Risk Reversal

ACCELERATING REFORM FOR ENVIRONMENTAL MANAGEMENT OF CHINA'S OVERSEAS DEVELOPMENT FINANCE

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INTRODUCTION

China's overseas development finance has funneled nearly half a trillion dollars to developing countries since 2008 (Ray et al 2021). This stepwise increase in available development finance has the potential to make a much-needed dent in the infrastructure gaps developing countries face, estimated at more than $3 trillion per year (Bhattacharya et al 2019).

Given the impressive scale of this new source of development finance, it is no surprise that global interest is growing in ensuring that China's international economic activity aligns with global commitments for the climate and the 2030 Agenda for Sustainable Development (UN General Assembly 2015).

China has already made impressive strides in committing to align its overseas activities with global climate goals, and its domestic activities with biodiversity goals. In September 2021, President Xi Jinping took a major step in aligning China's overseas economic activity with climate goals, announcing in his address to the 76th United Nations General Assembly that China would "step up support for other developing countries in developing green and low-carbon energy, and will not build new coal-fired power projects abroad" (Xi 2021).

China has also made significant efforts to protect biodiversity domestically, through its Ecological Conservation Red Line (ECRL) initiative. The ECRL project uses data on ecological services and land use to develop a national system of protected areas accounting for approximately one-fourth of the nation's land (see, for example, Bai et al 2018; Guo et al 2018; and Jiang et al 2019). Notably, these conservation steps include special provisions for communities' traditional livelihoods, showing a

growing recognition among Chinese leaders of fragile ecosystems and the communities that depend on them, for example, by subsidizing pastoral communities' preservation of grassland ecosystems (Hou et al 2021).

Efforts to manage these risks to biodiversity and to the communities who depend on those resources in China's *overseas* activities are at an earlier stage. With an eye to understanding these risks, researchers from the Boston University Global Development Policy (GDP) Center tracked and geographically located sovereign finance projects from China's two "policy banks" that are most active abroad – the China Development Bank and the Export-Import Bank of China. Published in *Nature Ecology & Evolution*, this new research considers the local environmental and social risks of these loans based on the geographic location of the projects they support. To enable comparison, these risks are considered alongside risks posed by projects financed by the World Bank, the traditional leader in global development finance. The research found Chinese development finance projects pose higher risks to local biodiversity and Indigenous communities around the world, particularly in the sectors of energy and extraction, compared to the World Bank.

Additional research by the China Council for International Cooperation on Environment and Development (CCICED), which GDP Center researchers and China's Ministry of Ecology and Environment contributed to, considers lessons for managing these risks across China's overseas investments. The study, "Green BRI and the 2030 Agenda for Sustainable Development" collates the experiences of other major international development finance institutions (DFIs) that have incorporated sustainability principles and policies into procedures for planning, approving and overseeing projects, and highlights procedures China could implement across their portfolio.

