

GREEN DEBT SWAPS

- FIRMLY ON THE AGENDA

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In this paper we assess the state of green debt swaps and similar instruments, before the next push. Both the World Bank and the IMF are pushing ahead with arguing the case of green debt swaps. We have seen similar financial instruments trialled before, but a widespread acceptance by the financial mainstream has proved challenging.

It is unlikely that the debt definitions will prove particularly troublesome for these proposed swaps but with an array of green frameworks available, the eventually adopted structure will be interesting. Having the global finance community linking sovereign debt with the environment and nature is a force for good. This international reboot is encouraging.

Key takeaways

- The World Bank and the IMF are promoting green debt swaps and are working to have a plan in place by COP26. Simultaneously, ninety central banks and financial supervisory bodies are also mobilising on green finance.
- Similar debt-for-nature swaps have been tried before but it was hard work. Achieving widespread acceptance by the capital markets has been challenging.
- Investors face a diverse vocabulary for swap instruments, some of them very similar to each other or at least overlapping in structure and/or purpose.
- Economists and politicians have tested definitions to use when defining highly indebted countries. However, for the green side of the swap equation there are an assortment of frameworks available; it will be interesting to see which structure(s) is/are adopted.
- We examine various ways of allocating green debt swaps based on debt levels and the need for green investments. On this basis, a number of African countries should be the priority.
- Despite the challenge of linking mainstream financial products with nature and the environment, this push from the World Bank, the IMF and central banks should be viewed as a force for good.



World Bank and IMF promote green debt swaps

The World Bank President, David Malpass, identified the three most important challenges to a global recovery as ‘climate, debt and inequality’ and argued that ‘we will need integrated, long-run strategies that emphasize green, resilient and inclusive development’.ⁱ

In addition, the IMF’s Managing Director, Kristalina Georgieva, recently stated that ‘When we are faced with this dual crisis - the debt pressures on countries and the climate crisis, to which many low-income countries are highly, highly vulnerable - it makes sense to seek this unity of purpose’.ⁱⁱ These words mirror the communiqué of the World Bank’s and the IMF’s April Development Committee.ⁱⁱⁱ

Ms. Georgieva proposed that a green debt swap provides a potential solution. Both the World Bank and the IMF have revealed that they are developing an ‘organising framework’ which will connect debt relief to a country’s plan for investing in environmental improvement. The intention is to have a plan in place for COP26 in November. There will be further opportunities for discussion as 2021 is a busy year for meetings linked to the sustainability agenda - see Figure 1.

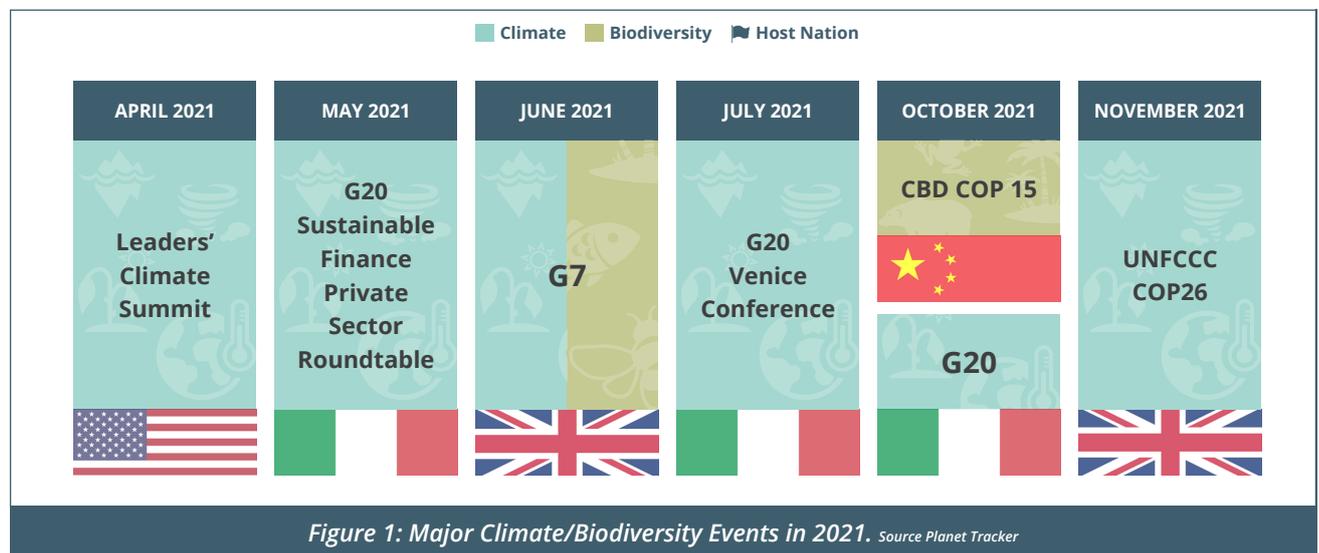


Figure 1: Major Climate/Biodiversity Events in 2021. Source Planet Tracker

What would be encouraging is if sovereigns are able to find common ground which can then be repeated at the multilateral development bank (MDB) level. This would permit the trickling down of the green financial frameworks and instruments. After all, it is the sovereigns which are the shareholders of the MDBs.

Furthermore, such an initiative would be pursuant to the recently published Financing for Sustainable Development Report 2021^{iv} by the Inter-Agency Task Force on Financing for Development and the draft recommendations of the United Nations Social and Economic Council, which invited creditors and debtors to consider “the use of debt instruments, such as debt swap initiatives, for sustainable development and climate action”.^v

For an overview of sustainable finance negotiations at a multilateral level for 2021, please see Planet Tracker’s blog ‘International Sustainable Finance Redux’.



Central Bankers join forces

The Network for Greening the Financial System (NGFS),^{vi} an organisation which aims to strengthen the global response required to meet the goals of the Paris agreement and to enhance the role of the financial system to manage risks and to mobilize capital for green and low-carbon investments, has joined forces with the International Network for Sustainable Financial Policy Insights, Research and Exchange (INSPIRE)^{vii} - one of the NGFS research stakeholders. Together they have announced the launch of a joint Study Group on *'Biodiversity and Financial Stability'*.^{viii}

The press release states that *'A growing number of central banks and supervisors have recognised the need to extend their focus from climate change to the challenges of addressing the implications of broader nature-related risks and the conservation of nature and biodiversity'*. Presently, the NGFS comprises 90 central banks and financial supervisory bodies.^{ix} These central banks have an important role in enabling the environment within their jurisdictions to mobilise capital for green investments.

Evidence of the central banks working together in the field of green finance was apparent in the Bank for International Settlements' (BIS) launch of an open-ended fund for central bank investments in green bonds in 2019.^x A second green bond fund was launched in 2021 with the result that these two funds together manage *'some USD 2 billion in green bonds for central banks'*. The expectation is that *'the funds will continue to grow considerably'*.^{xi} The Bank of Finland has recently announced an injection of USD 300 million into this fund.^{xii}

More recently the Green Swan Conference^{xiii} in early June was a further attempt to give additional impetus to green financial solutions. The four heads of the co-sponsoring organisations - the Bank for International Settlements, the Bank of France, the International Monetary Fund and the NGFS - discussed proposals for a more sustainable economy, financial sector and society.

