this incredible commitment by the Seychelles government [to designate as a protected area], some creative financing and strong science from TNC, I know that Aldabra will remain protected for a very long time."

entirety. However, the Aldabra Group marine protected area is over 200,000 km^2; an area equal to that of Uganda. In total, Seychelles has designated a total area for marine protection that is double that size; the equivalent of nearly 1,000 Aldabra Atolls.

We should also consider – particularly as outsiders – the preferences of existing users of marine resources, many of which may be benign. A personal desire to "lock up" all existing uses of a marine area in perpetuity may or may not equate to virtue. Assertions of protection can be assertions of external ownership and the imposition of external values.

3.1.1 The Mahé Plateau

The Seychelles Blue Finance transactions are designed to fund solutions to problems of sustainable marine resource management. Background material to these transactions suggests that the identified marine resource management problems are actually localized problems of fisheries management.

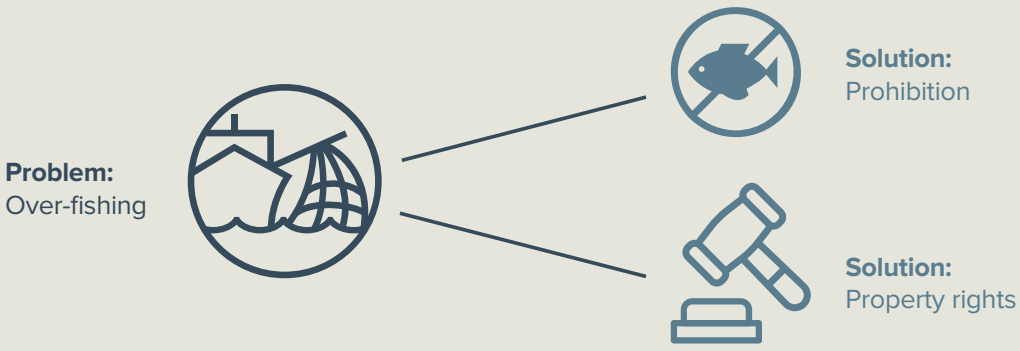
> *"Several species of demersal fish are subject to overfishing, or at risk from overfishing, with declining catch rates symptomatic of worsening status in key fisheries. The pressures on demersal and reef-associated pelagic resources come from overfishing in the artisanal, recreational and sport fishing sub-sectors and from an increasing environmental footprint of the tourism industry. They are particularly acute on the Mahé Plateau, where the population and economic activity are concentrated. The fisheries are open-access, which impedes any action to limit the fishing effort and ensure their sustainability."*[69]

This brief excerpt defines the nature and extent of fisheries management problems in the Seychelles, and their cause. The Mahé Plateau has a total area of 41,000 km^2, which is less than 3% of the Seychelles EEZ. It surrounds the most densely populated parts of the Seychelles and is a shallow marine area (75m depth) that supports a rich biodiversity including demersal species valued for sport fishing, tourism cuisine and the traditional diet of Seychellois. The combination of population growth, expansion of tourism and improved harvesting technologies under an open access fisheries management regime have led to the predictable outcome that these valuable demersal species are over-fished.

Responses to over-fishing generally fall into two categories, as expressed graphically in Figure 7. The proposed prohibition solution derives from a central planning model, whereas the property rights solution allows for a wide variety of efficient transactions and accommodations between users of a marine resource.

The property rights solution involves closing the 'commons' by establishing well-defined and secure property rights in stressed fisheries.[70] Under this approach, fisheries uses that are both sustainable and wealth-creating evolve through a market-based process of fisheries sector rationalization and innovation. Where other approaches have been tried, this combination of sustainability and wealth creation has proved elusive. The concept of controlling open access requires the allocation of scarce and potentially valuable rights followed by a de-politicization of fisheries use decisions in favor of those right-holders.

Figure 7: Two Responses to Over-fishing



69 See p. 11, Environmental and Social Management Framework for SWIOFish3 Project,, Feb 2017. Ministry of Finance, Trade and Economic Planning, Republic of Seychelles.

70 Gordon, H.S., 1954. Economic Theory of a Common Property Resource: The Fishery. Journal of Political Economy 62:124-142.
Scott, A.D., 1955. The Fishery: Objectives of Sole Ownership. Journal of Political Economy 63: 166-124.
Coase, R.H., 1960. The Problem of Social Cost. Journal of Law and Economics 3: 1-44.
Hardin, G., 1968 The Tragedy of the Commons. Science 162: 1243-47.

The Government of Seychelles has recognized the core nature of the actual marine management problem by initiating work on the Mahé Plateau Fisheries Management Plan. This indicates a sound sense of priorities. However, the content of the Plan is presently unknown and the activities funded by the two blue finance transactions suggest that the Plan (when it emerges) will apply central planning approaches.

Logically, MPAs are a product of MSP. However, the Seychelles Government committed to establishing large MPAs well before the MSP process was complete. Figure 8 summarizes this earlier observation from Section 2.1. This observation calls into question MSP as a science-driven process that determines the nature and magnitude of MPAs.

There is a second reason to question MSP as a science-driven process that determines the nature and magnitude of MPAs. The Nature Conservancy states that a prerequisite for a country participating in its 'Blue Bonds for Conservation' program is committing to MPAs and the 30% target.

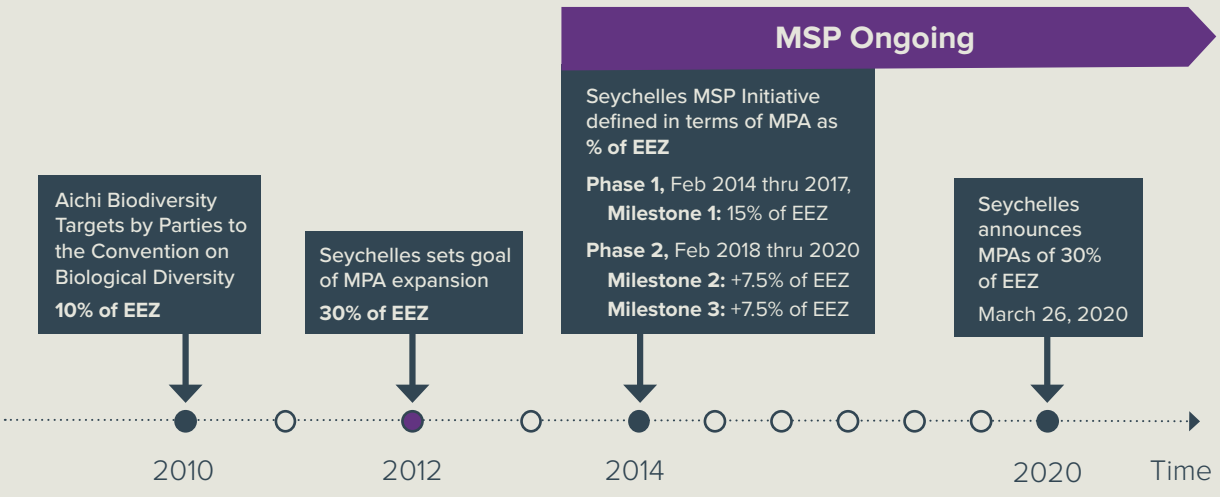
> *"The Nature Conservancy announced a campaign to increase marine conservation zones around the world by 15% within a decade. But protecting marine resources takes money, and many coastal countries are deeply in debt. In response, TNC launched a financing program called Blue Bonds for Conservation … To be eligible for Blue Bonds, a country must commit to protecting a portion of its marine areas, with a target of 30%."*

So, both the chronology of the Seychelles transaction and, more generally, The Nature Conservancy's Blue Bond program's intent demonstrate that MSP is not scientifically determining the EEZ portion to be protected, since the 30% target precedes MSP implementation.