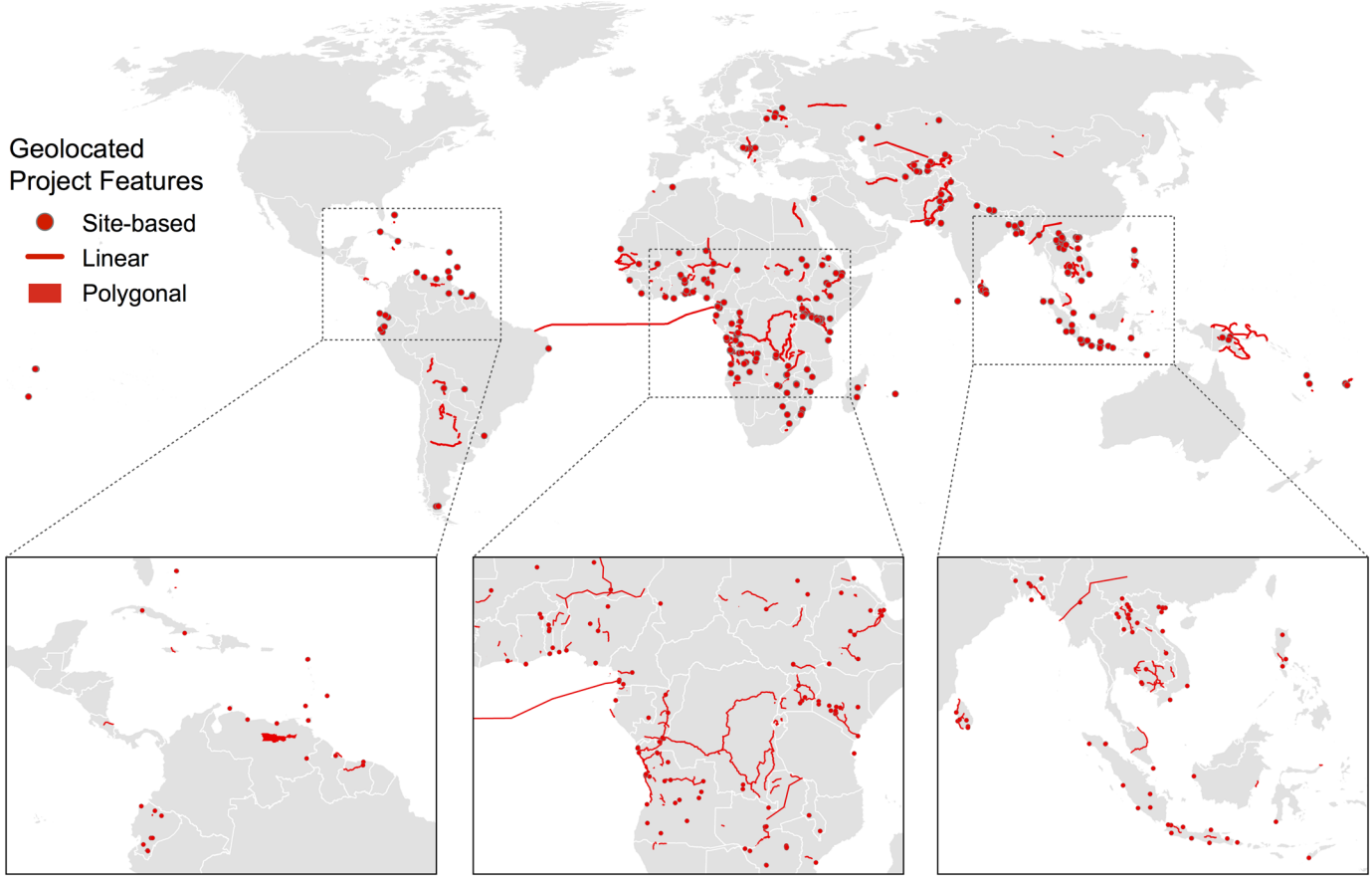
The following sections explore the results of this research separately, which together emphasize the need to continue strengthening China's environmental management of its overseas development finance.

TRACKING CHINA'S OVERSEAS DEVELOPMENT FINANCE: A NEW GEO-LOCATED DATASET OF CONTEMPORARY CHINESE SOVEREIGN FINANCE

In order to consider the environmental and social risks intrinsic to China's overseas development finance, the GDP Center compiled a geo-located dataset of sovereign loans issued by China's two policy banks that are most active abroad, the China Development Bank and the Export-Import Bank of China (Ray et al 2021). As "policy banks," these institutions lend not only for commercial purposes, but also to further specific policy goals, both those of the Chinese government and the borrowing government. For this reason, their activity is comparable to lending by multilateral and bilateral development finance institutions (DFIs) internationally. The resulting China's Overseas Development Finance (CODF) dataset traces loans signed through 2019, in order to support efforts to mitigate and manage local environmental and social risks associated with these projects, including those that have not yet begun construction.

Figure 1 below shows the geographic distribution of projects included in the CODF Dataset Version 1.0. While Chinese development finance is distributed widely among lower and middle income countries, projects are particularly heavily clustered in Northern South America, sub-Saharan Africa and Southeast Asia. Project locations can be classified spatially as points (for individual buildings), lines (for linear infrastructure such as roads, pipelines and electricity transmission projects), or polygons (for area-based projects such as oil fields, plantations and complexes of multiple buildings).

Figure 1. Project Locations, CODF Dataset Version 1.0



Source: Ray et al (2021).

The CODF Dataset Version 1.0 contains 862 projects, 669 of which have specific geographic locations that can be mapped, and 586 of which were geo-located within 25 kilometers of the project site.

