

Debt-For-Nature Swaps: A Triple-Win Solution for Debt Sustainability and Biodiversity Finance in the Belt and Road Initiative (BRI)?

Mengdi YUE

Dr. Christoph NEDOPIIL WANG

IIGF Green BRI Center

Beijing, January 2021

This brief is produced by the IIGF Green Belt and Road Initiative Center (IIGF Green BRI Center) of the International Institute of Green Finance (IIGF) at the Central University of Finance and Economics (CUFE) in Beijing. The brief aims to provide a vehicle for publishing preliminary results on topics related to the Belt and Road Initiative (BRI) to encourage discussion and debate. The findings, interpretations, and conclusions expressed in this paper are entirely those of the author(s) and should not be attributed in any manner to the IIGF, to its affiliated organizations, or to members of its Board of Executive Directors. Citation and the use of material presented in this brief should take into account this provisional character.

For information regarding Green BRI Center Briefs, please contact the Director Dr. Christoph Nedopil Wang.

Please quote as:

Yue, Mengdi and Nedopil Wang, Christoph (January 2021): “Debt-For-Nature Swaps: A Triple-Win Solution for Debt Sustainability and Biodiversity Finance in the Belt and Road Initiative (BRI)?”, Green BRI Center, International Institute of Green Finance (IIGF), Beijing.

© 2021 IIGF Green BRI Center / International Institute of Green Finance

All rights reserved

Debt-For-Nature Swaps: A Triple-Win Solution for Debt Sustainability and Biodiversity Finance in the Belt and Road Initiative (BRI)?

Highlights

- ▶ As debt sustainability challenges in the Belt and Road Initiative (BRI) countries continue to mount, we argue that debt-for-nature swaps (instead of debt-for-resources and debt-for-equity swaps) are an important tool to facilitate the restructuring of current debt and also support green recovery and development.
- ▶ The concept of debt-for-nature swaps was first introduced in 1984 in response to the deteriorating tropical rain forests and mounting debt obligations in Latin America. Through a debt-for-nature swap, the debtor country's debt stock was reduced in exchange for commitments of the debtor government to protect nature in varying forms.
- ▶ In the past, most debt-for-nature swaps were performed in Latin American countries, such as El Salvador, Columbia, Jamaica, Peru, and Chile, and African countries such as Costa Rica and Egypt. Major participating creditor countries include the Paris Club members, especially the US and Germany.
- ▶ Debt-for-nature swaps are complex in their implementation due to a number of reasons: high transaction cost; requirements for long-term financial commitments; possibility of inflation or local currency devaluation in the debtor country; challenges in the design and implementation of conservation projects.
- ▶ The opportunities for debt-for-nature swaps in the BRI have possibly never been greater: on the one hand, many of the BRI countries are nature-rich, while they are increasingly dealing with biodiversity risks. At the same time, China's role as a lender has increased in these countries – with many countries requiring debt restructuring after over-investments and underperformance paired with an economic shock in the COVID-19 pandemic.
- ▶ We propose **seven recommendations** for Chinese policymakers to facilitate debt-for-nature swaps in the BRI:
 1. set up a policy-making agency in charge of the debt-for-nature swaps pipeline,
 2. design a comprehensive bilateral debt conversion program ,
 3. develop debt-for-nature swap agreements in line with the debtor country's conservation goals,
 4. leverage co-financing in debt-for-nature swaps,
 5. engage with other stakeholders for capacity building and international coordination,
 6. identify the important role of debt-for-nature swaps in China's green BRI strategy,
 7. improve the debt sustainability of BRI countries through stricter requirements for future projects.

Table of Contents

Executive Summary	5
1. Introduction: The Case of Seychelles	6
2. Understanding Debt-for-nature Swaps.....	6
2.1 Types of debt-for-nature swaps	7
2.2 Evolution and Recent Trends of Debt-for-Nature Swaps	8
<i>Case Study: The 2009 US-Indonesian Debt-for-nature Swap.....</i>	<i>11</i>
2.3 Challenges of Implementing Debt-for-nature Swaps	12
3. The Relevance of Debt-for-nature Swaps for China in the BRI	12
3.1 Biodiversity in the BRI.....	13
3.2 Debt in the BRI.....	14
3.3 China’s Experience in Biodiversity Protection at Home and Abroad	15
4. Policy Recommendations.....	16
References.....	18
About the Authors.....	20
About the IIGF Green BRI Center.....	20
About the International Institute of Green Finance (IIGF)	20

Executive Summary

The outbreak of COVID-19 has accelerated many debt issues in Belt and Road Initiative (BRI) countries. In our previous [brief](#) on the debt issue in 52 selected BRI countries, we analyzed both the reasons for the pressing debt sustainability issues and the countries that are particularly vulnerable to debt issues with a focus on debt service to China. Among several solutions, we found that debt-for-nature swaps are an important tool to facilitate the restructuring of current debt and also support green recovery and development.

In this brief, we will therefore analyze the possibilities of applying debt-for-nature swaps in the Belt and Road Initiative, by explaining the concept, looking at successful cases of debt-for-nature swaps as well as analyzing the applicability of debt-for-nature swaps in the selected countries.

While China has already forgiven some interest-free debt in BRI countries, this only constitutes a minor proportion of China's total debt in the BRI. Interest-free debt would also not be as applicable to debt-for-nature-swaps. Rather, debt-for-nature swaps can and should be applied to Chinese debt that carries interest – for two simple reasons: first, by reducing interest payments to China, the highly-indebted countries can free up resources for domestic investments for recovery; second, debt-for-nature swaps are mostly dependent on the continued payment of (reduced) interest to continually invest domestically in environmental protection.

Accordingly, debt-for-nature swaps are not debt-forgiveness which carries moral hazards, but provide for a win-win-win solution: first, creditors, such as China, receive back some parts of the original debt; second, debtor countries have flipped their debt-payments into regulated

domestic “investments” in environmental protection – thus are still liable to “service” the original debt-for-nature swap; and finally, natural protection is improved as the most important basis for human and natural development.

So far, China has no prior experience in applying debt-for-nature swaps. Yet, as we argue, debt-for-nature swaps are an important tool for China to consider to underline its green development promises, its promises for supporting emerging countries in green recovery and they would lend China credibility in the run-up of the 2021 UN Biodiversity Conference of the Parties (CDB COP) to be held in Kunming, China. At the same time, applying debt-for-nature swaps would add green value to some of China's loans, which might otherwise never be repaid, and provide an opportunity for China to take the lead in leveraging public and private funding for biodiversity conservation. For indebted countries, debt-for-nature swaps could alleviate the burden of repaying loans in foreign exchange, source funding for the environment and climate projects, as well as contribute to local economy and institutional capacity building if well designed. For conservation NGOs, debt-for-nature swaps help them identify and leverage funding from diverse sources¹.