Identifying something to be valuable does not imply an imperative for protection. The missing links that would connect value and protection are (1) a clearly defined threat to that value; and (2) selection of the least-damaging way of mitigating that threat. Establishing a no-take marine protected area carries a high cost that includes the expropriation of existing use rights and the resulting disruption of human activity.

The SWIOFish3 documents include considerable discussion of topics like "alternative livelihood" and "relocation". In fact, the main SWIOFish3 Process Document is labelled as a "resettlement plan" in the list of SWIOFish3 documents on the World Bank project website.[71] However, in the case of no-take zones, there appears to be no attempt to identify existing use rights and a level of harvesting that is consistent with efficient management of the underlying marine resource.

Figure 8: MPA Target Precedes MSP



71 http://documents.worldbank.org/curated/en/802891494842794672/Process-framework

3.1.2 The Indian Ocean Tuna Fishery

It is also clear that the shared fisheries resources of the Indian Ocean are not being managed in a manner that is ecologically or economically optimal. A significant example of this is the state of the Indian Ocean tuna fishery. This fishery is managed by the Indian Ocean Tuna Commission (IOTC) and there are harvest control measures in place. However, management of this fishery at the time of these Blue Bond transactions had a mixed record on compliance and adherence to scientific advice.[72] As with the Mahé Plateau problem, the IOTC faces the same two competing solutions:

- Prohibit use of the resource
- Define clear property rights

Prohibiting use or driving up the costs of harvesting through greater regulation of fishing can help protect ecological value but at an increased economic cost. Locking up portions of a straddling stock like tuna will reduce revenue to the coastal state that is the location of such a closure without removing the opportunity to simply increase harvesting effort elsewhere. That is, it exacts a cost on the Seychelles without doing anything to affect the overall tuna mortality across the Indian Ocean tuna fishery.

Defining clear property rights incentivizes strong management of the resource, to maximize its ecological and economic value. Enabling sustainable catches in an efficient manner (i.e., where the fish are) will result in the coastal nations maximizing revenue from their resource while management under strong property rights ensures that the fish stocks thrive ecologically. This is illustrated by the Vessel Day Scheme in the Western and Central Pacific Ocean tuna fishery. Not only does this other fishery with defined property rights have the healthiest tuna stocks in the world, but the fishery has also provided around US$400m in revenues to the small Pacific island nations that participate in the Vessel Day Scheme.[73]

3.2 Marine Spatial Planning

UNESCO and its Intergovernmental Oceanographic Commission developed a comprehensive description of the relatively new process of Marine Spatial Planning (MSP).[74] The UNESCO guide asserts that:

> *"Marine spatial planning (MSP) is an idea whose time has come… when applied at an ecosystem level, it is a practical approach that moves toward ecosystem-based management of marine areas."*[75]

UNESCO further defines MSP in terms of what it is and who does it (emphasis in document).

> **"Marine spatial planning (MSP) is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process."**[76]

The UNESCO guide presumes that both the establishment of ecological, economic and social objectives for the use of marine resources and the management of those resources are functions of government, subject to an associated political process. MSP claims to apply a more 'rational' planning framework to this political process and that this planning framework and process is to be implemented by professionals or experts. Accordingly,

> *" … this guide is primarily intended for professionals responsible for the planning and management of marine areas and their resources. Most professionals responsible for the planning and management of marine areas and their resources usually have scientific or technical training in areas such as ecology, biology, oceanography or engineering. Few have been trained as professional planners and managers."*[77]

The MSP framework is expressed as ten steps, as summarized in Figure 9 on page 19.[78]

72 Bigeye tuna, Skipjack tuna, Yellowfin tuna, Seafood Watch Report, Oct 3, 2016. Alexia Morgan, Consulting Researcher

73 https://www.pnatuna.com/vds, https://oceanconference.un.org/commitments/?id=20314

74 Marine Spatial Planning: A Step-By-Step Approach Toward Ecosystem-Based Management, Report, May 2009. Charles Ehler & Fanny Douvere. UNESCO's intergovernmental Oceanographic Commission (IOC) and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6. Paris: UNESCO. 2009 (English).