What is a debt swap?

Debt swaps are the exchange of debt, in the form of a loan or, more typically, of securities other than shares, for a new debt contract, also known as a debt-for-debt swap. The debt can also be exchanged for equity which is known as a debt-for-equity swap.

Debt swaps often call for writing down, or discounting, the value of the original debt instrument before the conversion to new debt-for-equity takes place.

We recognise that the taxonomy of these swap instruments may have become confusing. An adaptation of the debt-for-debt or the debt-for-equity swaps are green debt swaps, debt-for-climate (DFC or D4C) and debt-for-nature (DFN or D4N) swaps. Finance for Biodiversity (F4B) has argued for Nature Performance Bonds (NPB) as a way that *'links the cost of sovereign debt with success in protecting or enhancing a country's natural capital, as part of debt restructuring'*.^{xiv} Essentially, the cost of debt payments would be tied to quantifiable biodiversity and emission reduction targets. There is speculation that Pakistan may be the first sovereign to issue an NPB.^{xv}

In these instances, an indebted developing country undertakes, in exchange for cancellation of a portion of its foreign debt, to establish local currency funds to be used to finance an environmental, climate or nature programme.^{xvi}

We should note that, although the terminology can be confusing, sometimes these instruments may not be that different.



For example, climate for debt swaps are purposed with converting reduced sovereign debt into proceeds that can be directed towards climate activities. Acceptable uses of funds will include climate mitigation - e.g., the retirement of fossil fuel power plants - or climate adaptation. In the case of the latter, it is reasonable to argue that investing in nature - conservation or enhancing diversity investments - can help communities adapt to climate change. Such nature-based solutions (NBS) are examples of uses of funds received from DFN swaps. Examples of such projects include The Great Green Wall Initiative^{xvii} and Sustainable Coastal Fisheries.^{xviii}

Debt swaps in particular are recommended for debt burden management by the Addis Ababa Agenda on Financing for Development, which supports the implementation of the objectives of the 2030 Agenda for Sustainable Development (SDGs).^{xix}

These debt swaps, whether green, climate or nature, have three main outcomes:

- 1 Enhance climate/nature/green spending** - the avoided debt service payments should be used for climate/environmentally friendly projects or to incentivise participation in aligned sectors
- 2 Boost economic recovery** - the investments could stimulate private investment and assist in economic growth
- 3 Reduce external sovereign debt** - debt servicing is reduced to allow the re-direction of cash flow to more productive investments

DFN swap characteristics

There are different categories of green debt swaps and DFN swaps, such as bilateral agreements (between two governments) or commercial debt swaps (between a commercial creditor and government debtor) or private debt swaps (between private sector companies only).

However, there are some common features that apply to most of these transaction types:

- Most of the past transactions have involved a third party – typically an international conservation NGO.
- Debt is typically purchased at a significant discount rate.
- DFN swaps typically achieve a high “leverage ratio”, (e.g., 2 to 1) making them an attractive conservation investment for donors.
- Normally the debtor government re-allocates local currency funds from the budget towards domestic conservation activities, with payment usually in cash instalments or in local bond notes. Provisions in DFN agreements minimize inflationary effects.
- The proceeds (i.e., funds) from a DFN instrument are typically channelled into a “counterpart fund” (e.g., a national conservation trust fund) that disburses the money for specific projects.

Should the World Bank and the IMF choose to link debt swaps with sustainable outcomes, it could opt for SDG-aligned bonds. Amundi and the International Finance Corporation (IFC) launched such a fund – the Amundi Planet Emerging Green One (EGO) – in the first half of 2018.^{xx} A further option is that the debt could be a partially guaranteed SDG bond. This is apparent in an existing Ghana 2030 bond which has a partial guarantee of 40% of the principal from the International Development Association (IDA).^{xxi} The IDA, part of the World Bank, is one of the largest sources of assistance for the world’s 74 poorest countries and is the single largest source of donor funds for basic social services in these countries, lending money on concessional terms.^{xxii}



A sense of déjà vu

DFN swaps are not a new idea.^{xxiii} In 1984, Dr Thomas Lovejoy of the WWF suggested adapting the debt-for-equity swap to a debt-for-nature one, as a means of protecting undeveloped land in developing countries. He urged private banks to discount debts or offer credit against debts in exchange for debtor nation protection of forested lands. His proposal included government participation through tax relief for private creditors who signed these agreements. The finance community did not respond positively, but the Frank Weeden Foundation did and allocated USD 300,000 for grants to environmental organisations to finance these types of agreements. Please see '**The first debt-for-nature swap**' below.

There are many advantages to green debt and DFN swaps, but there are also weaknesses. The Convention for Biological Diversity's (CBD) Guide Debt provides a comprehensive list^{xxiv} - see Appendix 1. An interesting paper, '*Debt-for-Nature Swaps: A Critical Approach*'^{xxv} examines a number of these structures to determine what lessons can be learned; case studies in Madagascar and Ghana are examined.

The first debt-for-nature swap

Date: July 1987

Parties: Bolivian Government and Conservation International^{xxvi}

Agreement: Conservation International purchased USD 650,000 of Bolivia's USD 4 billion external debt. In return, the Bolivian Government committed itself to setting aside 3.7 million acres in three conservation areas adjacent to the existing Beni Biosphere Reserve in the Amazon Basin.

Financial discount: USD 650,000 of debt was purchased at an 85% discount (USD 100,000) by the Citicorp Investment Bank, acting as agent for Conservation International, from other lenders in the secondary market.

Background: Bolivia's 334,200-acre Beni Biosphere Reserve was created by decree in 1982 as a model for the protection of local ethnic groups as well as for the area's plants, animals and water. Under this debt swap agreement, the expanded reserve was protected under the law, rather than under a decree that could be withdrawn. The new lands, all owned by the Bolivian Government, served as a buffer zones around the reserve. They included the 2.9-million-acre Chimane Forest reserve - home to the nomadic Chimane Indians - the Yacuma Regional Park and the Cordebeni Hydrological Basin, which together exceed 800,000 acres. The area is habitat for 500 species of birds, supports 13 endangered species of plants and animals and has more species of trees than all of North America.^{xxvii}