¹ Paul Steele and Sejal Patel, “Tackling the Triple Crisis. Using Debt Swaps to Address Debt, Climate and Nature Loss Post-COVID-19,” September 2020, <https://pubs.iied.org/16674IIED/?c=biodiv>.

1. Introduction: The Case of Seychelles

The Republic of Seychelles defaulted on its debt in 2008. But rather than using debt-for-equity or debt-for-resources swaps, debt-for-nature swaps proved to be much more relevant to Seychelles, the international community, and the global good of biodiversity and ecosystems. This case might provide some inspiration to apply debt-for-nature swaps also in the BRI.

Seychelles is an archipelago of 115 islands in the Western Indian Ocean. It is home to precious coral reefs and endangered species and most of its economy is dependent on marine tourism and fishing. Despite some successful reforms and recovery from its sovereign debt default in 2008², Seychelles continued to be vulnerable to external economic shocks, while its marine ecosystem continued to deteriorate³.

In 2016, the Nature Conservancy (TNC), a US-based environmental group, initiated a “debt-for-nature swap” deal that restructured Seychelles’ sovereign debt of US\$21.6 million owed to Paris Club members (mostly the UK, France, Belgium, and Italy) in exchange for its commitments to protecting the ocean. Led by TNC, Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) was established, which bought the debt from the creditor countries at a discount. The government of Seychelles agreed to do three things accordingly: 1) pay back loans to SeyCCAT at a lower interest rate; 2) spend the savings on ocean conservation work; 3) designate 30% of its marine area as protected, free from unregulated

economic activities such as fishing and drilling.⁴ The results turned out promising: By March 2020, Seychelles had made every debt-related payment on time and completed the protection of 32% of its waters.

The successful application of debt-for-nature swaps in Seychelles is based on a concept that was coined and tried in the 1980s. Indeed, since its inception, debt-for-nature swaps have been viewed as a way to free up funds for the environment while reducing the debt burden of the borrowers.

This article proposes debt-for-nature swaps as a win-win-win solution for the problems of debt distress and the lack of biodiversity finance particularly in BRI countries. It starts with an overview of debt-for-nature swaps as a debt conversion instrument, presents the current status of biodiversity financing, and discusses the obstacles and recommendations for applying debt-for-nature swaps in BRI countries.

2. Understanding Debt-for-nature Swaps

The concept of debt-for-nature swaps was first introduced by Thomas Lovejoy, vice president of the World Wildlife Fund, in 1984 in response to the deteriorating tropical rain forests and mounting debt obligations in developing countries, especially in Latin America⁵. Through a debt-for-nature swap, the debtor country’s debt stock was reduced in exchange for commitments of the debtor government to protect nature in

² “Seychelles Systematic Country Diagnostic” (World Bank, June 23, 2017), <http://documents1.worldbank.org/curated/en/191181499447495374/pdf/Seychelles-SCD-FINAL-23Jun17-06282017.pdf>.

³ Isabelle Gerretsen, “The Deal That Saved Seychelles’ Troubled Waters,” BBC Future, August 3, 2020, <https://www.bbc.com/future/article/20200803-the-deal-that-saved-seychelles-troubled-waters>.

⁴ Saqib Rahim, “How Investors Are Coming up with the Green to Save the Ocean Blue,” *Washington Post*, October 28, 2020, <https://www.washingtonpost.com/climate-solutions/2020/10/28/climate-solutions-ocean-conservation/>.

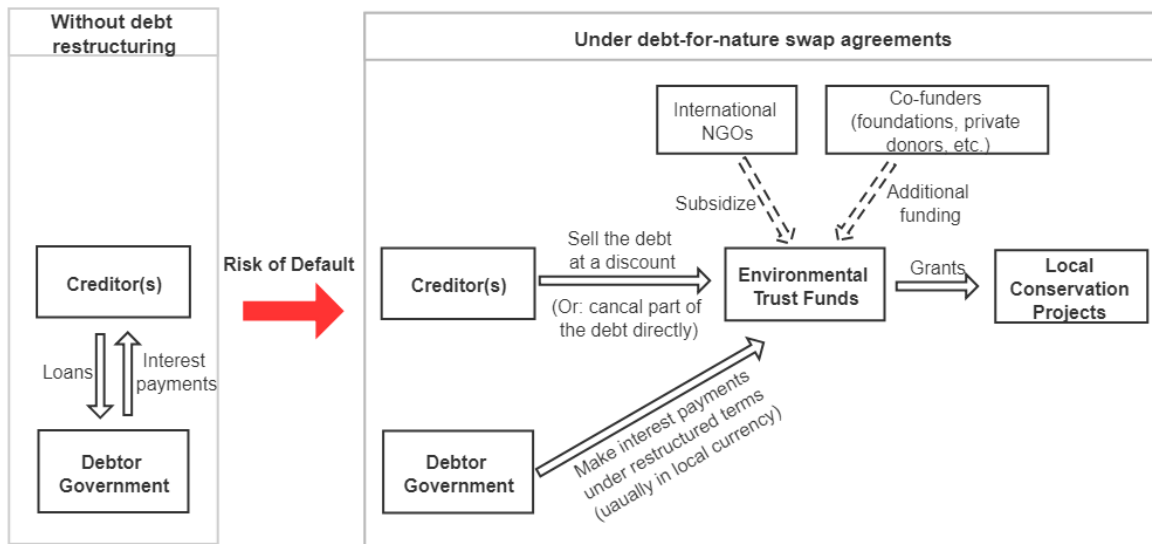
⁵ Pervaze A Sheikh, “Debt-for-Nature Initiatives and the Tropical Forest Conservation Act: Status and Implementation,” n.d., 21.

varying forms⁶. The first debt-for-nature agreement was signed in 1987 between Bolivia and Conservation International (CI), a US nonprofit environmental organization. In that agreement, CI purchased USD 650,000 of Bolivia's foreign debt in the secondary market at a discounted price of USD 100,000. In exchange, the Bolivian government set aside 3.7 million acres in three conservation areas as buffer zones.⁷

Figure 1 shows the concept of a debt-for-nature swap. When the original creditor-debtor government relationship based on loans and

interest payments is under distress due to a risk of default, negotiations can lead to a debt-for nature swap. Creditors sell the outstanding debt (or parts thereof) at a discount up to 100% to an environmental trust fund. The trust fund itself is funded by international NGOs, donor countries etc. to be able to buy the debt. The debtor government – rather than paying interest to the creditor pays (reduced) interests – possibly in local currency – to the environmental trust fund. With this revenue, the trust fund invests in and maintains local conservation projects.