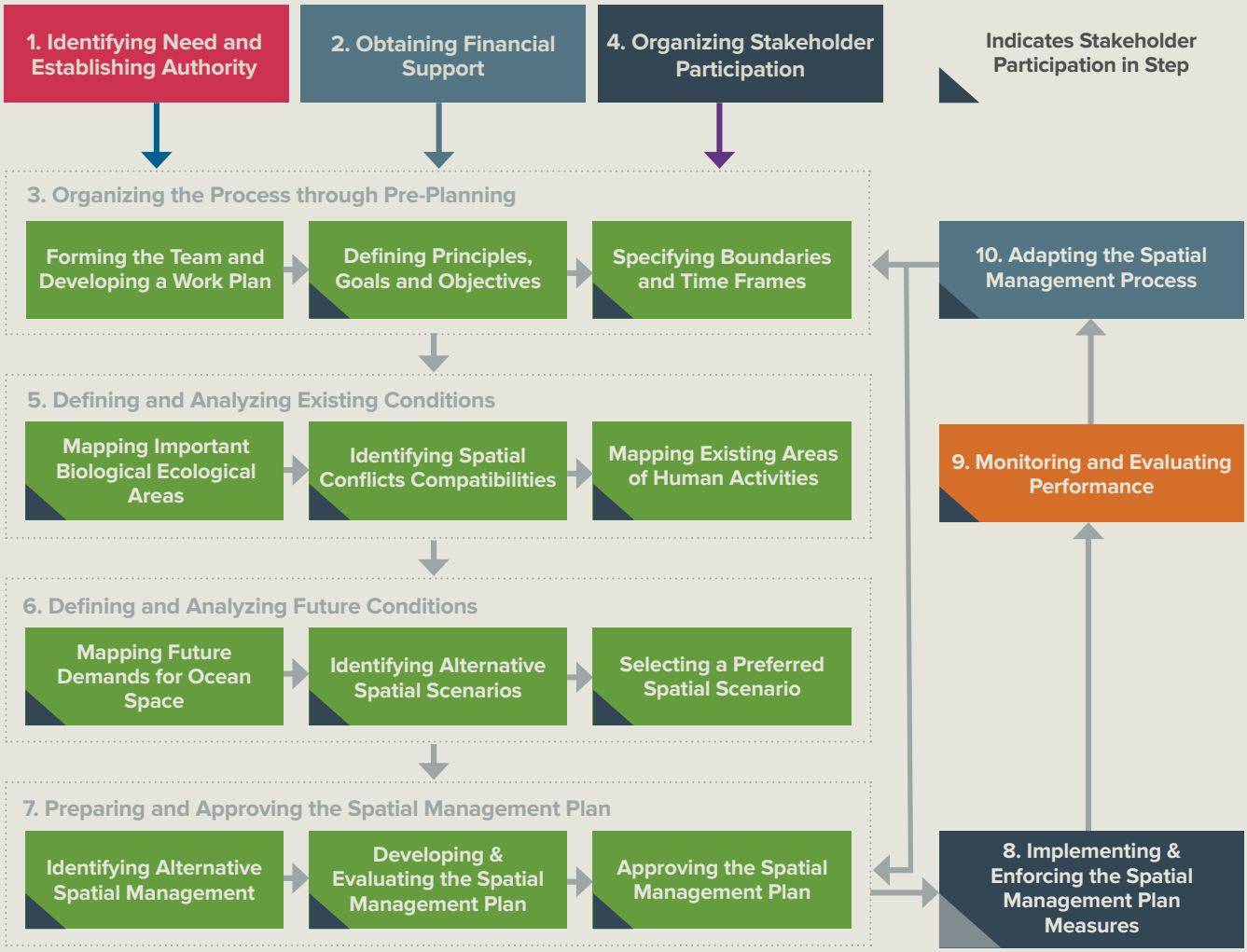
75 p. 7, *Ibid.*

76 p. 18, *Ibid.*

77 p. 10, *Ibid.*

78 See Figure 1, p. 14, *Ibid*

Figure 9: IOC's Step-by-Step Approach to Marine Spatial Planning



MSP begins with a centralized vision of the marine future and then sets out how individuals are to be 'induced' to realize that vision (emphasis in original).

> *"Once a preferred scenario or alternative future is decided (Step 6, Defining and analyzing future conditions), then this final phase of planning answers the question: How do we get there?" "A fundamental component of a marine spatial management measure involves the basic question: How can human activities be induced to do what is necessary to produce the desired mix of goods and services from the marine management area? You might need incentives to implement the management measures and achieve results."*
>
> *"The goal of MSP is to balance demands for development with the need to protect the marine environment."*[79]

3.2.1 Location-based Planning or Ecosystem-based Planning?

Land-based resource management is location-based, whereas marine management requires an ecosystem focus on dynamic marine resources. This difference explains why the simple transfer of resource management and planning arrangements, which evolved on land, may not work in the marine environment.

> *"Typically, the management boundaries of the marine area will not coincide with the boundaries of a single ecosystem, because often a number of ecosystems of varying sizes exist within, and may extend beyond, the designated management area. At the same time, the boundaries will probably coincide with only some of the areas from which demands are imposed on the resources of the marine area for which you develop MSP. Finally, the boundaries are not likely to delimit the influences of natural processes that are external to the designated management area, such as larval dispersion, sediment transport, and atmospheric deposition of nutrients."*[80]

There are fundamental differences in how marine and terrestrial ecosystems are structured and function. The basis for nearly all sea life is the photosynthetic activity of microscopic aquatic plants in free suspension within the upper layers of the water column. Pelagic phytoplankton, (including cyanobacteria) are responsible for perhaps 95% of all marine primary productivity.[81] The productivity of marine ecosystems supported by phytoplankton is affected by light and nutrient levels, which, in turn, can be affected by the degree of turbulence and mixing occurring at certain ocean locations. These productive locations can be thousands of kilometers away from the sites where the benefits of that photosynthesis are captured by other species in the ecosystem.

In contrast, primary productivity on land is dominated by large sessile plants. That is, productive photosynthesis typically occurs in exactly the same location where the resulting benefits are harvested. For example, a tree grows exactly where it is eventually harvested. This means that land-based ecosystems can be more readily subdivided or 'zoned' because the location of primary productivity and its subsequent utilization are co-incident. Externalities, or spill-over effects, are more naturally contained in land-based ecosystems compared with their marine equivalents.

Marine and land ecosystems comprise three basic trophic levels in the food chain (autotroph, herbivore and carnivore). Unlike land systems, however, many of the autotrophs and herbivores in the marine environment are microscopic, live in free suspension and are short-lived. Marine ecosystems tend to have more trophic levels than terrestrial and there is considerable blurring between these levels in the sea. Filter feeders (which have few land equivalents) consume whole organisms on the basis of size, rather than type. Moreover, some fishes as they grow, switch from herbivorous to carnivorous diets.

The differences between marine and terrestrial ecology explain why the simple transfer of resource management and planning arrangements, which evolved on land, may not work in the marine environment. Basic marine ecological facts and principles are realities that effective management institutions must be designed around. Land-based rules are generally designed to accommodate agriculture and production forestry - not the management of wildlife. Also, on land, differing uses can coexist alongside one another. For example, a dairy farm can thrive beside an apple orchard because the two different uses in these zones don't generally interfere with each other.

However, this is not the case in the ocean. Marine organisms clearly don't obey zoning demarcations. The maintenance of marine ecosystems in a 'natural' shape means that extractive and non-extractive uses of those ecosystems must find ways to overlay each other and co-exist within the same geographic space compared with the situation on land where competing

79 p. 71, *Ibid.*

80 p. 39, *Ibid.*

81 Marine Biology: An Ecological Approach, 3rd Edition, 1993, Nybakken, James W, Harper Collins College Publishers.

uses are geographically "fenced." Furthermore, the aggregate impact of these uses needs to be managed collectively rather than trusting to spatial separation for an aggregate outcome. The objective of productive marine ecosystem management is to maximize the extent to which otherwise competing uses can accommodate each other by mutually beneficial arrangements between the holders of spatially co-incident non-exclusive rights.

3.3 Marine Protected Areas

It is worth asking whether implementing MPAs over 30% of the Seychelles' EEZ will effectively address marine management issues present in the Seychelles.

3.3.1 Are MPAs an Effective Marine Management Tool?

Highly migratory species such as pelagic tuna species do not always have a 'home base' from which they disperse. They move in response to oceanic conditions that determine the location of food sources and can spawn at different places and times. Even species that have well-defined spawning times and grounds seldom require protection from harvesting at spawning for successful breeding and recruitment to occur, provided the spawning stock itself is managed at sustainable levels.

Ultimately, the health of the stocks that comprise an ecosystem and the health of the ecosystem that is the sum of all of those inter-related stocks is a function of the population size or biomass of those stocks and whether the ongoing ecological relationships between individual stocks are supported by those absolute and relative sizes. An integrated stock management approach is therefore the only sound foundation for ecosystem management where human extractions from component species in those ecosystems is occurring.