Table 1: Geolocation Precision of the CODF Dataset Version 1.0

	Number of Commitments		Commitment Total (USDb)	
Precision level:	**Absolute**	**Percent**	**Absolute**	**Percent**
Exact	460	68.8%	219.5	79.8%
Within 25km	136	20.3%	31.8	11.6%
2nd order A.D.*	23	3.4%	6.8	2.5%
1st order A.D.*	28	4.2%	13.7	5.0%
Multiple 1st order A.D.s*	4	0.6%	0.4	0.2%
Country	18	2.7%	2.7	1.0%
Unknown	0	0.0%	0.0	0.0%
Total	**669**	**100.0%**	**270.0**	**100.0%**

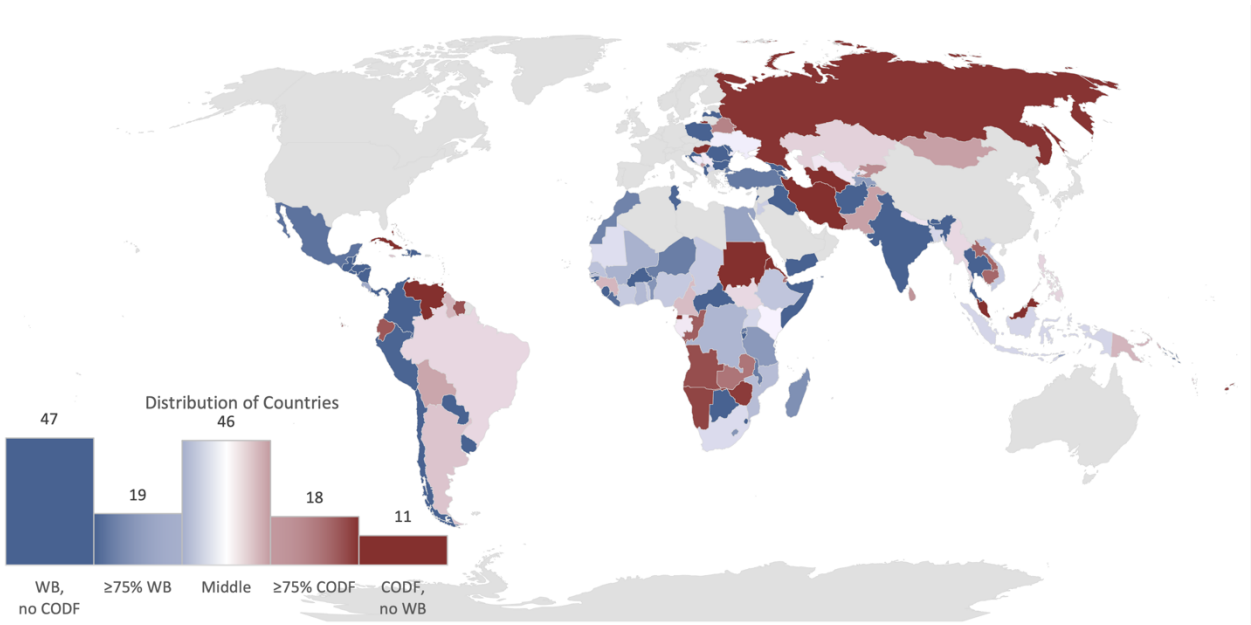
Source: Ray et al (2021).
Note: *A.D.: administrative division.

CHINA'S OVERSEAS DEVELOPMENT FINANCE IN COMPARISON WITH THE WORLD BANK

Using the CODF Dataset Version 1.0, GDP Center research compares China's development lending to the projects financed by the World Bank, traditionally the top source of development finance for developing countries.

Overall, China and the World Bank show remarkable similarity in the geographic scope of their lending. As Figure 2 below shows, most of the countries that borrowed from China also borrowed from the World Bank. Among the 94 countries who borrowed from China's policy banks between 2008 and 2019, all but 11 also borrowed from the World Bank during those years. About half – 46 out of 94 – borrowed in roughly equal measure from the two sources.