Figure 1 An Illustration of Debt-for-nature Swaps



"An Illustration of Debt-for-nature Swaps". IIGF Green BRI Center (2021). www.green-bri.org

2.1 Types of debt-for-nature swaps

Debt-for-nature swaps generally fall into two types: commercial debt-for-nature swaps and bilateral debt-for-nature swaps.

Commercial debt-for-nature swaps

The first debt-for-nature swap in Bolivia, together with most of those designed during the 1980s and 1990s debt crises in Latin America, were

commercial (or private) debt-for-nature swaps⁸. In commercial debt-for-nature swaps, debtor government debt that is traded on markets (e.g., through government bonds) is being restructured. In such swaps, a third-party organization (usually NGO, also government and individuals) purchases the commercial debt of a developing country in the secondary market at a discount price that reflects the market's expectation on the possibility

⁶ "Debt for Nature Swaps," UNDP, accessed October 29, 2020, <https://www.sdfinance.undp.org/content/sdfinance/en/home/solutions/debt-for-nature-swaps.html#mst-1>.

⁷ Philip Shabecoff, "Bolivia to Protect Lands in Swap for Lower Debt (Published 1987)," *The New York Times*, July 14, 1987, sec.

Science, <https://www.nytimes.com/1987/07/14/science/bolivia-to-protect-lands-in-swap-for-lower-debt.html>.

⁸ "Debt for Nature Swaps."

of repayment. In exchange, the debtor country commits to invest the full face-value in local currency in conservation projects. Accordingly, the success of commercial debt-for-nature swaps depends on the agreement on the discount rate on the outstanding debt: the higher the discount rate, the more debt can be restructured.

The commercial debt-for-nature swaps have been more popular in the 1980s. Due to the overall improved debt position of developing countries after several debt crises in the 1980s and 1990s and the subsequent debt relief efforts under initiatives like Heavily Indebted Poor Country (HIPC)⁹, the application of commercial debt-for-nature swaps has been in decline since the mid-1990s.

Public debt-for-nature swaps

The other category of debt-for-nature swaps is **public (or bilateral)** debt-for-nature swap. In a public debt-for-nature swap, the debt to be restructured is not traded on public markets. Instead, it is the bilateral debt between the debtor and creditor governments (or alternatively, between the debtor government and a development bank).

In public debt-for-nature swaps, the creditor government agrees to forgive a portion of the public bilateral debt with the debtor country in exchange for the latter's financial contribution to conservation efforts. Sometimes an NGO provides additional resources to the debt-reduction commitment from the creditor, making it a subsidized debt swap¹⁰, such as the Seychelles case described in the introduction.

Public debt-for-nature swaps are mostly driven by the willingness of creditor countries and historically led by Paris Club members. In 1990, the Paris Club first introduced debt conversion

clauses for lower-middle-income countries, which was extended in 1991 to severely indebted low-income countries (SILICs). By now, most Paris Club members have made swap conversions, each with its methods and procedures.

The US is the single largest creditor involved in public debt-for-nature swaps and has mainly carried out debt-for-nature swaps through two facilities under USAID: The Tropical Forest Conservation Act (TFCA) introduced in 1998 and the Enterprise for the Americas Initiative (EAI), a predecessor of TFCA.

2.2 Evolution and Recent Trends of Debt-for-Nature Swaps

Since its inception, debt-for-nature swaps have been applied in over 30 countries across all continents¹¹. From 1987 to 2015, the total value of debt restructured under debt-for-nature swap agreements was over US\$2.6 billion worldwide, resulting in about US\$1.2 billion of transfers to conservation projects¹². Among all debt-for-nature swap agreements during this period, over three quarters were completed in the 1990s, and over 93% were public debt-for-nature swaps¹³.

By value, most debt-for-nature swaps were performed in Latin American countries, such as El Salvador, Columbia, Jamaica, Peru, and Chile, and African countries such as Costa Rica and Egypt. Some countries, like Mexico, signed 12 debt-for-nature swap deals with the US from 1991 to 1998.

By the end of 2003, at least 66 bilateral debt-for-nature swaps agreements were completed, mostly in the Latin America and Caribbean region. About 28% of these debt swaps involved the US, and 27% involved Germany. Other creditor countries that participated in these swaps included Switzerland, Sweden, Canada, Finland, Belgium, Holland, and France. Among others, El

⁹ "Debt for Nature Swaps."

¹⁰ "Debt for Nature Swaps."

¹¹ Sheikh, "Debt-for-Nature Initiatives and the Tropical Forest Conservation Act: Status and Implementation."

¹² "Debt for Nature Swaps."

¹³ "Debt for Nature Swaps."

Salvador, Poland, Peru, Jordan and Jamaica had the most amount of debt swapped (Table 1).

Table 1 Ten Countries with most debt treated under debt-for-nature swaps by 2003 (Data: OECD 2007)

Debtor Country	Face value of debt treated (US\$ million)	Debtor Country Region
El Salvador	659.5	Latin America & Caribbean
Poland	588	Europe & Central Asia
Peru	580.6	Latin America & Caribbean
Jordan	496.4	Middle East & North Africa
Jamaica	405.4	Latin America & Caribbean
Colombia	322.8	Latin America & Caribbean
Chile	186	Latin America & Caribbean
Bolivia	93.3	Latin America & Caribbean
Honduras	68	Latin America & Caribbean
Ecuador	66	Latin America & Caribbean

The largest debt-for-nature swap occurred in Poland in 1992 when up to US\$3 billion of debt owed to the Paris Club was swapped for environmental concessions. In exchange, the Polish government promised to transfer annual debt repayments in national currency to the local financing facility EcoFund. This provided non-returnable grants to the implementation of projects in five key environmental protection areas: air, water, nature pollution, climate protection, and waste management¹⁴. Based on past performance in managing environmental projects, EcoFund has succeeded in attracting co-