3.3.2 Will MPAs Address the Marine Ecosystem Management Issues in the Seychelles?

The documents that lay out the reasons for the two blue finance transactions indicate that the Seychelles does not have significant marine ecosystem management issues at this time. There are some routine and localised fisheries management problems on the Mahé Plateau. These fisheries management problems derive from effectively allowing open access to the harvesting of demersal fish species for which demand is outstripping supply.

If the SWIOFish3 project is to address these fisheries management issues, then the project's stated benefits and its measurable goals will be expressed in terms of these issues. However, this is not what we observe. The SWIOFish3 Project Appraisal Document (PAD) presents the following 'overall project benefits':

> *"A scenario for the baseline 'without' and one for the 'with' project can be developed by Component and activity groups. The estimated IRR [Investment Rate of Return] after 6 years would be 16 percent, which would be more than prevailing discount rates (between 6 percent and 7 percent). The IRR estimated value is most likely lowered by the current lack of information rather than by low project expected benefits, in particular for the Seychelles where essential capacity already exists. The assumptions used at all stages are very conservative, in particular for the benefits from the Blue Investment Fund, which may materialize earlier than assumed as some of the preparatory work has been undertaken during the preparation of the project.*
>
> *The IRR is highest for activities under Component 1, to contribute to the extension and management of sustainable-use marine protected areas, which carry enormous environmental benefits.*
>
> *The rate of return would also be high for Component 2 investments into improved fisheries management, although estimates cannot account precisely for benefits from improved information and monitoring systems and are therefore very conservative. Component 3 investments to strengthen private sector capacity have the highest monetary return potential to support sustainable economic activities, but in the absence of further details about the types of supported projects, eligibility criteria, M&E of past projects, and so on at this stage, expected returns are taken to be relatively low to take potential risks into account. ...*

Scenarios	%	Total for Seychelles
Investment costs (US$, m)	-	25.29
Base IRR (6 years)	-	16%
IRR (10 years)	-	27%
NPV (6 years) with discount rate (US$, m)	6%	10
	7%	8
IRR (6 years)	Costs + 10%	13%
	Costs + 20%	11%
	Returns - 10%	12%
	Returns - 20%	9%

Table 8.5: Economic IRR and Sensitivity Analysis

To conclude, the IRR estimated at the end of the project (6 years) is relatively high (15.6 percent), rising to 27 percent after 10 years without further investment (table 8.5)."[82]

The IRR above depends strongly on inclusion of non-monetary benefits such as 'increased resilience to climate change' which are 'monetized' by workings that are not shown. Including subjective non-monetized benefits in IRR calculations may support high estimated rates of return, but at the cost of analytical rigor. In the calculation above, Blue Investment Fund projects are assumed to be highly profitable although we are unable to assess the validity of this assumption until the results of loaning businesses money becomes apparent over time.

In short, project outcomes are not primarily expressed in terms of marine resource management outcomes, but are, instead, expressed in terms of return on investment. Expending cash to generate non-cash benefits is not a return on investment, even when presented as an investment with financial returns. It is an expenditure on social welfare, and it is best presented as such. Both of the blue finance transactions examined in this report involve debt financing. Debt is generally serviced and repaid from the cash generated by the underlying investment activities financed by the debt. In this case, however, there is essentially no linkage between the Seychelles' blue debt financing and its ability to meet debt-related obligations. The disconnect is the result of grants, guarantees, and the fact that the funds do not generally generate positive cash flows.

3.3.3 SWIOFish3 Measurable Objectives are Largely Unrelated to Marine Management

It is interesting to note how SWIOFish3 Project Development Objectives have been defined. They appear unrelated to project activities, which suggests that the optimistic IRR estimates above may not be assured.

To illustrate this issue, we list the project development-level results indicators, and assess their appropriateness as measures of effective ocean management:[83]

Sustainable-use marine protected areas with a Management Effectiveness Tracking Tool (METT) score of 50 or higher (from 0 to 50,000km^2)

As noted above, the magnitude of no-take zones and managed zones was pre-specified by the Seychelles and multilaterals well prior to the performance assessment phase of SWIOFish3. The METT methodology is a rapid self-assessment based on a scorecard questionnaire, with an emphasis on context, planning, inputs and processes. It elicits responses like "low", "medium", or "high", which are inherently subjective.[84] An appropriate measurement of 'whether management of sustainable-use protected areas is effective' would seem to be whether underlying species that require protection are present at sustainable levels. The measurement inherent in Kobe plots and Majuro plots would seem to be more appropriate than the size of marine areas that achieve a minimum METT score.

Share of key demersal indicator species stable or rebuilding in the Mahé Plateau fisheries (from 11 to 55%)

The detail underlying this target defines 'rebuilding' in terms of increasing Catch per Unit Effort (CPUE). Increases in this catch rate ratio can indicate an increase in abundance or stock size, only if the associated harvesting sector structure and technology remain stable through time. However, harvesting is far from stable on the Mahé Plateau during this time period, given the need to significantly reduce fishing effort on the Plateau. Thus, the CPUE cannot be used to draw robust conclusions about species rebuilding trends.

82 World Bank Report No: PAD2156. Project Appraisal Document for Third South West Indian Ocean Fisheries Governance and Shared Growth project (SWIOFish3) September 8, 2017 (111 pages).

83 p. 15, *Ibid.*

84 *Lessons Learned From 18 Years of Implementing the Management Effectiveness Tracking Tool (METT): A Perspective from the METT Developers and Implementers.* Parks Vol 25.2 November 2019 | 79 Sue Stolton, Nigel Dudley, Alexander Belokurov, Marine Deguignet, Neil D. Burgess, Marc Hockings, Fiona Leverington, Kathy MacKinnon and Llewellyn Young.

Ratio between consumer price per kilogram and landed catch price per kg in artisanal fisheries (from 110% to 130%)

The ratio between consumer price and landed price does not necessarily indicate anything about the amount of value being added to fish. There are many reasons that this ratio might increase, and almost none of them indicate that artisanal fishers are better off.

- **The landed catch price drops and the consumer price is unchanged.**
  The landed catch price drops and the consumer price drops less.
  It is not apparent how this indicates an improvement in the artisanal fishery. Artisanal fishers would appear to be worse off, in that their share of the consumer price drops. Yet, this project outcome would be deemed a success by this metric.
- **The consumer price increases and the landed catch price is unchanged.**
  The consumer price increases and the landed catch price increases less.
  If new fisheries management increases the relative scarcity of locally-caught fish, the consumer price may well increase. It would be disappointing if that increased pricing was not enjoyed by artisanal fishers. Yet, this disappointing project outcome would be deemed a success by this metric.

It is likely that the highest and best use for artisanal fish caught in the Seychelles is that the fish would be served fresh in a hotel restaurant. No 'value adding' activity is required other than delivery and cooking. If artisanal fishers develop a close working relationship with the hospitality industry, the beach price would be very close to the consumer price. That is, artisanal fishers would cut out the intermediary, driving this ratio down to 100%. Yet, this apparently desirable outcome would indicate a project failure.