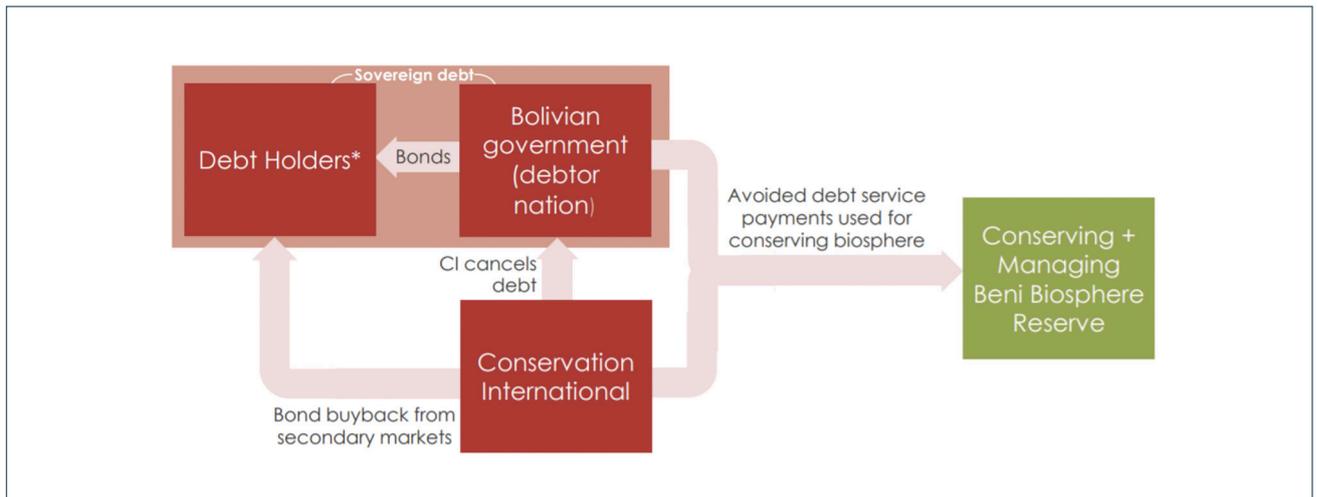


Figure 2: DFN – Bolivia (1987) Source: Climate Policy Initiative.
 *Debt holders could be private or public entities as bond buybacks are from the secondary market

High debts and green resilience – it’s down to definitions

The joint requirements for green debt swaps indicated by the World Bank and the IMF are **high levels of indebtedness** and **a climate or green agenda**.

Levels of indebtedness can be determined by simply ranking countries by government gross debt (GGD)¹ and expressing this as percentage of GDP - see Appendix 2. We chose this measure as it is widely used as a ‘key indicator for the sustainability of government finance’.^{xxix} In Table 1 we show the number of sovereign states by region for the top 30 indebted countries ranked by GGD as a percentage of GDP, averaged over 2019-20.

The list is led by Latin America but is only marginally ahead of others. It is worth noting that highly developed Europe and North America are well represented in this list in contrast to none in Oceania. It is also important to remember that because of Covid-19, this list will be subjected to change, as some countries’ economies are being affected more than others.

Table 1: Regions of the World with the Top 30 Countries Ranked by GGD/GDP (2019-20).^{xxx}

| | |
|---------------|-----------|
| Latin America | 8 |
| Asia | 7 |
| Europe | 7 |
| Africa | 6 |
| North America | 2 |
| Oceania | 0 |
| Total | 30 |

¹ Gross debt is calculated as the sum of the following liability categories (as applicable): currency and deposits; debt securities, loans; insurance, pensions and standardised guarantee schemes and other accounts payable. Net debt is defined as gross debt minus financial assets corresponding to debt instruments. For detailed debt definitions please see ‘Public Sector Debt Statistics: Guide for Compilers and Users: Guide for Compilers and Users’ (IMF).



However, the World Bank/the IMF may prefer to focus on those countries listed by the Heavily Indebted Poor Countries (HIPC) Initiative^{xxxix} - see Appendices 3 and 4. First started in 1996, the World Bank, the International Monetary Fund (IMF) and other multilateral, bilateral and commercial creditors designed this programme *'to ensure that the poorest countries in the world are not overwhelmed by unmanageable or unsustainable debt burdens. It reduces the debt of countries meeting strict criteria'*.^{xxxix} In Table 2, we show HIPCs by global region. The dominance of Africa is clear and the distribution of regions notably different to the ranking on GGD/GDP (Table 1). Note that only three HIPC members - Sudan, Mozambique and Zambia - are ranked in the top 30 by GGD/GDP.

| Region | Number of HIPCs |
|---------------|-----------------|
| Africa | 33 |
| Latin America | 5 |
| Asia | 1 |
| Europe | 0 |
| North America | 0 |
| Oceania | 0 |
| Total | 39 |

The United Nations Development Programme's (UNDP) publication 'Sovereign Debt Vulnerabilities in Developing Economies' identified '72 vulnerable countries... 19 of which are severely vulnerable'² This paper focused on debt vulnerability indicators across 120 developing (low- and middle-income) economies. These results were based on country-groupings including the group of countries eligible under the Debt-Service Suspension Initiative (DSSI) and Common Framework (CF). These could provide alternative country sets for the World Bank and IMF to consider. Interestingly, the report comments that debt distress and vulnerabilities are not isolated to the poorest (or DSSI- and CF-eligible) countries. If sovereign credit ratings are used for 105 developing economies, 'two-thirds of 73 emerging markets (EMs) are rated 'non-investment grade', as are all 32 low-income developing countries (LIDCs)'. The UNDP estimates that close to USD 1.1 trillion is due in debt service payments by developing and emerging countries in 2021 alone.

Identifying key beneficiaries

Deciding on the debt ranking could well prove easier than determining a sovereign state's climate and/or green credentials. We deliberately mention both 'climate' and 'green' as the World Bank President referred to 'climate' and 'green development' while the IMF's Managing Director made mention of the 'climate crisis' and 'green' debt. We expect definitions around these terms to become clearer prior to COP 26 later this year.

It is noteworthy that F4B identified 18³ countries facing both urgent debt sustainability and biodiversity issues.^{xxxiii} When these countries were ranked according to their debt sustainability (i.e., poorest on debt sustainability) and the need to take action to stem biodiversity loss the top contenders were Indonesia, Nigeria, Vietnam, Rwanda, Jamaica, Kenya, South Africa, Gambia and Sri Lanka.

We have examined this broad climate and environmental definition against two main measures. Firstly, we ranked countries against the Notre Dame Global Adaptation Index (ND GAIN).^{xxxiv}

² <https://www.undp.org/publications/sovereign-debt-vulnerabilities-developing-economies#modal-publication-download>

³ Angola, Costa Rica, Croatia, Ecuador, Fiji, Gabon, Gambia, Indonesia, Jamaica, Kenya, Kyrgyz Republic, Maldives, Nigeria, Rwanda, South Africa, Sri Lanka, Suriname and Vietnam



This index aims to summarise a country's vulnerability to climate change and other global challenges such as over-crowding, food insecurity and inadequate infrastructure, in combination with its readiness to improve resilience. It aims to help governments, businesses and communities better prioritise investments for a more efficient response to these global challenges.

In Table 3 we show the regions of the top 30 countries ranked on this basis. You will notice that 23 countries out of 30 are in Africa and that there are no countries in either Europe or North America. See Appendix 5 for the full list.

Table 3: Top 30 Countries with Lowest ND-GAIN Scores⁴ by Global Region.

| | |
|---------------|-----------|
| Africa | 23 |
| Asia | 5 |
| Latin America | 1 |
| Oceania | 1 |
| Europe | 0 |
| North America | 0 |
| Total | 30 |

HIPC countries have a lower (worse) ND GAIN score of 36.5 compared to the rest of the world (ROW) at 52.6. For reference, Norway has the highest (best) score in the world at 76.7 - see Figure 3.