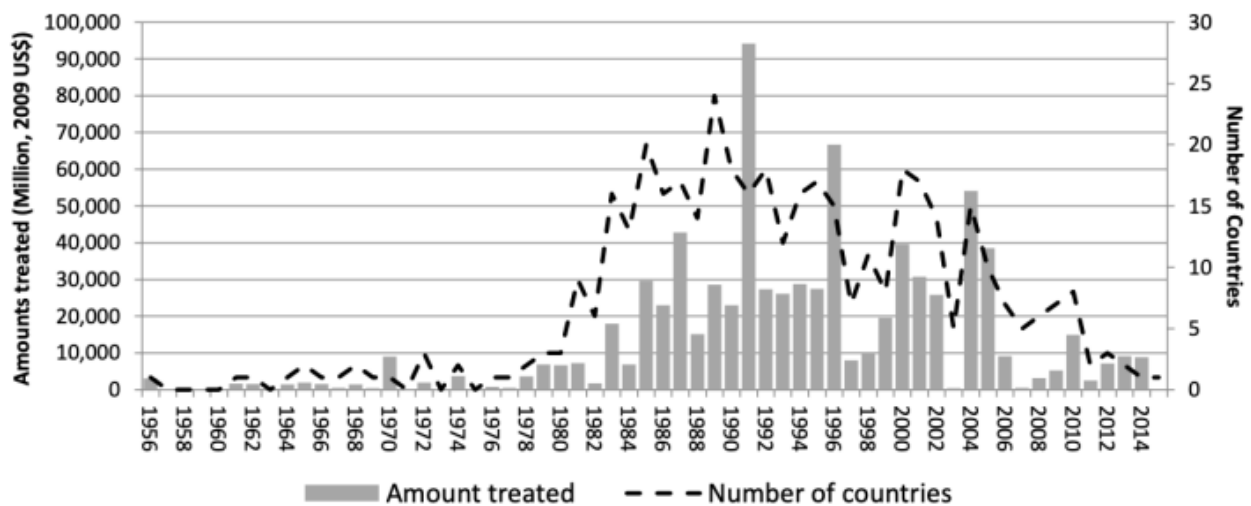
finance for these projects to leverage resources from domestic public and private sectors¹⁵.

The decline of the use of debt-for-nature swaps in the 2000s can be attributed to an overall stronger world economy and less debt on developing countries' balance sheets after the debt-restructuring and debt forgiveness by the Paris Club. Despite in the 1980s and 1990s, Figure 2 shows how treatments by the Paris Club countries (that is most developed countries providing credits to emerging countries) have spiked in the 1980s and 1990s and have fallen off since 2005.

¹⁴ "Polish EcoFund Offers Template for Eco-Innovation Funding," Text, Eco-innovation Action Plan - European Commission, May 11, 2008, https://ec.europa.eu/environment/ecoap/about-eco-innovation/business-fundings/poland/225_en.

¹⁵ OECD, "Lessons Learnt from Experience with Debt-for-Environment Swaps in Economies in Transition," *OECD Papers* 7, no. 5 (November 14, 2007): 1–65, https://doi.org/10.1787/oecd_papers-v7-art15-en.

Figure 2: Evolution of Paris Club Treatments (Cheng, Diaz-Cassau, Erce, 2018)¹⁶



Yet, over the past years, higher infrastructure spending and COVID-19 has changed the situation significantly with fast mounting and increasingly distressed debt in many emerging countries. This gives renewed opportunity for debt-for-nature swaps, especially in BRI countries. For China, which over the past decade has become the largest creditor for many developing countries in

its “Belt and Road Initiative”, however, debt-for-nature swaps are new territory.

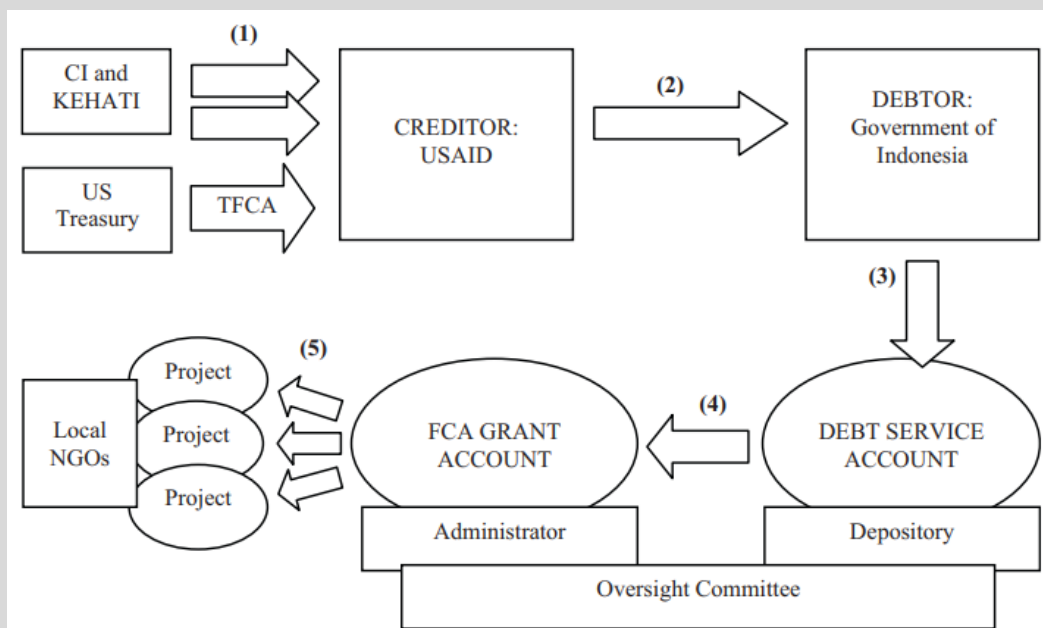
¹⁶ Gong Cheng, Javier Díaz-Cassou, and Aitor Erce, “Official Debt Restructurings and Development,” *World Development* 111 (November 1, 2018): 181–95, <https://doi.org/10.1016/j.worlddev.2018.07.003>.

Case Study: The 2009 US-Indonesian Debt-for-nature Swap

The US-Indonesia debt swap agreements signed in 2009 involved four parties: the US government, the Indonesian government, Conservation International (CI), and a local Indonesian environmental foundation KEHATI. The debt swap included the following steps¹⁷:

- 1) Under the TFCA, the US Treasury contributes US\$20 million to USAID, the creditor of Indonesia. Besides, CI and KEHATI each pay a swap fee of US\$1 million to USAID;
- 2) USAID cancels six debt claims with a nominal value of about US\$ 30 million owed by the Indonesian government;
- 3) The Indonesian government pays in installments of the nominal value into an HSBC debt service account;
- 4) With the instructions from an oversight committee, HSBC makes transfers regularly in US\$ to an FCA Grants Account, managed by KEHATI;
- 5) After approval by the oversight committee, KEHATI transfers grants to eligible NGOs for environmental projects.

Figure 3 Overview of the US-Indonesian Debt-for-nature Swap (Cassimon, Prowse and Essers, 2011)¹⁸



¹⁷ Danny Cassimon, Martin Prowse, and Dennis Essers, "The Pitfalls and Potential of Debt-for-Nature Swaps: A US-Indonesian

Case Study," *Global Environmental Change* 21, no. 1 (February 1, 2011): 93–102, <https://doi.org/10.1016/j.gloenvcha.2010.10.001>.

¹⁸ Cassimon, Prowse, and Essers.