Share of bycatch landed and sold in the Seychelles (from 10% to 50%)

The objective of fishers is presumably to sell bycatch species for the highest price. The fact that only 10% of bycatch is currently sold locally suggests that local prices are not very compelling. Selling a larger quantity of bycatch fish locally would not appear to be a successful project outcome if it requires product to be diverted from more profitable customers.

Share of citizens of the Seychelles who rate management of sustainable-use marine protected areas and selected fisheries as 'Satisfactory' or above (disaggregated by sex and age)
(50% positive perception of marine management)

Fisheries Management is a real-world activity that lends itself to objective performance measurements such as whether species are above or below the target or limit reference points for a species stock size (estimated tonnes of biomass). In contrast, perceptions are primarily a function of what information is supplied to people and therefore produces an unreliable measure of actual fisheries management performance.

The adoption by the World Bank of five KPIs that appear to be irrelevant or deficient should be of concern. Replacing standard measures of marine management effectiveness with idiosyncratic metrics may be an attempt to signal project 'success' regardless of marine management outcomes.

The information detailed above reveals a disconnect between environmental goals and measures of success and suggests that large MPAs are unlikely to deliver the hoped-for combination of ecological and economic returns for the Seychelles.

MPAs amounting to 420,000km^2 are dramatically larger than needed to address the fisheries management issues of the Mahé Plateau, which is a mere 41,000km^2. MPAs that are not on the Mahé Plateau are irrelevant to the Mahé Plateau. Compared with the employment of conventional fisheries management policies, MPAs on the Mahé Plateau will impose certain and large costs on the commercial, sport and artisanal fisheries with associated negative economic impacts on tourism in exchange for the uncertain and lesser benefit of 'spillover' effects.

MPAs of 420,000km^2 will not deliver any benefits to the Seychelles through its shared tuna fisheries. Closing areas to tuna fishing in the Seychelles will reduce licence revenues to the Seychelles without reducing any IOTC tuna catch. The displacement of harvesting effort from the Seychelles EEZ will make the Seychelles a relatively less-attractive tuna landing and processing destination. Consequently, the Seychelles is likely to bear the lost revenues associated with EEZ closures while other competing IOTC nations reap any available benefits.

3.4 A Corporate Finance Perspective on the Seychelles Blue Finance Transactions

These two Seychelles Blue Finance transactions illustrate the application of corporate finance concepts and tools to achieve desirable oceanic outcomes. It is therefore appropriate to examine these transactions from a corporate finance perspective.

3.4.1 Security and Default

Both of the Seychelles blue finance transactions discussed in this report are structured primarily as debt transactions. A particularly desirable attribute of debt structures like bonds is that they place considerable discipline on the borrower to ensure that the expected benefits derived from debt funding actually become a reality. If those benefits do not materialize, the borrower is likely to forfeit the underlying asset or business to the lender. In the case of blue financing, this discipline appears to be weak. Specifically,

- Because many of the funded innovations do not generate direct, traceable cash flow benefits, there is reduced accountability to ensure the cash flows materialize and support bond payment obligations; and
- The underlying asset is generally sovereign property and cannot be transferred to the lender in circumstances where the predicted benefits do not materialize.

Debt is seen to be "hard governance" because default typically triggers a transfer of control of the funded investment – from the borrower to the lender. As noted above, this aspect of hard governance does not apply to a nation's sovereign debt, but these blue financing transactions aspire to be more than simply sovereign borrowing. Consequences on default can (and often do) apply to a nation's debt that relates to a specific investment or public private partnership asset.

A potential reason why these blue finance transactions have generated considerable excitement is that they project a rigorous sense of hard governance and due diligence regarding the underlying oceanic initiatives and their likely benefits. Here is an illustrative set of quotes indicating the engagement of private debt capital with the Seychelles' ecology and blue economy initiatives:

- "The blue bond is one way to create a link between investors and blue economy projects."[85]
- "... the Seychelles blue bond is expected to stimulate interest among public and private investors wanting a bigger role in ensuring the sustainable use of ocean and marine resources."[86]
- "... the challenges facing our oceans are too big for governments alone to tackle and the private sector – in this case impact investors – can play a crucial role in the development and protection of ocean resources for generations to come."[87]
- "Over time, [the blue bond] will generate increased revenue for government, demonstrating that investing in sustainability makes business sense. As the fisheries recover and the returns on investment flow to government and the sector, the benefits of a culture of sustainability will emerge ..."[88]
- "... blue bond was "yet another example of the powerful role of capital markets in connecting investors to projects that support better stewardship of the planet."[89]

An implied central theme in these quotes is that debt investors are linked to the underlying oceanic initiatives that are funded by the proceeds of their lending. However, as the Seychelles Blue Bond illustrates, investors are not connected with, or exposed to, the underlying oceanic activities. The structure is such that their stream of debt servicing payments is unaffected by whether or not the debt proceeds generate sufficient benefits to meet debt payment obligations. Certainly, investors in the Seychelles Blue Bond – Calvert, Nuveen, and Prudential, need not spend due diligence resources on the underlying use of the funds. This is because they are largely insulated from the underlying SWIOFish3 project financial outcomes by (1) a US$5.0m GEF concessional loan to the Seychelles Government to cover the blue bond interest payments; and (2) a US$5.0m IBRD partial loan guarantee.

Stated differently, these blue finance transactions do not fund "investments" that will service the loan. Rather, they are sovereign borrowings that will be expended to enhance national welfare – and whether the funds enhance welfare or not is irrelevant to repayment. In that sense, investors provide essentially no governance oversight – strong or otherwise – of the underlying projects, despite the appearance that esteemed financial institutions are backing these environmental initiatives.

85 Seychelles Achieves World First with Sovereign Blue Bond, World Bank Press Release, Oct 29, 2018

86 *Ibid.*

87 *Ibid.*

88 Innovative Ocean Financing, Quote from Ms. Benzaken in promotional material for FAO Conference, Blue Ocean, Blue Growth: People, Resources, Innovation.

89 Blue Bonds: What They Are, and How They Can Help the Oceans. 6 June 2019, Maram Ahmed, World Economic Forum.

Further, even setting financial outcomes aside, it is not clear that the blue finance transactions contribute any rigor to the environmental outcomes of the funded projects. We have been unable to identify aspects of either blue finance transaction that would impose a financial penalty if the Republic of Seychelles fails to achieve desirable, measurable marine management outcomes. That is, we are unaware of debt covenants in either transaction that provide strong accountability for whether MSP and the resulting MPAs result in desirable marine management outcomes.

In short, despite the rigor implied by debt financing, we are left questioning what bond-related disciplines are contributed by using oceanic bond structures to ensure desired marine outcomes.