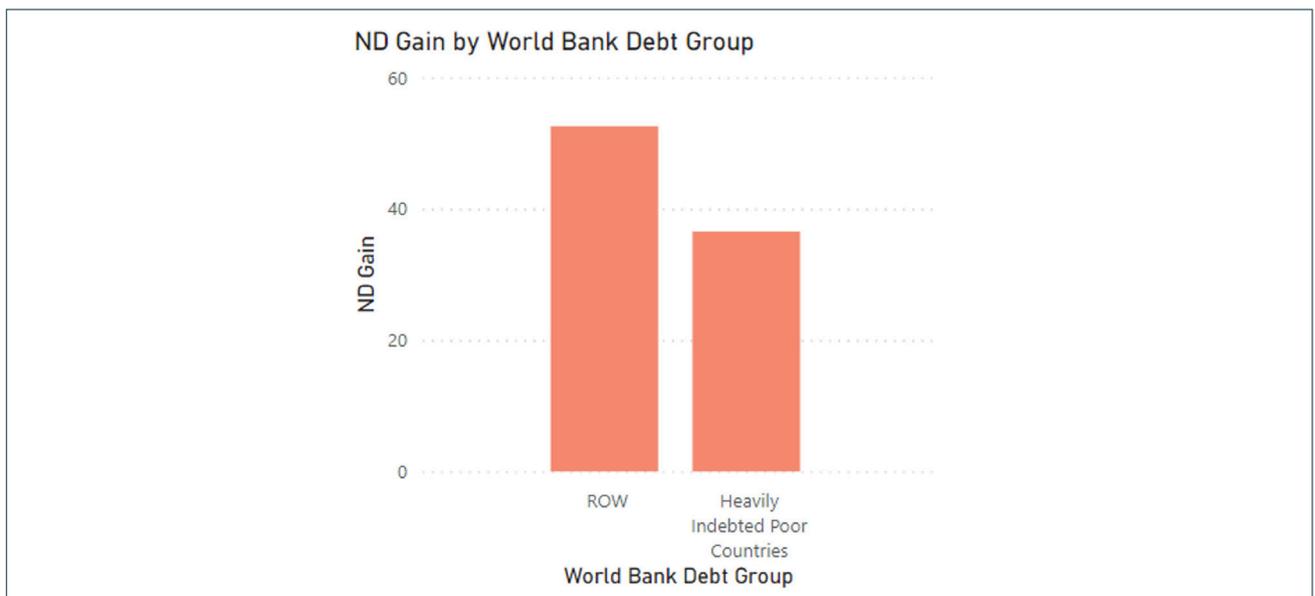


Figure 3: Comparison of the HIPCs and ROW Countries by ND-GAIN Index Average Score.

More relevant when examining candidates for green debt swaps, as suggested by the World Bank and the IMF, is to compare debt levels with poor (low) ND-GAIN scores. To reduce the size of this list, in Appendix 6 we aggregate the two metrics into one, giving them equal weight, and rank the top 10 HIPC countries. The resulting list contains only countries on the African continent, which so far appears to be a high priority region regardless of the methodology used.

But if we examine the structures of the earlier DFN swaps, then the focus of the donor countries could be on increasing the size of protected areas. We have examined this by ranking countries by the percentage of protected areas as a proportion of national territory. In Table 4 we show the top 30 countries ranked by lowest protected area by their global region. See Appendix 7 for the full list and the definition of 'protected areas' used.

⁴ Note the lower the ND GAIN Score the greater the country's vulnerability and exposure to threats identified in the index.



This ranking produces a very different list. Oceania and Latin America (including the Caribbean) rank as the highest priority, because they have a large number of small island states with a low proportion of their territorial waters covered by marine protected areas.

Table 4: Top 30 Countries with Lowest % of Protected Area by Global Region.

| | |
|---------------|-----------|
| Africa | 6 |
| Asia | 6 |
| Latin America | 9 |
| Oceania | 9 |
| Europe | 0 |
| North America | 0 |
| Total | 30 |

Interestingly, if we compare HIPCs with the ROW, we can see that the former as a whole have a slightly higher level of protected area - at 13.3% of their territory - than the ROW at 11.9% - see Figure 4.

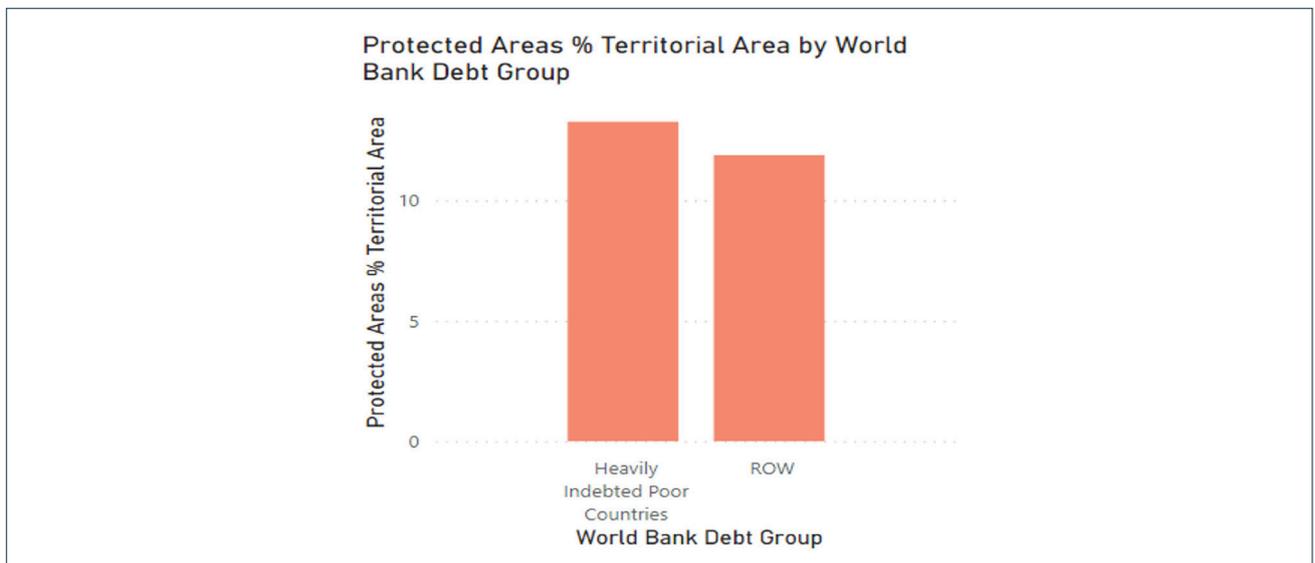


Figure 4: Comparison of HIPCS and ROW Countries by Protected Areas as % of Total Territory.

But, as mentioned above, we need to compare the area of the country classified as protected against high debt levels. In Table 5 we show the top 10 HIPC countries ranked by protected area and indebtedness. We aggregated the GGD/GDP % and Protected Areas % into one combined score. We did this by normalizing and then inverting GGD/GDP %, so that high GGD/GDP % results in a low GGD/GDP normalized score (0-100). We then sum this score with Protected Areas %, giving them equal weighting. A low score in this aggregate metric makes the country a higher priority for a green debt swap.

The resulting list only contains countries in the African continent. The list is not identical to Appendix 6, but it does show that, regardless of the methodology used, and because of its prominence in the HIPC group, the African continent should have high priority when determining which countries are most in need of green debt swaps.