2.3 Challenges of Implementing Debt-for-nature Swaps

Though debt-for-nature swaps seem a win-win strategy for all parties, debt-for-nature swaps are complex in their implementation due to a number of reasons:

- **High transaction cost.** As a debt-for-nature swap involves transactions among several groups (e.g., debtor, creditors, donors, NGOs), its preparation, negotiation, and implementation make a complex and lengthy process, taking at least 2 to 4 years¹⁹. Disagreements between the stakeholders on the details might further increase the transaction costs, making debt-for-nature swaps less efficient when compared with other financial instruments. For example, Antigua and Barbuda negotiated a “debt for climate adaptation with coastal zone management swap” with Brazil for US\$18 million in 2012 but the deal did not materialize due to delays within the Brazilian Parliament.²⁰
- **Requirements for long-term financial commitments.** The success of debt-for-nature swaps depends heavily on whether debtor countries are fiscally capable of making stable and long-term commitments to the conservation programs. However, such commitments are hard to predict and can be easily undermined in case of a fiscal or liquidity crisis, as well governance issues such as mismanagement and corruption.
- **Possibility of inflation or local currency devaluation in the debtor country.** As one common provision in debt-for-nature swaps is the use of local currency to service the SWAP

(i.e., the local government pays the trust fund in local currency), local currency devaluation or inflation can reduce the real cash value of conservation commitments. The impact can also be reversal: the injection of large quantities of local currency might give rise to inflation in the debtor country.

- **Challenges in the design and implementation of conservation projects.** As most debt-for-nature swaps include designs for the conservation of local resources or biodiversity, they might conflict with already existing conservation programs, including re-settlement of local communities or issues of land ownership. In the first debt-for-nature swaps in Bolivia, for example, the agreement to set aside land with development restrictions was contested by the local communities, as the local community thought that the country had relinquished sovereignty to the international environmental group.²¹ Conservation programs also need operational support such as steady supplies of equipment, fuel, and trained staff²². Furthermore, the effects of the conservation programs are often hard to evaluate or supervise.

3. The Relevance of Debt-for-nature Swaps for China in the BRI

The opportunities for debt-for-nature swaps in the BRI have possibly never been greater: on the one hand, many of the BRI countries are still nature-rich, while they are increasingly dealing with biodiversity risks. At the same time, China’s role as a lender has increased in these countries –

¹⁹ OECD, “Lessons Learnt from Experience with Debt-for-Environment Swaps in Economies in Transition.”

²⁰ Frances Fuller et al., “Debt for Climate Swaps: Caribbean Outlook,” n.d., 18, https://climateanalytics.org/media/debt_for_climate_swap_impact_briefing.pdf.

²¹ Michael Occhiolini, “Debt-for-Nature Swaps” (World Bank), accessed October 30, 2020,

<http://documents1.worldbank.org/curated/en/300181468739253960/pdf/multi0page.pdf>.

²² Molly Bergen, “4 Challenges in the Fight to Save Central Africa’s Rainforest,” World Resources Institute, November 9, 2017, <https://www.wri.org/blog/2017/11/4-challenges-fight-save-central-africas-rainforest>.

with many countries requiring debt restructuring after over-investments and underperformance paired with an economic shock in the COVID-19 pandemic.

3.1 Biodiversity in the BRI

The Belt and Road Initiative (BRI) covers some of the world's most biodiverse countries²³: Ecuador, Peru, and Venezuela (Latin America and the Caribbean), Indonesia, Malaysia, Papua New Guinea and Philippines (East Asia and Pacific), South Africa, and Madagascar (Sub-Saharan Africa). They, together with other neighboring countries, are faced with increasing challenges to their biodiversity and ecosystem²⁴. For example:

- **Ecuador** and **Venezuela** have the second and third highest deforestation rate in the world;
- **Peru** is experiencing an increasing rate of deforestation in the Amazon Rainforest in the past 13 year, largely due to the clearing of land for agriculture;
- In **Indonesia**, the conversion of natural forest (especially tropical lowland rainforest) into oil palm plantation is a serious threat to biodiversity conservation, and inappropriate fishing methods, coral reef mining, and sedimentation have damaged the coral reefs;

- Around 18.5 million hectares of rangelands in **Pakistan** at the verge of severe degradation as a result of the increasing domestic livestock population²⁵;
- **Angola** is experiencing a dramatic loss of wildlife as a result of increased illegal poaching and decades of civil war in the past²⁶;
- Countries in **the Great Lakes region**, such as **Cote d'Ivoire** and **Democratic Republic of Congo** are suffering from sharp decline in the populations of wildlife within natural parks and reserves²⁷.

With the large scale of China's infrastructure investments, the risks of biodiversity loss in some BRI countries could accelerate. A spatial analysis of the six major BRI economic corridors²⁸ shows that BRI corridors overlap with 265 threatened species, over 1700 key environmentally important areas, and 46 biodiversity hotspots²⁹. Though follow-up analysis is needed on individual projects, these overlaps indicate the significant negative ecological impacts of infrastructure development in the BRI.

To reverse the decline in biodiversity by 2030, the financing needs globally range from US\$722 to 967 billion each year³⁰, with particular investment needs in the BRI. Debt-for-nature swaps are seen

²³ "Megadiverse Countries Definition | Biodiversity A-Z," UNEP-WCMC, 1988, <https://www.biodiversitya-z.org/content/megadiverse-countries>.

²⁴ Biodiversity challenges in specific countries are referenced from the UNDP the Biodiversity Finance Initiative at <http://www.biodiversityfinance.org/index.php/history> and Convention on Biological Diversity at <https://www.cbd.int/>

²⁵ Rabiya Jaffery, "Pakistan's Biodiversity Is Disappearing, But No One Seems to Notice – The Diplomat," The Diplomat, December 1, 2018, <https://thediplomat.com/2018/12/pakistans-biodiversity-is-disappearing-but-no-one-seems-to-notice/>.

²⁶ Vanessa Falkowski, "Contributing to the Conservation of Angolan Biodiversity and Promoting Life on Land," UN Volunteers, March 1, 2019, <https://www.unv.org/Success-stories/Contributing-conservation-Angolan-biodiversity-and-promoting-life-land>.

²⁷ Al-Hamndou Dorsouma, "Why Should Biodiversity Be Africa's Top Priority?" African Development Bank Group, June 5, 2020,

<https://blogs.afdb.org/climate-change-africa/why-should-biodiversity-be-africa%E2%80%99s-top-priority-279>.

²⁸ The BRI has six main economic corridors: (1) the New Eurasian Land Bridge; (2) the China-Central Asia-West Asia Corridor; (3) the China-Pakistan Corridor; (4) the Bangladesh-China- Myanmar Corridor; (5) the China-Mongolia-Russia Corridor; (6) the China-Indochina Peninsula Corridor.

²⁹ "The Belt and Road Initiative: WWF Recommendations and Spatial Analysis," Briefing Paper (WWF, May 2017), http://awsassets.panda.org/downloads/the_belt_and_road_initiative_wwf_recommendations_and_spatial_analysis_may_2017.pdf.