3.4.2 Transferability and Liquidity

A desirable attribute of a typical bond is its liquidity. That is, the bondholder can choose to sell their bond to another person or entity. Such liquidity dramatically reduces the cost of this securitized form of borrowing. Any contractual or practical restrictions on transferring a bond will increase the borrower's cost. In the case of these two transactions, we were unable to find the actual loan documents, and secondary discussion of the loans does not mention transferability. The one loan document that is publicly available is the US$5.0m IBRD loan that preceded and foreshadowed the Seychelles Blue Bond.[90] This agreement does not appear to contemplate transferability.

The issue of transferability is important, particularly for small nations, because it matters who the future lender might be. If blue bonds or other forms of blue debt financing are transferable, do the loan documents specify who can hold one of these bonds? Are there holders that are unacceptable to a particular country or issuer? These questions are important because there exist potential threats to sovereignty (or risks of unwanted interference, at least) when a large nation, corporation or wealthy individual could easily purchase 100% of a small blue bond instrument.

3.4.3 Early Repayment and its Consequences

Both of the Seychelles blue financing transactions are associated with environmental, social and governance (ESG) objectives. Both transactions fund the five objectives of SeyCCAT that were listed earlier in this report. And, as noted earlier, the process of marine spatial planning is central to the project, as is the Seychelles' commitment to establishing marine protected areas that cover 30% of the nation's EEZ.

From what we are able to tell, this commitment to marine protected areas is not related in any way to the time to maturity of either of the blue finance debt structures. In fact, as noted previously, the Seychelles had committed to establishing these MPAs well before either transaction. So, these commitments do not appear to be extinguished in any way at maturity of these loans. In that sense, perhaps "equity" is a more apt metaphor than "debt" since equity investor rights do not mature or expire like a bond does. Under the "debt" metaphor, a lender's strictures on the borrower cease on repayment.

There is every indication that the Republic of Seychelles is happy with its commitment to establish MPAs in perpetuity. However, it is instructive to consider, hypothetically, what would be involved if at some future time the Republic chose to extricate itself from these strictures. The Seychelles has voluntarily passed up an aspect of its marine sovereignty in favor of shared governance with two lenders – The World Bank with respect to SWIOFish3, and The Nature Conservancy with respect to SeyCCAT.

An important step would be extricating the Seychelles from its borrower relationship with both entities. The question arises as to whether the debt arrangements allow for early repayment. If so, are there any penalties, explicit or implied, associated with early repayment? Would the grants associated with each of the two blue finance transactions also be recallable, in part or in whole, if the Seychelles chose to try and repay the loans but keep the grants?

90 Loan Agreement (Third South West Indian Ocean Fisheries Governance and Shared Growth Project) Between Republic of Seychelles and International Bank for Reconstruction and Development, Loan No. 8779-SC.

Another step would be extricating the Seychelles from the joint governance inherent in SeyCCAT. Section 29 of the Conservation and Climate Adaptation Trust of Seychelles Act 2015 allows the SeyCCAT board to dissolve the trust in certain circumstances. These are bankruptcy, loss of tax-exempt status, or circumstances in which "it has become impractical to achieve the objects of the trust." Dissolution in such circumstances would take an extraordinary resolution adopted by a special majority vote. That requires agreement from (a) both of the ex officio directors – the one appointed by the Seychelles Government and the one appointed by The Nature Conservancy; and (b) at least two thirds of the other seven directors. That means seven of the nine directors would have to approve dissolution of SeyCCAT, including the director appointed by The Nature Conservancy. Such a vote is unlikely to be carried in the context of seeking to extricate the nation from joint governance.

Thus, in addition to the question of whether such arrangements can be legally unwound, it is also worth examining whether they can be practically unwound.

The assets of the trust, with the exception of the endowment fund, are to be distributed to non-profit organizations, so no assets flow to the Republic of Seychelles on dissolution.

Even if, as a practical matter, SeyCCAT cannot be disestablished, as long as its debt obligations to The Nature Conservancy are either extinguished or fulfilled, the trust can presumably be largely ignored by either of its governing parties. The resulting estrangement would presumably lead to "divorce" at some stage, when the directors agree that "it has become impractical to achieve the objects of the trust."

The MPAs were established by gazetted order of the president under national parks legislation. Whether they can be undone by similar orders is untested. Regardless, such an action would be subject to considerable political cost. Having placed sovereign assets under outsourced governance, the agencies with a stake in the MSP process can be expected to marshal all means available to avoid a nation undoing the resulting protections. Thus, in addition to the question of whether such arrangements can be legally unwound, it is also worth examining whether they can be *practically* unwound.

3.4.4 Separating Investment and Financing Decisions

Emergence of the so-called 'impact debt investor' links a lending decision to the activity to which the debt proceeds are applied. This is not typically how investment and financing decisions are analyzed in financial economics. A central theorem of financial economics is the separate analysis of investment and financing. This is often referred to as Fisher Separation. It enables organizations to focus on value-optimizing investment decisions, separate from the decision about how such investment might be financed, and, importantly, the preferences of the investors providing the finance needed for profitable investment. From this perspective, there is no such thing as green finance or blue finance; there is just finance. Leaders of a nation will prioritize a series of potential projects on the basis of their enhancement to welfare, relative to project cost. Secondarily, national leadership will seek to finance as many of these projects as is feasible within prudent management and fiscal constraints. Given Fisher Separation, the lenders' preferences can be separated from the nation-borrower's decisions as to which projects are selected. Nations can simply select the most welfare-enhancing projects, and lenders can seek the highest risk-adjusted return for their capital.

An impact investor's actions can be decomposed into two equivalent parts. First, the impact investor can lend the funds needed for a defined activity at the appropriate risk-adjusted return. Second, the impact investor can donate sufficient funds (in lump sum or as a series of cash flows) to the borrower so as to induce whatever non-commercial aspects the lender seeks. The benefit of this equivalent unbundling is that it clarifies the true cost of funds, and it delineates the commercial and altruistic aspects of the lender's actions.

This hypothetical (or actual) unbundling is important because experience indicates that the bundling of commercial and altruistic attributes in the same transaction can lead to value-destroying actions by the borrower. Further, unbundling often identifies better and clearer ways of achieving each party's objectives. If an NGO like The Nature Conservancy is seeking to fund an MSP process and establishment of MPAs, they can seek to separate the commercial funding aspect of the needed project support from the altruistic aspects. It is likely that NatureVest is not naturally the lowest-cost lender to nations like the Seychelles. We have to assume that highly-diversified commercial institutions with established access to capital will be able to bear the risk of loaning to the Seychelles more effectively than NatureVest can – on a purely commercial basis. This might suggest a solution under which the Seychelles negotiates a principal and interest discount with its existing lenders, and NatureVest (or TNC) explicitly funds the altruistic cause that its members wish to advance. In a sense, this is what has happened, since the repaid debt is a complete pass-through from the government's perspective, except that the $1.2m discount on principal negotiated by the Seychelles Government on repayment was voluntarily transferred into SeyCCAT.