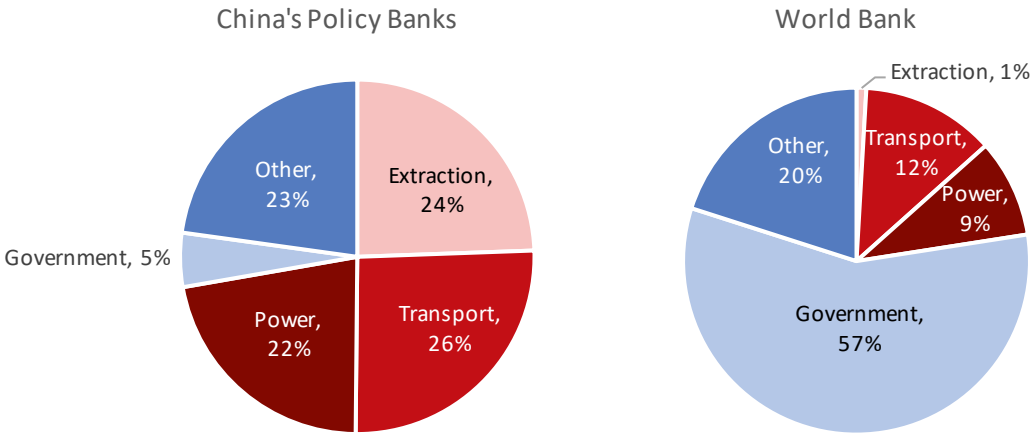
Figure 2: Distribution of Countries by Their Borrowing from the World Bank and China's Policy Banks



Source: Author calculation using Ray et al (2021). Data does not include loans to China or to regional bodies.

While these sources extended roughly the same amount of sovereign loan commitments to a similar range of countries between 2008 and 2019, they did so in significantly different ways. Countries received financing from these two sources for very different types of projects. As Figure 3 shows, roughly three-fourths of sovereign loans by China's policy banks went to projects in just three sectors: extraction, transportation and power. In contrast, the majority of World Bank lending supported projects on governmental institutions, or the services traditionally provided by governments, including education, health, water and sanitation.

Figure 3: Sector Distribution of Sovereign Loans from China's Policy Banks and World Bank



Source: Author calculation from Yang et al (2021).

Notes: Extraction includes pipelines; power includes generation and transmission; government includes public services such as education, health, water and sanitation. World Bank includes disbursed and undisbursed balances for loans from two World Bank institutions: the International Bank for Reconstruction and Development and the International Development Association.