³⁰ Andrew Deutz et al., "Financing Nature: Closing the Global Biodiversity Financing Gap" (The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability, 2020), <https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/>.

as one important way to mobilize capital for protecting biodiversity (Table 2).

Table 2 Example Sources of Biodiversity Finance (The Little Biodiversity Finance Book 2012)

Category	Sub-Category
Direct	<ul style="list-style-type: none"> - Direct ecosystem service fees - Direct biodiversity fees - Offset markets - Bio-prospecting
Indirect	<ul style="list-style-type: none"> - Green commodities
Other Market	<ul style="list-style-type: none"> - Auctioning of allowances
Non-Market	<ul style="list-style-type: none"> - Domestic budget allocation - Agricultural subsidy reform - ODA - Debt-for-nature - philanthropy

3.2 Debt in the BRI

China has become the major lender for many countries in the Belt and Road Initiative.

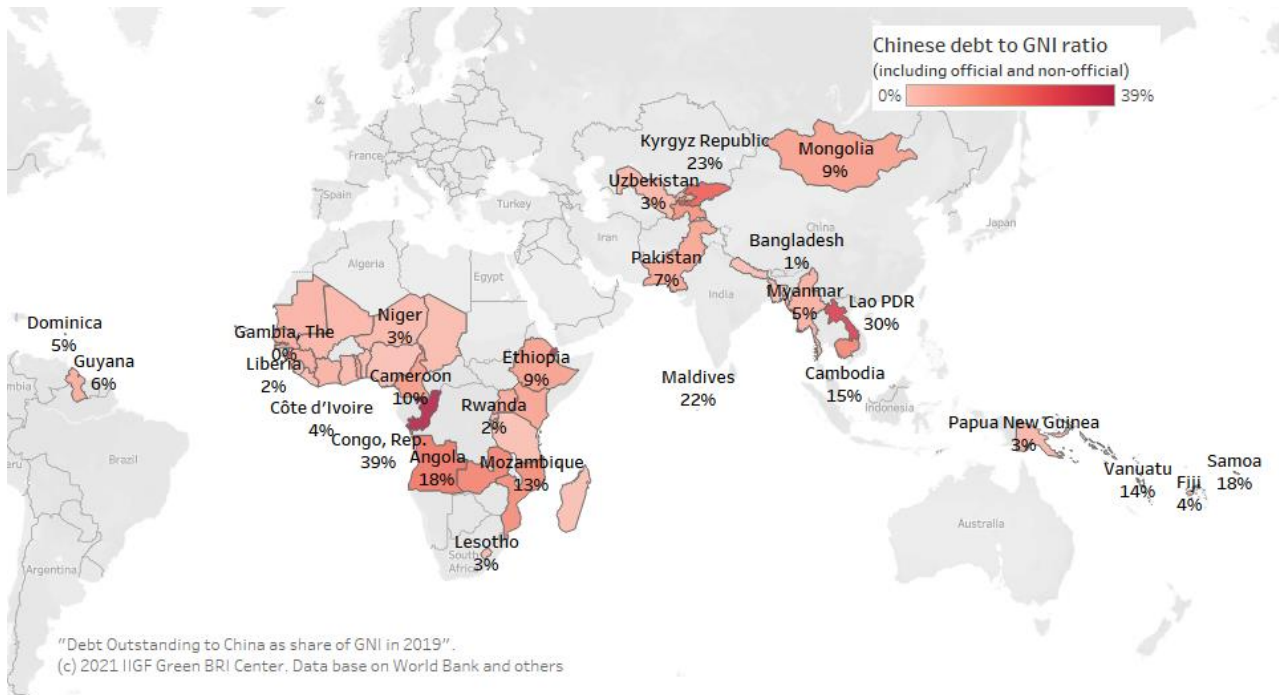
Accelerated by the Covid-19 pandemic, many of these countries have seen their sovereign debt increasingly unsustainable. Based on the analysis of debt (both owed to official and non-official Chinese lenders) in 52 Selected BRI countries from 2014 to 2019, we found that

- as Chinese debt accumulated from 2014 to 2019, some countries had increased burden of fulfilling debt obligations to China. At the end of 2019, Republic of the Congo's public debt to Chinese lenders as a share of GNI was 39%; for Djibouti, it increased to 35%; for Angola, it increased to 18% (Figure 4).
- particularly worrying for their risk of default are countries that have a high

public external debt outstanding to GNI ratio. This ratio can be as high as 58% for Lao PDR, 62 % for Djibouti, and 60% for Republic of the Congo. Other countries, such as Samoa and Mozambique have moderate levels of debt owed to China, but their overall external debt levels are high compared with GNI, which might lead to similar cases as Republic of the Congo or Zambia with debt defaults likely;

- at the end of 2019, among 52 selected BRI countries, some countries with the most outstanding debt owed to China are: Pakistan, Angola, Kenya, Ethiopia and Lao PDR.

Figure 4 Debt Outstanding to China as a Share of GNI in 2019



Accordingly, several countries, such as Zimbabwe, Angola and Pakistan have called for China to renegotiate its debt. With China’s promise to be an important partner for BRI countries in the post-COVID recovery, it needs consider how to better deal with these requests.

Contrary to some calls for debt-for-equity and debt-for-resource swaps to reduce debt service burden, we do not agree to either measure under most circumstances: both pathways risk reducing domestic resources for future economic growth. Rather, we suggest for China to engage in debt-for-nature swaps to create triple-win scenarios.

For China, the largest bilateral creditor in many BRI countries and the host of the 2021 UN Biodiversity Conference, debt-for-nature swaps add value to some of its loans which might otherwise never be repaid and provide an opportunity for China to take the lead in

leveraging public and private funding for biodiversity conservation.

3.3 China’s Experience in Biodiversity Protection at Home and Abroad

As one of the top 12 most biodiverse countries in the world, China has developed several strategies to protect biodiversity at home. In 2010, China launched the Ecological Conservation Red Line (ECRL) initiative to put certain lands under protection or sustainable management. By 2019, China planned to put 25% of its land under preservation³¹. In 2016, the status of the giant panda was upgraded from “endangered” to “vulnerable” as a result of effective conservation measures in China³².

Internationally, China has also committed to support biodiversity conservation and the Green Development Guidance for BRI projects published

³¹ Jixi Gao, “How China Will Protect One-Quarter of Its Land,” *Nature* 569, no. 7757 (May 21, 2019): 457–457, <https://doi.org/10.1038/d41586-019-01563-2>.