Stepping back from the details, any 'impact investing' transaction can be decomposed into its commercial and non-commercial components. That can often identify simpler arrangements that achieve the same outcome. Such arrangements include purchasing defined outcomes or contracting out for defined inputs, services or outcomes.

We note that corporate finance typically seeks to first identify a value-creating investment and then subsequently to arrange for its financing. In a sense, both of these blue financing transactions reverse this order. The debt transactions raise funds that are funnelled into either SeyCCAT or into the Development Bank of Seychelles. Those funds are then made available as either grants or loans for previously-unspecified projects that will hopefully enhance the nation's welfare – particularly from an oceanic health standpoint. Thus, in the blue financing transactions, *funding is seeking ideas*. Experience indicates that there is significant merit in the traditional order in which ideas are *seeking funding*.

4 Summary and Conclusion

Like most observers with an interest in oceanic health, we were fascinated by the two Seychelles' blue financing projects – The Nature Conservancy's 'Debt for Nature' transaction, and the World Bank-organized Seychelles Blue Bond. Our initial awareness and understanding of the Seychelles' blue financing projects began with media reports that picked up on press releases from the Republic of Seychelles, The Nature Conservancy, and the World Bank. On the basis of these accounts, we set out to understand the linkages between these transactions and marine resource outcomes.

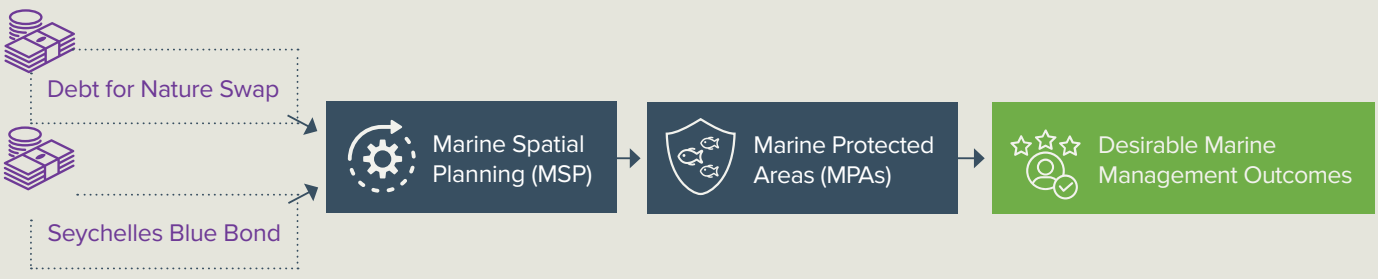
As our research progressed, it became apparent that the two transactions, together, funded the Seychelles Government's obligations under SWIOFish3 a World Bank project (Third South West Indian Ocean Fisheries Governance and Shared Growth Project). These obligations were largely pursued operationally through SeyCCAT, Seychelles Conservation and Climate Adaptation Trust, a trust established by legislation that is jointly managed by the Seychelles Government and The Nature Conservancy. And, at the center of SWIOFish3 and SeyCCAT, is a marine spatial planning process that is managed by The Nature Conservancy.

It establishes a zoning system for marine locations, much like land-based systems of zoning.

There was no particular linkage inherent in the two funding mechanisms that was either tied to (a) **cash flows** generated from specific blue economy initiatives; or (b) **covenants** designed into the debt instruments inherent in the transactions that specified that the borrower must achieve metrics associated with effective marine management. As far as we can tell, the outcomes would have been the same if the World Bank and The Nature Conservancy had provided an equivalent mix of grants and investment in sovereign debt. Also, The Nature Conservancy's 'Debt for Nature' transaction did not provide funding in exchange for a commitment to establish large marine protected areas – the Seychelles had already committed to large marine protected areas well before the transaction.

Instead, the linkage between the blue finance transactions and oceanic health is indirect; the transactions fund marine spatial planning, marine spatial planning will specify marine protected areas, and marine protected areas will result in desirable marine management outcomes. These implied linkages are depicted in Figure 10.

Figure 10: The Implied Blue Linkages



Whether or not these 'blue finance' transactions are using debt's inherent "strong governance" to directly require marine management could be said to be unimportant if these transactions, grants and loans result in funding for projects that achieve desirable marine management outcomes. However, it is not obvious that the projects and activities funded by these transactions will result in desirable marine management outcomes.

The substantial number of documents we have reviewed appear to correctly identify the marine management challenges currently facing the Seychelles. These challenges are by no means unique to the Seychelles. They have well-established solutions and well-established metrics to assess progress toward a well-managed fishery.
It remains to be seen whether a variety of untested and highly speculative blue activities, broadly defined, with an associated set of idiosyncratic goals can deliver effective management of the Seychelles' marine resources.

The Seychelles could have, instead, directed its efforts, with greater transparency, towards explicit management of identified marine resource challenges using established methods and metrics.

The Seychelles' blue finance transactions are central to funding SWIOFish3 and its underlying marine spatial planning process. The Seychelles has been widely celebrated for this leadership in blue finance, and its willingness to subject its marine resources to outsourced governance rather than its own sovereign management. This outsourced governance approach has provided non-trivial grants from multilateral agencies and non-governmental organizations. While such grants would be welcome to any small nation, there are reasons to expect that SWIOFish3 will deliver technically disappointing ecological and economic results.

Also, the magnitude of multilateral and NGO grants is significantly below the value that a nation with a large exclusive economic zone can derive from a well-structured, well-managed marine management regime that defines defensible, transferable property rights. To illustrate, the Western & Central Pacific Ocean tuna fishery management by Parties to the Nauru Agreement (PNA) generates US$400m per year through the Vessel Day Scheme's (VDS) property rights approach. And, importantly, the VDS has achieved exceptional tuna fishery ecological outcomes. The combined EEZ of the Parties is just over 13m km^2 ; the Seychelles EEZ alone is roughly a tenth of this multi-national tuna fisheries region.

Similar collaborative regional approaches to marine resource management in the Indian Ocean could in a single year provide the Seychelles with more financial resources than all funding received for SWIOFish3. And, strong incentives to achieve meaningful, measurable ecological outcomes is inherently built into such systems.

In contrast, large marine protected areas don't imply management, and they do nothing for overall fish mortality when that is being established through regional agreements. While MPAs may have some benefits for coastal fish or other marine resources that have a fixed location, such interventions are typically small and relatively targeted. Importantly, MPAs do little for migratory fish resources. Such resources are typically managed regionally by assessing actual biomass relative to sustainable levels, and specifying a sustainable level of catch or fishing effort. Once that is set, the number of fish that will be harvested from that resource is unaffected by the establishment of a marine reserve, etc.

These transactions fail in several ways to apply debt's "strong governance" attributes to environmental challenges.

When a nation passes up its sovereign management of marine resources by outsourcing governance, in whole or in part, it complicates its ability to participate in ecologically effective and economically rewarding regional solutions with neighboring nations. This is illustrated by Palau's strained relationships with its PNA partners. Fish don't have passports. Because colored lines on a map do not constrain the movement of migratory fish stocks, effective marine management requires a regional approach, not an individual-nation approach. This economically and environmentally-important regional cooperation among sovereign nations is thwarted by outsourcing sovereign marine governance and by establishing large MPAs.