Table 5: Top 10 HIPC Countries Ranked on GDD/GDP % & Protected Areas, Aggregate Score.

| Rank | Country |
|------|-----------------------|
| 1 | Sudan |
| 2 | Gambia |
| 3 | Sao Tome and Principe |
| 4 | Mozambique |
| 5 | Sierra Leone |
| 6 | Mauritania |
| 7 | Liberia |
| 8 | Ghana |
| 9 | Burundi |
| 10 | Guinea-Bissau |

The resulting list only contains countries in the African continent. The list is not identical to Appendix 6, but it does show that, regardless of the methodology used, and because of its prominence in the HIPC group, the African continent should have high priority when determining which countries are most in need of green debt swaps.

This focus on Africa is supported by a proposal from the Heinrich Böll Institute, Boston University and SOAS University of London - *'Debt relief for a Green and Inclusive Recovery'*.^{xxxv} This initiative calls for debt relief by public sector creditors *'to eligible heavily indebted countries with an unsustainable debt burden – analogous to, but improving upon, the HIPC Initiative model'*. Figure 5 demonstrates the trend in GGD as a percentage of GDP for the Sub-Saharan African countries.

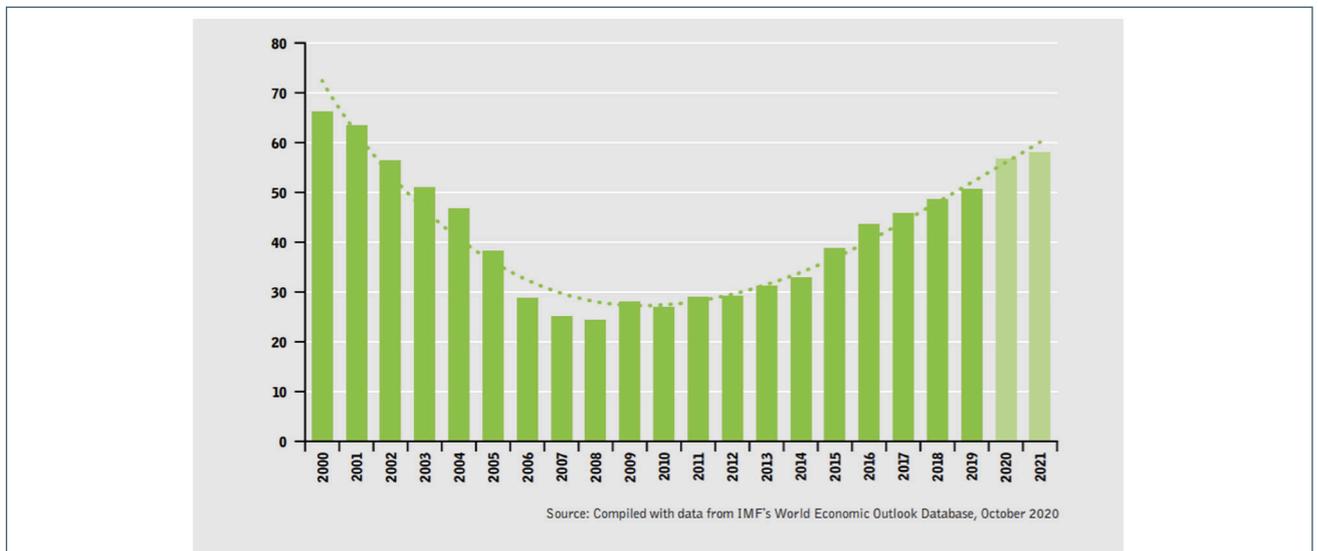


Figure 5: GGD of Sub-Saharan African Countries as % of GDP.
Source: *Debt Relief for a Green and Inclusive Recovery: A Proposal*.^{xxxvi}

In June 2021, the Heinrich Böll Institute, Boston University and SOAS University of London developed their proposal further.⁵ This report argues that *'the Common Framework urgently needs to be enhanced to allow for comprehensive debt relief that is oriented around a green, inclusive recovery'*. To achieve this it proposed some amendments to its earlier proposal. It argues that the G20 *'should encourage all low- and*

⁵ <https://eu.boell.org/en/2021/06/29/debt-relief-green-and-inclusive-recovery>



middle-income countries whose debt is considered unsustainable to participate in a debt restructuring. When examining these debt levels, climate and other sustainability risks should be assessed, including stranded asset risks, as well as estimates of a country's financing needs for climate change solutions and achieving the goals set out in the 2030 Agenda for Sustainable Development.

In addition, the report argues that governments receiving debt relief should commit to reforms that align their policies and budgets with Agenda 2030 and the Paris Agreement. Some portion of the restructured repayments could be channelled into a Fund for Green and Inclusive Recovery that could be used by the government for investment in SDG-aligned spending. Interestingly, it suggests that governments should be free to decide how to spend the money from this Fund, as long as it's assisting in a green and inclusive recovery and contributes to achieving the SDGs.

The updated report states the Framework needs to *'incorporate adequate incentives to ensure that private creditors participate and bear a fair share of the burden'*. The IMF is encouraged to make its programmes conditional on a restructuring process which includes private creditors. In these instances, Brady-type credit enhancements for new bonds could be swapped for old debt with a significant haircut which would facilitate debt relief negotiations with private creditors, using a Guarantee Facility for Green and Inclusive Recovery managed by the World Bank. If payments on these new bonds are missed, the collateral could be released to the benefit of private creditors, and the missed payments could be repaid by the sovereign to the Guarantee Facility.

Making it work

To convince the financial markets to adopt DFN swaps as a mainstream financial instrument both DFN successes and failures need to be assessed. Since their inception, debt-for-nature swaps have been applied in over 30 countries across all continents.^{xxxvii} From 1987 to 2015, the total value of debt restructured under debt-for-nature swap agreements was over USD 2.6 billion worldwide, resulting in about USD 1.2 billion of transfers to conservation projects.^{xxxviii}

The Protagonists

To make these swaps more widespread, four main players have a role to play:

The **debtor nations** need to determine whether their development plans can align with sustainable financial instruments and, if not, what needs to be adapted. The finance ministries and central banks of these countries should be contacting International Financial Institutions (IFIs) as well as their creditors. Some argue that the debtor nations, especially from emerging and developing countries, need to get into the driving seat.^{xxxix}

Clearly, **creditor countries** will also need to play their part. They should review their debt restructuring frameworks to incorporate issues such as environmental/green and nature/biodiversity objectives. Developed countries have choices which include foregoing payments to offering agreements which finance an environmental or conservation programme. They can also invest in the research required to embed sustainability risks into fiscal and monetary policy rules globally, sharing this through other institutions.

But it is not just governments which should facilitate this change. The **private sector** has an important part to play. Presently, there are well documented inflows into sustainable products, so investors can play a systemic role in responding to and moving this agenda. When investors are unprepared to do it alone, blended finance options may be possible.



Finally, as we have discussed in this paper, the international financial institutions (IFIs) continue to push the agenda on this topic. The IFIs have already provided leadership in sustainable finance, funding different types of products such as blue bonds.^{xi} (Please see Appendix 8). IFIs are able to work with governments and investors to identify and deploy innovative instruments or reboot the process. They can also be important providers of technical assistance to countries to align their policies, identifying and eliminating perverse incentives and shifting available public finance in the direction of the chosen funding mechanisms, all of which can act as an encouragement private capital flows as well. As we have discussed above, the World Bank and the IMF look set to repeat this for debt swaps.