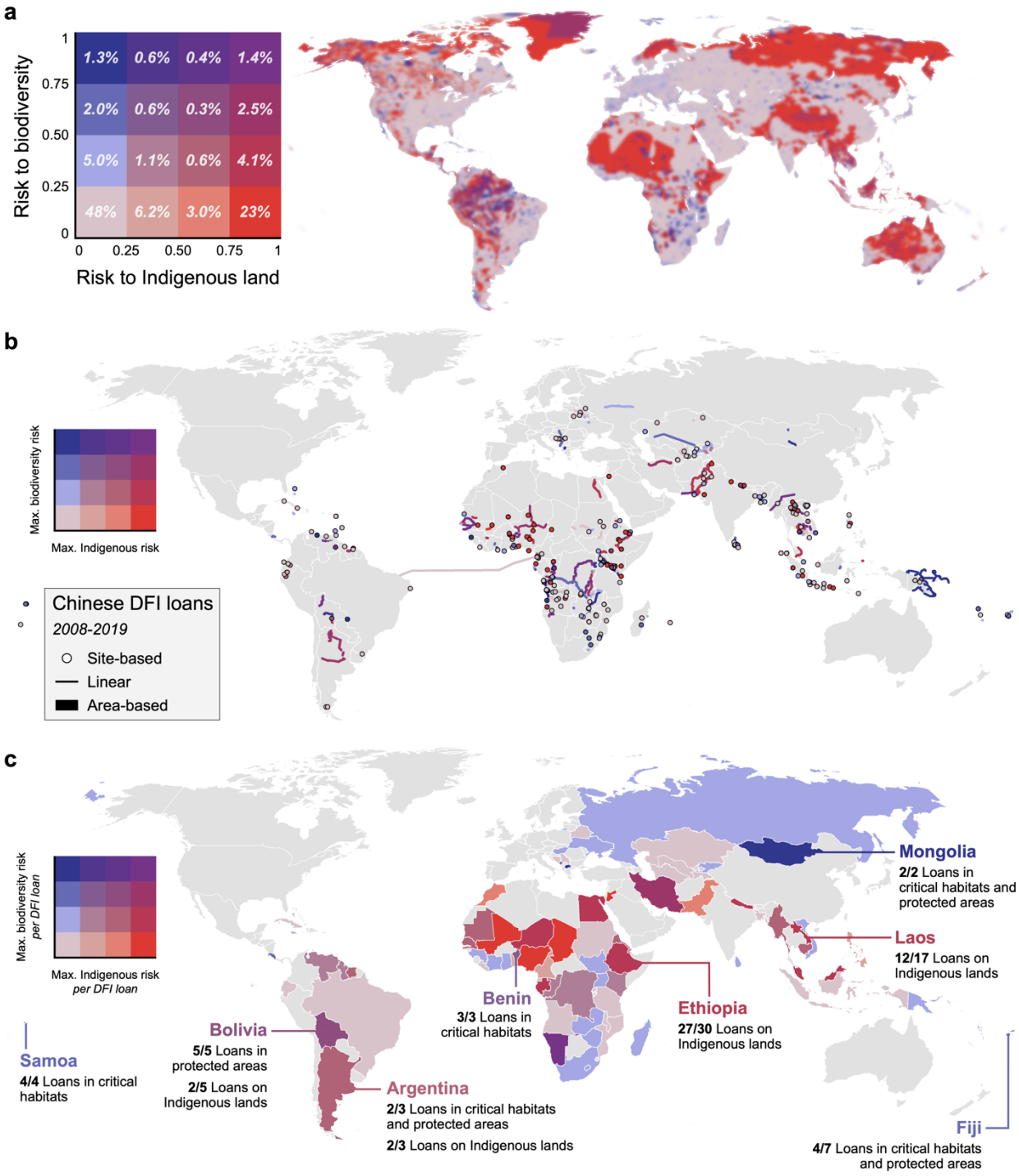
ENVIRONMENTAL AND SOCIAL RISKS IN CHINA'S OVERSEAS DEVELOPMENT FINANCE

Using this global dataset of Chinese development finance projects, Yang et al (2021) analyzed the location-based risks to local biodiversity and Indigenous territory. While many categories are involved in assessing these risks, Yang et al consider three types of sensitive territory with globally comparable definitions, which therefore can be applied across an entire global lending portfolio: national protected areas, potential critical habitats and Indigenous territory. The first two of these areas reflect national and global biodiversity priorities, respectively, and the last recognizes the relationship between communities that have relied on particular ecosystems for generations and the recent history of social conflict that can arise when these communities are not sufficiently consulted regarding projects that affect those ecosystems.

Figure 4 shows the process of measuring these risks. As Figure 4a shows, global land can be classified as representing risks to biodiversity, Indigenous territory, or both. Figure 4b maps the projects in the CODF Dataset Version 1.0 against those sensitive territories, resulting in variation of risks posed by each project. Finally, Figure 4c highlights a few examples of countries whose borrowing portfolio from China shows a particular concentration of projects involving all three types of risk.

Yang et al (2021) find significant overlap between the footprints of China's development finance projects and each of these three types of sensitive territory. This is particularly true for Indigenous territory and potential critical habitats: a majority of China's development finance projects are within 25 kilometers of at least one of these territory types.

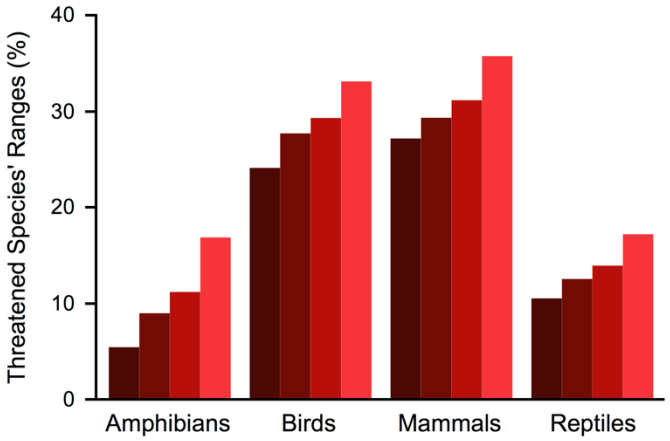
Figure 4. Social and Environmental Sensitivity – China's Overseas Development Finance



Source: Yang et al 2021.

Furthermore, as Figure 5 shows, these projects also have significant overlap with the ranges of threatened species, particularly mammals and birds. Overall, Yang et al (2021) find that up to 24 percent of threatened amphibian, bird, mammal and reptile species are within 25 kilometers of these development projects.