So, are the Seychelles' blue finance transactions a blueprint for similar countries? Sadly, our initial excitement at the concept of using the rigor of debt financing to ensure desirable environmental outcomes did not survive close examination of the actual transactions. These transactions fail in several

ways to apply debt's "strong governance" attributes to environmental challenges. First, financial investors have little incentive to examine the underlying economics of how blue bond proceeds will be used. The lenders' investment was largely backed by multilateral financial agencies, not by cash flows generated by underlying environmental activities. So, this type of investment arrangement cannot be interpreted as an independent vote of confidence in the underlying activities. Second, a borrower that fails to achieve desirable environmental outcomes does not suffer consequences that derive from the way these debt instruments are structured. Covenants would not appear to be violated, and control of an underlying asset does not transfer to the lender. In that sense, blue finance appears to be substantively equivalent to the funding of marine spatial planning and unspecified "investments" in the blue economy – funded by a mix of subsidized sovereign borrowing and philanthropic grants.

Countries in similar circumstances to the Seychelles would need to convince themselves that it is a fair trade to take on debt in exchange for (a) marine spatial planning; (b) funding to offer grants and loans to people with "blue ideas"; and (c) outsourcing sovereign resource management. A national decision such as this is especially stark when compared with established marine management approaches that generate external funding, have proven environmental outcomes, retain sovereignty, and enhance national wellbeing through improved national food security and resilient economic activity.

Annex

Table 4: SeyCCAT Blue Grant Funding of Small/Medium Projects

Title	BGF	Obj	Lead Partner	Grant	Co-financing	Months
Seaweed: A Hidden Resource – a Recycling Project	3	4	Women in Action in Solidarity	100,000	25,000	10
Proze Caiman. Filming mangrove habitat documentaries	3	3	Allen Boniface	99,720		12
River mapping and monitoring and mangrove habitat mapping project for the sustainable development of Praslin island	3	4	Department of Energy and Climate Change	100,000	90,500	12
Explore the route to market for seafood from local fishermen	3	5	Shahiid Melanie	98,300		8
Blue Education: The key to equipping youth of Seychelles with knowledge, skills and understanding to become engaged, productive and successful in investing in Seychelles Blue Future	3	2	Nathalie Duval	100,000		12
Citizens' Guide to Climate Change	3	4	Sustainability for Seychelles (S4S)	100,000	100,000	7
Blue Economy Internship Programme - 4th Edition	3	5	SIDS Youth AIMS Hub – Seychelles	99,698	18,750	7
Improving socio-economic knowl-edge of Seychelles Artisanal Fishery	1	2	Karine Rassool	100,000		18

Table 5: SeyCCAT Blue Grant Funding of Large Projects

Title	BGF	Obj	Lead Partner	Grant	Co-financing	Months
Documentaries and Promotional Videos	3	5	Barbara Hoareau	1,000,000	1,133,528	24
Entrepreneurship Development in the Blue Economy Sector through capacity building for MSME's & ESA Staff	3	3	Enterprise Seychelles Agency	1,000,000		12
Fishing Livelihoods and Fisheries Management in the Mahé Granitic Island, Seychelles: A Cost-Benefit-Analysis based on a Value Chain Approach	3	2	Keith Andre	533,000	162,000	24
Community-based ecological wetland rehabilitation, Pasquiere, Praslin	3	3	Terrestrial Restoration Action Society of Seychelles	948,262	965,688	24
Produce underwater documentary series	3	2	Dillys Pouponeau	529,686		12
Go Now! Coordination of volunteers	3	5	Lisa Bastienne & Shafira Charlette	632,647	91,600	24
Roadmap to blue carbon opportunities in the Seychelles	3	1	James Michel Foundation	1,000,000	945,000	10
Pilot and integration of tracking, logbook and market traceability tools for co-management of the small-scale fisheries sector in Seychelles	3	5	Fishermen and Boat Owners Association	1,000,000	1,071,500	18
TGMI Blue Economy accelerator program	3	5	The Guy Morel Institute	970,000		24
Marine Scholarship Programme	3	5	Wiseoceans	998,563	809,701	24
Mapping coral population connectivity and ocean currents to inform management & policy of the coral reef system in Seychelles	3	1	Seychelles Islands Foundation	1,000,000	1,863,600	24

Title	BGF	Obj	Lead Partner	Grant	Co-financing	Months
First use of satellite telemetry on small pelagic and abundant seabirds (juvenile Sooty Terns) to define potential MPAs through identification of foraging areas used during the gaining of independence from their parents	2	1	Rachel Bristol	903,600	575,290	24
Marine Biodiversity baseline assessment around Fregate Island, the eastern most Seychelles 'Inner' granitic island	2	1	Green Islands Foundation	405,000	575,000	15
Abundance, habitat selection and movements at sea of the Red-footed Booby (Sula sula) as informative tools for conservation within the Seychelles Marine Spatial Plan	2	1	Island Conservation Society	1,000,000	723,700	24
Assessment and Valuation of the Parrotfish Fishery to Support an Ecosystem Approach to Fisheries	2	2	John Nevill	498,000	482,000	18
Assessing the effectiveness of Curieuse Marine National Park in the protection of the critical early life stages of sicklefin lemon sharks (Negaprionacutidens)	2	1	Global Vision International – Seychelles.	550,000	550,000	18
Currents of Change: Empowering and educating in the Seychelles by investigating marine plastic pathways, composition, and recyclability alongside the removal of marine plastic pollution from the iconic world heritage site Aldabra Atoll	2	1	Seychelles Islands Foundation	1,000,000	2,497,700	18
Spatial ecology and response to catch-and-release of recreationally targeted fish species on St. François and Alphonse Atolls: Implications for conservation and management	1	1	Alphonse Foundation	1,000,000	3,800,000	36

Title	BGF	Obj	Lead Partner	Grant	Co-financing	Months
Piloting voluntary fisheries zone closure on Praslin Island for the benefit of the marine environment and fisher folks	1	1	Lasosiasyon Peser Pralen (Praslin Fishers Association) – pending final approvals	877,200	50,000	18
Blue Economy Entrepreneurs -Creating smart, sustainable and shared prosperity through entrepreneurship ecosystem assessment and training	2	5	Eco-Sol Consulting Pty Ltd (Seychelles)	596,838	112,000	10
Assessment and Mitigation of Impact of the Artisanal Fishery on Species of Local Concern	1	2	Green Islands Foundation	599,500	862,544	16
Development and Operationalisation of National Fish Identification Website and Database	1	2	John Nevill	341,500	258,495	18
Science based restoration of commercially important spiny lobster habitats to help develop a sustainable fishery	1	2	Marine Conservation Society Seychelles	950,290	959,178	12

fi•nol•o•gy [ˈfīnäləjē]
noun
the applied science of financial economics.

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