Once stakeholders agree to a debt for nature swap, key factors for success include:

- Alignment of environmental/climate goals with economic goals
- Solid strategic and financial planning
- Active governmental support
- Buy-in from local communities
- Management of inflation and exchange rates.^{xii}

Please also see Appendix 1.

The next steps

The IMF intends to have a plan in place for green debt swaps by COP26 in November. To date, there are no publicly available details as to what this 'plan' will contain.

As we have demonstrated, deciding which countries should be in line for green debt swaps will hinge on definitions and frameworks. However, a number of African countries are likely to top the list.

We are encouraged by these discussions which will bring prominence to acceptable green and environmental financial instruments. If international financial organisations and sovereigns align, this gives a real chance for these financial instruments to be repeated at the multilateral development bank level, allowing the green finance market to further develop. In turn this will encourage private investors.

We remain hopeful that this dialogue will increase the financial market's attention on the importance of a country's natural capital, which will likely receive added impetus from the Convention of Biological Diversity (CBD) COP 15 in October.

We call on the financial markets to seize this opportunity and demonstrate that it truly values natural capital. Professor Dasgupta in 'The Economics of Biodiversity' summed up the importance of getting this right when he stated, "Our economies, livelihoods and well-being all depend on our most precious asset: Nature".^{xiii}



Appendix 1

Strengths and Weaknesses of Debt-for-Nature Swaps ^{xliii}

| Strengths | Weaknesses |
|---|--|
| <ul style="list-style-type: none">● Reduces the debt, especially official bilateral debt, of developing countries; debt repayment burden eased because payment is in more readily-available local currency instead of foreign currency● Improves debtor country's credit standing, allowing for greater access to credit markets● Significant local currency funds for conservation can be generated● The transfer of financial resources from industrialized to developing countries recognizes global values of biodiversity and natural areas, compensating for the costs incurred at the local and national levels● Can attract additional investment in a debtor country● Stimulates the creation of environmental trust funds to disperse DFN proceeds, which can serve as long-term funding mechanisms and can attract other investments● Money that would have been used to service the debt can be directed to other priority sectors● Helps counteract debt-servicing pressures to exploit natural resources● Can promote participation by civil society, particularly when proceeds are channelled to a private trust fund● Flexible in scope (e.g., the DFN concept could be extended to cover debt-for-indigenous territory swaps in which national governments agree to restore and protect indigenous land rights, and indigenous groups agree to protect such lands, in return for debt reductions). | <ul style="list-style-type: none">● Perception among some that environmental conditions imposed by DFN interfere with debtor country sovereignty● Time consuming and labour intensive; transaction costs can be high● For commercial debt swaps, transaction costs (between 1.5% to 5% of the debt's face value) are typically charged by specialized bank agent or financial company that accesses the debt on the secondary market● Negligible overall debt relief for a country● Usually, no new infusion of financial resources; rather, a redistribution of existing ones● Tendency to increase the price of the remaining debt● Risks exist that developing country debtor will not meet its obligations to repay in local currency; few effective risk mitigation or legal recourse options● Increased "moral hazard" for future lending (debtors will enter future loan agreements assuming some debt repayments will be forgiven / highly discounted)● Unstable currency can devalue local currency gains that have been invested domestically; high inflationary risks can nullify any expected leverage gains unless counterpart funds are invested in an inflation-adjusted high-interest or hard-currency denominated fund. |



Appendix 2

| Appendix 2: Top 30 Countries Ranked on GDD/GDP(%). ^{xliv} (ND-GAIN score & Protected Areas as % of Total Territorial area are included in the table). | | | | |
|---|---------------------------------|----------|------------------------------------|--------------------------------|
| Country | World Bank Debt Group | ND- GAIN | Protected Areas % Territorial Area | Government Gross Debt/ GDP (%) |
| Japan | ROW | 68 | 10 | 235 |
| Venezuela | ROW | 40 | 37 | 233 |
| Sudan | Heavily Indebted Poor Countries | 32 | 3 | 200 |
| Greece | ROW | 59 | 11 | 185 |
| Lebanon | ROW | 44 | 1 | 174 |
| Italy | ROW | 60 | 13 | 135 |
| Singapore | ROW | 71 | 2 | 129 |
| Barbados | ROW | 56 | 0 | 127 |
| Cape Verde | ROW | 50 | 0 | 125 |
| Portugal | ROW | 63 | 17 | 117 |
| Zimbabwe | ROW | 33 | 27 | 112 |
| United States of America | ROW | 67 | 26 | 108 |
| Angola | ROW | 37 | 5 | 107 |
| Bhutan | ROW | 48 | 48 | 107 |
| Mozambique | Heavily Indebted Poor Countries | 37 | 13 | 103 |
| Bahrain | ROW | 51 | 2 | 102 |
| France | ROW | 68 | 33 | 98 |
| Belize | ROW | 43 | 21 | 98 |
| Spain | ROW | 62 | 15 | 96 |
| Zambia | Heavily Indebted Poor Countries | 40 | 38 | 94 |
| Jamaica | ROW | 49 | 1 | 94 |
| Cyprus | ROW | 58 | 2 | 94 |
| Suriname | ROW | 47 | 8 | 93 |
| Dominica | ROW | 55 | 1 | 91 |
| Argentina | ROW | 49 | 7 | 90 |
| Brazil | ROW | 47 | 29 | 88 |
| Canada | ROW | 68 | 6 | 87 |
| Sri Lanka | ROW | 46 | 3 | 87 |
| Pakistan | ROW | 38 | 10 | 86 |
| United Kingdom | ROW | 70 | 29 | 85 |



Appendix 3

Appendix 3: List of Heavily Indebted Poor Countries (HIPC).^{xlv}

| | | |
|--------------------------|---------------|-----------------------|
| AFGHANISTAN | ETHIOPIA | MOZAMBIQUE |
| BENIN | GAMBIA, THE | NICARAGUA |
| BOLIVIA | GHANA | NIGER |
| BURKINA FASO | GUINEA | RWANDA |
| BURUNDI | GUINEA-BISSAU | SAO TOME AND PRINCIPE |
| CAMEROON | GUYANA | SENEGAL |
| CENTRAL AFRICAN REPUBLIC | HAITI | SIERRA LEONE |
| CHAD | HONDURAS | SOMALIA |
| COMOROS | LIBERIA | SUDAN |
| CONGO | MADAGASCAR | TANZANIA |
| COTE D'IVOIRE | MALAWI | TOGO |
| DRC | MALI | UGANDA |
| ERITREA | MAURITANIA | ZAMBIA |