³² Smriti Mallapaty, “China Takes Centre Stage in Global Biodiversity Push,” *Nature* 578, no. 7795 (February 2020): 345–46, <https://doi.org/10.1038/d41586-020-00362-4>.

in December 2020³³ has provided some concrete guidelines for including biodiversity considerations in Chinese overseas investment. Yet, in practice, most Chinese financial institutions including the insurance companies providing funding for BRI projects, lag behind their international counterparts in establishing environment and biodiversity standards and risk-management systems.

The application of debt-for-nature swaps would be a new chapter in China's approach for building a green Belt and Road Initiative.

4. Policy Recommendations

To apply debt-for-nature swaps in the Belt and Road Initiative, we recommend that Chinese stakeholder engage in the following areas:

1. First, to address the challenge of long-term commitments in debt-for-nature swaps, a specific policy-making agency in charge of the design, implementation, and supervision of such swaps should be set up. It would be ideally in the Ministry of Finance (MOF) and supported by the Ministry of Ecology and Environment (MEE) and the China Banking and Insurance Regulatory Commission (CBIRC). This dedicated agency would lead the negotiations with the debtor governments, conservation organizations, and Chinese lenders (policy banks in particular), facilitate better governance in debtor countries and initiate pilot swaps in BRI countries with high climate vulnerability, high indebtedness, rich biodiversity, and good creditworthiness, or those with previous success in similar debt conversion practices.
2. Second, this agency should develop a comprehensive bilateral debt conversion program with clear clauses on the eligibility of debt type, selection criteria, and requirements for conservation projects. In particular, the program should identify the eligibility of debts owed to different lenders (such as policy banks, commercial banks, etc.). It should also include the priority use of swap proceeds, such as for climate, environment, or biodiversity, as well as criteria for selection and monitoring for projects in debtor countries. This recommendation is also beneficial for reducing transaction costs and avoiding duplicate work.
3. Third, while a baseline framework is essential, it is important to develop debt-for-nature swap agreements that are in line with the debtor country's conservation goals. The agency could work closely with international conservation organization with experience in the debtor countries, or former participants in debt-for-nature swaps, to ensure that the designed scheme is realistic and targets the high-priority regions. One option is to support existing national initiatives like Malaysia's Central Forest Spine.³⁴
4. Fourth, the agency together with the creditors and debtor countries should acquire additional funding for the debt-for-nature swaps from Chinese domestic and international sources. One way to attract private finance is to provide market incentives, such as carbon emissions trading credits.³⁵ Conservation funding could also be delivered through a conservation trust fund with measures taken to hedge currency risk.

³³ "Green Development Guidance for BRI Projects Baseline Study Report," 2020 Policy Study Series (Beijing: BRI International Green Development Coalition, December 2020), http://en.brigc.net/Reports/Report_Download/202012/P020201201717466274510.pdf.

³⁴ Alex Mark Lechner, Faith Ka Shun Chan, and Ahimsa Campos-Arceiz, "Biodiversity Conservation Should Be a Core Value of

China's Belt and Road Initiative," *Nature Ecology & Evolution* 2, no. 3 (March 2018): 408–9, <https://doi.org/10.1038/s41559-017-0452-8>.

³⁵ Steele and Patel, "Tackling the Triple Crisis. Using Debt Swaps to Address Debt, Climate and Nature Loss Post-COVID-19."

5. Accordingly, the agency should engage with the Paris Club and other relevant stakeholders in government, finance and NGOs (e.g., TNC, WWF) to build its internal capacity and to coordinate international efforts on debt-for-nature swaps.
6. China should use the debt-for-nature swaps as an important tool for further outreach of its ambitions in building a green BRI.
7. In addition to ex-post debt conversion programs, it is equally important to improve the debt sustainability of BRI countries through stricter requirements for future BRI projects. Specifically, financial regulators could

urge Chinese banks and insurance companies to better evaluate environmental and biodiversity risks for new projects, by applying spatial planning or creating lists of “exclusion areas”, a concept similar to the Ecological Conservation Red Line initiative at home.

We believe that with strong resolve from the Chinese side, the framework and China’s ambitions for debt-for-nature swaps could be announced during the Forum on China Africa Cooperation (FOCAC), which is planned to take place later in 2021³⁶.

³⁶ Eric Olander, “China - Africa: Top 10 Issues Going into 2021,” The Africa Report, January 4, 2021,

<https://www.theafricareport.com/57044/china-africa-top-10-issues-going-into-2021/>.

References

- Bergen, Molly. “4 Challenges in the Fight to Save Central Africa’s Rainforest.” World Resources Institute, November 9, 2017. <https://www.wri.org/blog/2017/11/4-challenges-fight-save-central-africas-rainforest>.
- Cassimon, Danny, Martin Prowse, and Dennis Essers. “The Pitfalls and Potential of Debt-for-Nature Swaps: A US-Indonesian Case Study.” *Global Environmental Change* 21, no. 1 (February 1, 2011): 93–102. <https://doi.org/10.1016/j.gloenvcha.2010.10.001>.
- Cheng, Gong, Javier Díaz-Cassou, and Aitor Erce. “Official Debt Restructurings and Development.” *World Development* 111 (November 1, 2018): 181–95. <https://doi.org/10.1016/j.worlddev.2018.07.003>.
- UNDP. “Debt for Nature Swaps.” Accessed October 29, 2020. <https://www.sdfinance.undp.org/content/sdfinance/en/home/solutions/debt-for-nature-swaps.html#mst-1>.
- Deutz, Andrew, Geoffrey M. Heal, Rose Niu, Eric Swanson, Terry Townshend, Zhu Li, Alejandro Delmar, Alqayam Meghji, Suresh A. Sethi, and John Tobin-de la Puente. “Financing Nature: Closing the Global Biodiversity Financing Gap.” The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability, 2020. <https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/>.
- Dorsouma, Al-Hamndou. “Why Should Biodiversity Be Africa’s Top Priority?” African Development Bank Group, June 5, 2020. <https://blogs.afdb.org/climate-change-africa/why-should-biodiversity-be-africa%E2%80%99s-top-priority-279>.
- Falkowski, Vanessa. “Contributing to the Conservation of Angolan Biodiversity and Promoting Life on Land.” UN Volunteers, March 1, 2019. <https://www.unv.org/Success-stories/Contributing-conservation-Angolan-biodiversity-and-promoting-life-land>.
- Fuller, Frances, Luis Zamarioli, Bianka Kretschmer, Adelle Thomas, and Laetitia De Marez. “Debt for Climate Swaps: Caribbean Outlook,” n.d., 18. https://climateanalytics.org/media/debt_for_climate_swap_impact_briefing.pdf.
- Gao, Jixi. “How China Will Protect One-Quarter of Its Land.” *Nature* 569, no. 7757 (May 21, 2019): 457–457. <https://doi.org/10.1038/d41586-019-01563-2>.
- Gerretsen, Isabelle. “The Deal That Saved Seychelles’ Troubled Waters.” BBC Future, August 3, 2020. <https://www.bbc.com/future/article/20200803-the-deal-that-saved-seychelles-troubled-waters>.
- “Green Development Guidance for BRI Projects Baseline Study Report.” 2020 Policy Study Series. Beijing: BRI International Green Development Coalition, December 2020. http://en.brigc.net/Reports/Report_Download/202012/P020201201717466274510.pdf.
- Jaffery, Rabiya. “Pakistan’s Biodiversity Is Disappearing, But No One Seems to Notice – The Diplomat.” The Diplomat, December 1, 2018. <https://thediplomat.com/2018/12/pakistans-biodiversity-is-disappearing-but-no-one-seems-to-notice/>.
- Lechner, Alex Mark, Faith Ka Shun Chan, and Ahimsa Campos-Arceiz. “Biodiversity Conservation Should Be a Core Value of China’s Belt and Road Initiative.” *Nature Ecology & Evolution* 2, no. 3 (March 2018): 408–9. <https://doi.org/10.1038/s41559-017-0452-8>.
- Mallapaty, Smriti. “China Takes Centre Stage in Global Biodiversity Push.” *Nature* 578, no. 7795 (February 2020): 345–46. <https://doi.org/10.1038/d41586-020-00362-4>.