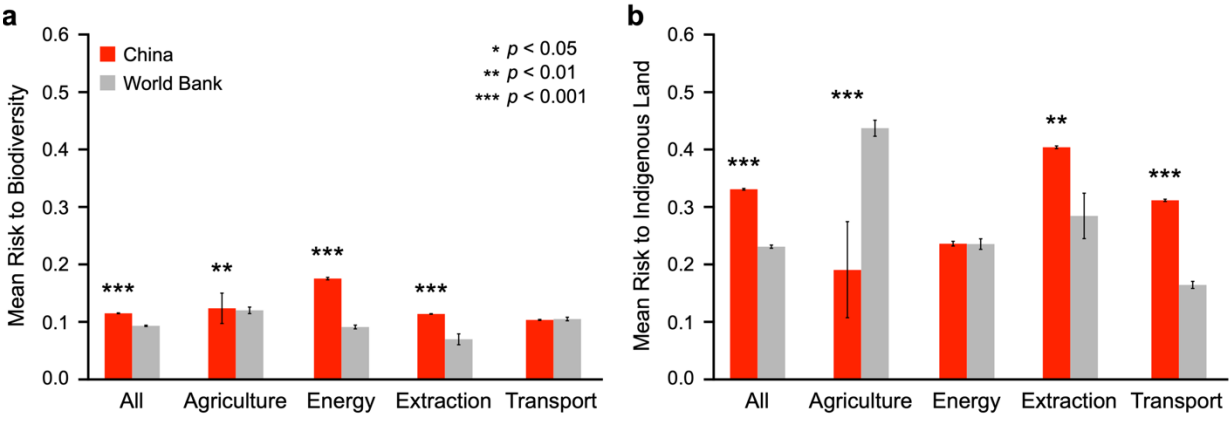
Figure 5: Spatial Overlap of China's Development Finance Projects with Socio-Ecologically Sensitive Areas



Source: Yang et al 2021.

Finally, compared to World Bank projects, Yang et al (2021) find that the territory covered by Chinese development finance projects presents significantly higher risks to biodiversity and Indigenous territory, as shown in Figure 6 below. However, it is worth noting that this difference in risk level is not universal. For example, Chinese-financed agricultural and extraction projects have significantly higher biodiversity and Indigenous territory risk than World Bank loans in the same sector. However, Chinese energy projects present higher biodiversity risks but about the same level of risk to Indigenous territory as World Bank projects only for biodiversity risks. Conversely, Chinese transportation projects present higher risk to Indigenous territory, but not to biodiversity.

Figure 6: Comparison of Integrated Risks to Biodiversity and Indigenous Lands Between Projects Financed by Chinese Policy Banks and the World Bank, Across Sectors



Source: Yang et al 2021.

PLOTTING THE COURSE FOR GREENING CHINA'S OVERSEAS DEVELOPMENT FINANCE

Given the significantly higher social and environmental risks in China's overseas development lending, it is crucial for China to incorporate adequate risk mitigation measures into its project planning, approval and monitoring practices.

In July 2021, China's Ministry of Commerce (MOFCOM) and Ministry of Ecology and Environment (MEE) took a significant step forward in this regard, through their jointly issued "Green Development Guidelines for Foreign Investment and Cooperation" (Chen 2021). Among other recommendations, these guidelines encourage Chinese firms to not simply rely on host country environmental regulations (which had been the prior standard), but also to rely on international environmental standards and norms when host country regulations are absent, or below international standards. These guidelines are among the 32 policy documents identified in the CCICED study that can be used to guide the environmental performance of Chinese firms overseas (Zhou, Shi and Gallagher 2021).

While these policy documents each represent important steps in shaping environmental policy, they do not specify procedures for DFIs to incorporate into their project management processes. Zhou, Shi and Gallagher (2021) address the procedural aspect of environmental governance by researching the practices of international DFIs and the lessons these hold for Chinese DFIs. Specifically, Zhou, Shi and Gallagher (2021) examine the practices of eight multilateral and bilateral DFIs, with a particular focus on institutions based in Asia and developing countries. In addition to the global bodies of the World Bank (WB) and International Finance Corporation (IFC), the authors also included the experiences of the Asian Infrastructure Investment Bank (AIIB), the Asian Development Bank (ADB), the Development Bank of Latin America (CAF), the Development Bank of Southern Africa (DBSA), the Japan International Cooperation Agency (JICA) and the Japan Bank for International Cooperation (JBIC).