Appendix 4

*Appendix 4: Top 10 HIPC Countries Ranked on GDD/GDP %.^{xlvi}
(ND-GAIN & Protected Areas as % of Total Territorial area are included in the table).*

| Country | World Bank Debt Group | ND- GAIN | Protected Areas % Territorial Area | Government Gross Debt/ GDP (%) |
|-----------------------|---------------------------------|----------|------------------------------------|--------------------------------|
| Sudan | Heavily Indebted Poor Countries | 32 | 2.75 | 200 |
| Mozambique | Heavily Indebted Poor Countries | 37 | 13.45 | 103 |
| Zambia | Heavily Indebted Poor Countries | 40 | 37.87 | 94 |
| Congo | Heavily Indebted Poor Countries | 36 | 36.84 | 83 |
| Gambia | Heavily Indebted Poor Countries | 39 | 1.37 | 80 |
| Sao Tome and Principe | Heavily Indebted Poor Countries | 39 | 0.24 | 73 |
| Sierra Leone | Heavily Indebted Poor Countries | 38 | 3.30 | 72 |
| Guinea-Bissau | Heavily Indebted Poor Countries | 32 | 11.62 | 67 |
| Senegal | Heavily Indebted Poor Countries | 41 | 14.58 | 65 |
| Ghana | Heavily Indebted Poor Countries | 44 | 7.79 | 64 |



Appendix 5

Appendix 5: Top 30 Countries Ranked on ND-GAIN score.
(GDD/GDP% & Protected Areas as % of Total Territorial area are included in the table).

| Country | World Bank Debt Group | ND- GAIN | Protected Areas % Territorial Area | Government Gross Debt/ GDP (%) |
|--------------------------|---------------------------------|----------|------------------------------------|--------------------------------|
| Chad | Heavily Indebted Poor Countries | 27 | 20.35 | 44 |
| Central African Republic | Heavily Indebted Poor Countries | 28 | 18.06 | 47 |
| Somalia | Heavily Indebted Poor Countries | 28 | | |
| DRC | Heavily Indebted Poor Countries | 31 | 13.76 | 16 |
| Afghanistan | Heavily Indebted Poor Countries | 31 | 0.10 | 6 |
| Guinea-Bissau | Heavily Indebted Poor Countries | 32 | 11.62 | 67 |
| Sudan | Heavily Indebted Poor Countries | 32 | 2.75 | 200 |
| Niger | Heavily Indebted Poor Countries | 33 | 17.32 | 40 |
| Zimbabwe | ROW | 33 | 27.21 | 112 |
| Liberia | Heavily Indebted Poor Countries | 33 | 1.21 | 55 |
| Mali | Heavily Indebted Poor Countries | 34 | 8.23 | 40 |
| Burundi | Heavily Indebted Poor Countries | 34 | 7.59 | 60 |
| Yemen | ROW | 35 | 0.61 | 77 |
| Haiti | Heavily Indebted Poor Countries | 35 | 0.35 | 30 |
| Uganda | Heavily Indebted Poor Countries | 35 | 16.06 | 37 |
| Malawi | Heavily Indebted Poor Countries | 35 | 22.88 | 59 |
| Madagascar | Heavily Indebted Poor Countries | 35 | 2.35 | 38 |
| Congo | Heavily Indebted Poor Countries | 36 | 36.84 | 83 |
| Bangladesh | ROW | 36 | 4.89 | 36 |
| Nigeria | ROW | 36 | 11.61 | 2 |
| Myanmar | ROW | 36 | 4.62 | 39 |
| Burkina Faso | Heavily Indebted Poor Countries | 36 | 14.92 | 43 |
| Micronesia | ROW | 37 | 0.02 | 17 |
| Ethiopia | Heavily Indebted Poor Countries | 37 | 18.47 | 58 |
| Comoros | Heavily Indebted Poor Countries | 37 | 0.13 | 25 |
| Angola | ROW | 37 | 5.00 | 107 |
| Mozambique | Heavily Indebted Poor Countries | 37 | 13.45 | 103 |
| Kenya | ROW | 38 | 10.51 | 62 |
| Pakistan | ROW | 38 | 9.79 | 86 |
| Sierra Leone | Heavily Indebted Poor Countries | 38 | 3.30 | 72 |



Appendix 6

Appendix 6: Top 10 HIPC Countries Ranked on GDD/GDP % & ND-GAIN Aggregated Score.^{xlvii}

| Rank | Country |
|------|--------------------------|
| 1 | Sudan |
| 2 | Mozambique |
| 3 | Zambia |
| 4 | Congo |
| 5 | Guinea-Bissau |
| 6 | Gambia |
| 7 | Sierra Leone |
| 8 | Central African Republic |
| 9 | Sao Tome and Principe |
| 10 | Chad |

We aggregated GGD/GDP % and ND-GAIN into one combined score. We do this by normalising and then inverting GGD% (so that high GGD/GDP % results in a low GGD normalized score (0-100)). We then sum this score to the ND-GAIN score (giving them equal weighting). A low score in this aggregate metric makes the country a higher priority for a green debt swap.



Appendix 7

*Appendix 7: Top 30 Countries Ranked by Protected Areas as % of Total Territorial Area.^{xlviii}
(GDD/GDP % & ND-GAIN are also included in the table).*

| Country | World Bank Debt Group | ND- GAIN | Protected Areas % Territorial Area | Government Gross Debt/ GDP (%) |
|------------------------------|---------------------------------|----------|------------------------------------|--------------------------------|
| Bermuda | ROW | | 0.00 | |
| French Polynesia | ROW | | 0.01 | |
| Tuvalu | ROW | | 0.01 | |
| Barbados | ROW | 56 | 0.01 | 127 |
| Mauritius | ROW | 56 | 0.01 | 83 |
| Cape Verde | ROW | 50 | 0.02 | 125 |
| Micronesia | ROW | 37 | 0.02 | 17 |
| Seychelles | ROW | 49 | 0.05 | 58 |
| Maldives | ROW | 44 | 0.05 | 78 |
| Guam | ROW | | 0.07 | |
| Vanuatu | ROW | 40 | 0.09 | 45 |
| Afghanistan | Heavily Indebted Poor Countries | 31 | 0.10 | 6 |
| Comoros | Heavily Indebted Poor Countries | 37 | 0.13 | 25 |
| Solomon Islands | ROW | 42 | 0.16 | 8 |
| Turkey | ROW | 53 | 0.19 | 33 |
| Grenada | ROW | 58 | 0.22 | 60 |
| Samoa | ROW | 47 | 0.24 | 47 |
| Sao Tome and Principe | Heavily Indebted Poor Countries | 39 | 0.24 | 73 |
| Saint Kitts and Nevis | ROW | 55 | 0.25 | 56 |
| Antigua and Barbuda | ROW | 48 | 0.26 | 82 |
| Libya | ROW | 39 | 0.29 | |
| Haiti | Heavily Indebted Poor Countries | 35 | 0.35 | 30 |
| Saint Vincent and Grenadines | ROW | | 0.47 | 75 |
| Yemen | ROW | 35 | 0.61 | 77 |
| Papua New Guinea | ROW | 38 | 0.66 | 40 |
| Syria | ROW | 38 | 0.66 | 107 |
| Dominica | ROW | 55 | 0.67 | 91 |
| Saint Lucia | ROW | 54 | 0.93 | 61 |
| Fiji | ROW | 50 | 0.99 | 49 |
| Oman | ROW | 54 | 1.02 | 60 |