- UNEP-WCMC. "Megadiverse Countries Definition | Biodiversity A-Z," 1988. <https://www.biodiversitya-z.org/content/megadiverse-countries>.
- Occhiolini, Michael. "Debt-for-Nature Swaps." World Bank. Accessed October 30, 2020. <http://documents1.worldbank.org/curated/en/300181468739253960/pdf/multi0page.pdf>.
- OECD. "Lessons Learnt from Experience with Debt-for-Environment Swaps in Economies in Transition." *OECD Papers* 7, no. 5 (November 14, 2007): 1–65. https://doi.org/10.1787/oecd_papers-v7-art15-en.
- Olander, Eric. "China - Africa: Top 10 Issues Going into 2021." *The Africa Report*, January 4, 2021. <https://www.theafricareport.com/57044/china-africa-top-10-issues-going-into-2021/>.
- Eco-innovation Action Plan - European Commission. "Polish EcoFund Offers Template for Eco-Innovation Funding." Text, May 11, 2008. https://ec.europa.eu/environment/ecoap/about-eco-innovation/business-fundings/poland/225_en.
- Rahim, Saqib. "How Investors Are Coming up with the Green to Save the Ocean Blue." *Washington Post*, October 28, 2020. <https://www.washingtonpost.com/climate-solutions/2020/10/28/climate-solutions-ocean-conservation/>.
- "Seychelles Systematic Country Diagnostic." World Bank, June 23, 2017. <http://documents1.worldbank.org/curated/en/191181499447495374/pdf/Seychelles-SCD-FINAL-23Jun17-06282017.pdf>.
- Shabecoff, Philip. "Bolivia to Protect Lands in Swap for Lower Debt (Published 1987)." *The New York Times*, July 14, 1987, sec. Science. <https://www.nytimes.com/1987/07/14/science/bolivia-to-protect-lands-in-swap-for-lower-debt.html>.
- Sheikh, Pervaze A. "Debt-for-Nature Initiatives and the Tropical Forest Conservation Act: Status and Implementation," n.d., 21.
- Steele, Paul, and Sejal Patel. "Tackling the Triple Crisis. Using Debt Swaps to Address Debt, Climate and Nature Loss Post-COVID-19," September 2020. <https://pubs.iied.org/16674IIED/?c=biodiv>.
- "The Belt and Road Initiative: WWF Recommendations and Spatial Analysis." Briefing Paper. WWF, May 2017. http://awsassets.panda.org/downloads/the_belt_and_road_initiative___wwf_recommendations_and_spatial_analysis___may_2017.pdf.

About the Authors

Mengdi YUE is a researcher at the Green BRI Center at IIGF. She holds a Master's degree in International Relations from JHU School of Advanced International Studies (SAIS) and has worked with the American Enterprise Institute (AEI), European Union Chamber of Commerce in China and the China-ASEAN Environmental Cooperation Center of the Ministry of Ecology and Environment. She is fascinated by green energy finance in China and the Belt and Road Initiative and data analysis.

Dr. Christoph NEDOPIL WANG is the Founding Director of the Green Belt and Road Initiative Center and a Senior Research Fellow at the International Institute of Green Finance (IIGF) of the Central University of Finance and Economics (CUFE) in Beijing, China. Christoph is a member of the Belt and Road Initiative Green Coalition (BRIGC) of the Chinese Ministry of Ecology and Environment. He has contributed to policies and provided research/consulting amongst others for the China Council for International Cooperation on Environment and Development (CCICED), the Ministry of Commerce, various private and multilateral finance institutions (e.g., ADB, IFC, as well as multilateral institutions (e.g., UNDP, UNESCAP) and international governments. Christoph holds a Master of Engineering from the Technical University Berlin, a Master of Public Administration from Harvard Kennedy School, as well as a PhD in Economics.

About IIGF Green BRI Center

The IIGF Green Belt and Road Initiative Center (Green BRI Center) is a leading research center that provides research, analyses and information on the policies, economics, environment, sustainability and green finance of the Belt and Road Initiative (BRI) – also known as Silk Road Initiative.

Through our work, we strive to be the global leader for independent and research-based policy and action to build an environmentally-friendly and green Belt and Road Initiative that has zero emissions, protects biodiversity, and provides better livelihoods for people. As such we focus on specific areas:

- sustainable infrastructure
- sustainable transport
- renewable energy
- biodiversity finance
- green innovation
- green finance policy

The IIGF Green BRI Center was founded in 2019 and is part of the independent think tank International Institute of Green Finance (IIGF) of the Central University of Finance and Economics (CUFE) in Beijing, China.

About the International Institute of Green Finance (IIGF)

The International Institute of Green Finance (IIGF) is a leading think tank on green finance in China. IIGF was established in 2016 by Prof. Yao Wang. The Institute has been involved in designing the green finance system in China and has been working within China and internationally on researching and harmonizing standards e.g., for green bonds, green credit, green insurance, green funds. With its staff of about 50 people, IIGF is engaged in numerous private sectors, public sector and academic projects. It is funded by a donation from Tianfeng Securities, project work and research grants from international partners.



Contact us for more detailed analysis of the Belt and Road Initiative (BRI), its investments, trends and policies:

Green Belt and Road Initiative Center

International Institute of Green Finance, CUFU

62 South College Road, Haidian District, Beijing, China, 100081

中央财经大学绿色金融国际研究院

北京市海淀区学院南路 62 号, 100081

+86 10 62288768

info@green-bri.org

www.green-bri.org || <http://iigf.cufe.edu.cn>