The definition of “Protected Areas” used by the World Bank to compile this dataset:

| World Bank Indicator Name | Definition | Original Source |
|--|---|--|
| Terrestrial and marine protected areas (% of total territorial area) | Terrestrial protected areas are totally or partially protected areas of at least 1,000 hectares that are designated by national authorities as scientific reserves with limited public access, national parks, natural monuments, nature reserves or wildlife sanctuaries, protected landscapes, and areas managed mainly for sustainable use. Marine protected areas are areas of intertidal or subtidal terrain--and overlying water and associated flora and fauna and historical and cultural features--that have been reserved by law or other effective means to protect part or all of the enclosed environment. Sites protected under local or provincial law are excluded. | World Database on Protected Areas (WDPA) where the compilation and management is carried out by United Nations Environment World Conservation Monitoring Centre (UNEP-WCMC) in collaboration with governments, non-governmental organizations, academia and industry. The data is available online through the Protected Planet website (https://www.protectedplanet.net/). |



Appendix 8

The Seychelles DFN Swap and Blue Bond

In March 2016, the Government of Seychelles undertook the world's first **Blue Economy debt for nature swap**. Benefits from the debt for nature swap included:

- Financing for adaptation to climate change through management of coasts, coral reefs and mangroves
- Promoting implementation of a Marine Spatial Plan (MSP) for the entire Seychelles EEZ - approximately 400,000 km² managed for conservation as MPAs within five years
- Implementing the MSP, setting ground rules for what is permitted and where within Seychelles

TNC created the Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) to raise grant and loan capital for the debt conversion and, in exchange, the Seychelles government committed to improved policies and increased investment around marine conservation and climate adaptation. The trust extended a specific-purpose loan to the Seychelles government to purchase USD 21.6M of its sovereign debt at a discount.

The debt conversion effectively redirects the Seychelles' debt payments from official creditors to the newly created local trust, and restructures debt payments to more favourable terms (i.e., longer term and partial conversion to local currency). The trust uses the Seychelles' debt payments to repay the initial capital raised and fund ongoing marine conservation and climate adaptation programming. The debt conversion is also expected to contribute to the creation of the Indian Ocean's second largest marine reserve.

The DFN swap converted USD 21.6 million of national debt. The Republic of Seychelles bought back USD 21.4 million of its external public debt at a 6.5% discount with USD 20.2 million funds provided to the Seychelles' Conservation and Climate Adaptation Trust (SeyCCAT) by philanthropic grants (USD 5 million) and a loan from NatureVest - the conservation investing unit of The Nature Conservancy (TNC) - 15.2m loan at 3%. Seychelles then repays the USD 21.4 million debt to SeyCCAT, with matching payments through to NatureVest for USD 15 million loan. The Seychelles' remaining debt servicing payments on USD 6.4 million loan remain with SeyCCAT for the Blue Grants Fund (BGF) and the Blue Endowments Fund (BEF).

In October 2018, the Republic of Seychelles launched the world's first **sovereign blue bond**,^{xlix} a financial instrument designed to support sustainable marine and fisheries projects.

The bond, raised USD 15 million from international investors with the World Bank assisting in the developing of the blue bond and approaching investors (Calvert Impact Capital, Nuveen, Prudential Financial, Inc.).

The deal was supported by the World Bank and the Global Environment Facility, with the former providing a USD 5 million grant to guarantee the bond, and the latter a USD 5 million loan to subsidise payment of the bond coupons that will be redeemed in three equal instalments of USD 5 million in 2026, 2027 and 2028.

The 10-year issuance has a coupon of 6.5% though credit enhancement means the coupon payable by the government of the Seychelles is reduced to 2.8%.

The proceeds will finance the sustainable transition of small-scale fisheries (the Mahé Plateau Demersal Fisheries Management), including the rebuilding of fish stocks, harvest control and complement marine projects. Furthermore, it provides additional funding for the continued development of Seychelles Exclusive Economic Zone (EEZ) marine spatial plan, the World Bank South-West Indian Ocean Fisheries Governance and Shared Growth Program (SWIOFish 3) project, and the allocation of 30 percent of marine protected areas for Debt Swap for Conservation and Climate Adaptation.^l

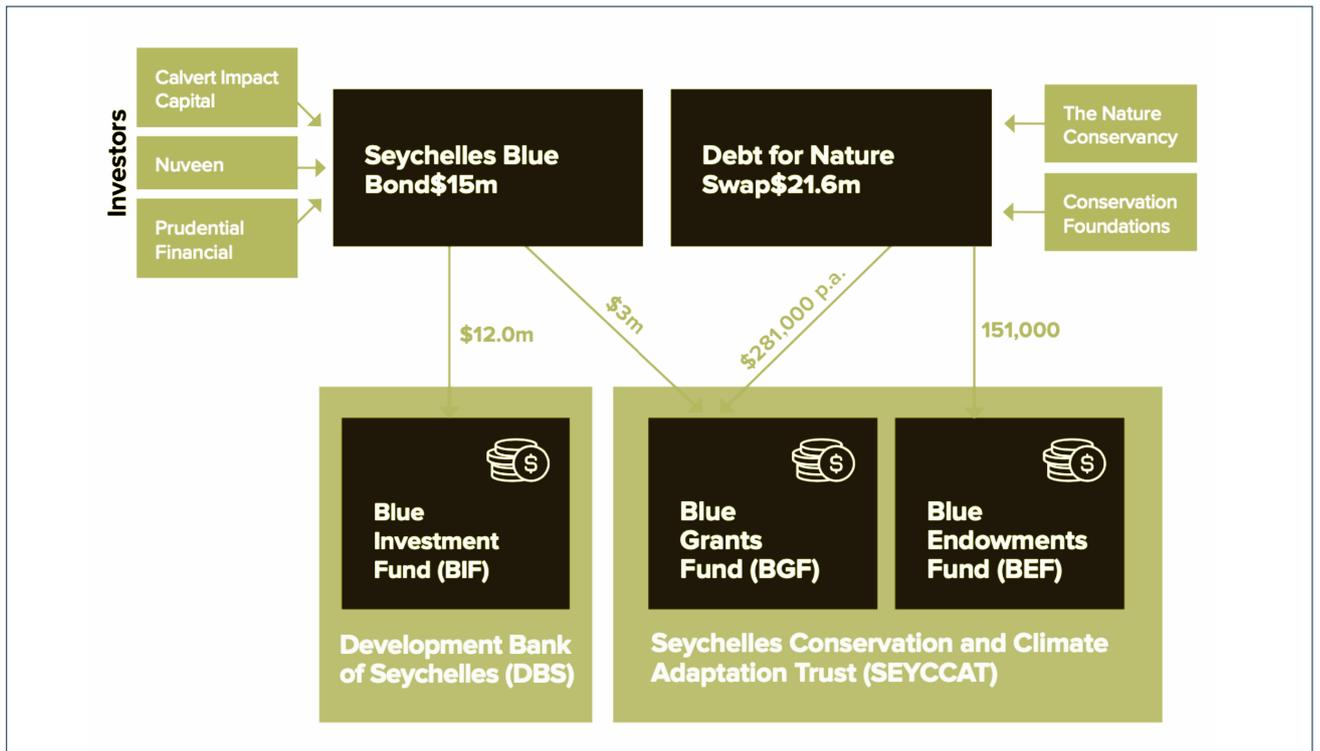


Figure 6: The Seychelles DFN Swap and Blue Bond.
Source: Caribbean Maritime University – Centre for Blue Economy and Innovation



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