Zhou, Shi and Gallagher (2021) focus on three main stages for DFIs to incorporate environmental risk management: project planning ("upstream"), approval ("midstream") and monitoring ("downstream"). The first stage includes developing broad strategies and specific plans to generate projects that can meet stringent environmental standards and help borrowers and lenders alike achieve their long-term sustainability goals. The second stage includes the consideration of various environmental risks and benefits when DFIs consider project proposals. The last stage ensures accountability, through transparency and project supervision.

In the upstream stage, DFI risk management falls into three major areas. First, DFIs collaborate with borrower countries to identify broad strategies and specific possibilities for sustainable development projects. As Table 2 below shows, most DFIs studied by Zhou, Shi and Gallagher (2021) engage in this type of strategic collaboration. Secondly, DFIs offer technical assistance to develop project proposals that can meet stringent environmental standards. Nearly all of the studied DFIs provide this type of support. Finally, some DFIs also offer financial support to borrowers to prepare the studies and documentation necessary to propose these projects. While this type of assistance is the least common of the three forms of upstream engagement, it is widely available in some of the studied DFIs, including the ADB and DBSA.

Table 2: Development Finance Institutions Environmental Governance Practices During Project Planning

	Global DFIs		Regional DFIs			Bilateral DFIs		
	WB	IFC	ADB	AIIB	CAF	DBSA	JICA	JBIC
Strategic project identification support								
Country level	B	P	B	X	X	X	P	X
Sector level	B	B	B	B	B	B	P	P
Thematic level	B	B	B	N	B	B	X	X
Regional level	B	X	B	P	P	X	X	X
Technical project preparation support								
Direct support by staff	B	P	B	B	B	B	B	P
Indirect support through third parties	B	B	B	B	B	B	B	X
Financial project preparation support								
Grant support, general	B	X	B	B	B	B	B	X
Grant support, thematic	B	B	B	X	X	B	X	X
Grant support, company-specific	X	B	B	X	X	X	X	X
Facility, general	B	X	B	B	B	B	X	X
Facility, thematic	B	B	B	X	X	B	X	X
Facility, company-specific	X	B	X	X	X	X	X	X

Legend:

B **Broad** availability and use of this type of assistance

P **Partial** availability in certain sectors or themes, such as public transit or regional integration

X **Not available** to any significant extent

Source: Zhou, Shi and Gallagher (2021).

In the "midstream" stage, when considering specific project proposals, DFIs have developed a variety of practices to ensure that they have adequately considered and managed the environmental risks of the project at hand. Among the most common practices, shown in Table 3 below, assigning a broad risk category to project proposals at the start of the consideration phase to determine the level of scrutiny each one should receive, the use of "exclusion lists" to preclude consideration of particularly high-risk projects (either based on their sector or the previous performance of the firms involved), developing specific requirements to guide when projects can rely on the environmental standards of the borrowing country and when they should rely on international industry standards and the development of special types of consideration for particularly complex operations, such as lending to financial intermediaries that on-lend to multiple projects. While these "midstream" practices vary widely by DFI, all of the institutions have adopted at least some of these tools for environmental risk management. Of particular relevance is the use of "exclusion lists" as China joined the ranks of other development lenders (including the World Bank, ADB and JBIC) in September 2021 when it announced that it would cease building coal-fired power plants overseas, effectively enacting a public coal-based exclusion.

Table 3: Development Finance Institutions Environmental Governance Practices During Project Appraisal

	Global DFIs		Regional DFIs			Bilateral DFIs		
	WB	IFC	ADB	AIIB	CAF	DBSA	JICA	JBIC
Screening and risk categorization								
Application of risk/impact rating at project preparation stage (3 or 4 point scale)	P	P	P	P	X	P	P	P
Implementation-phase specific rating	P	P	X	X	X	X	X	X
Exclusion / divestment lists								
Corporate-level exclusion list/divestment commitment	P	P	P	P	P	P	X	X
Additional environmental and social exclusion lists	P	P	P	P	P	X	X	P
Use of country or industry standards								
Criteria and conditions for use of borrower standards	P	X	P	P	X	X	X	X
Reference to technical / industry standards	P	P	P	P	X	P	P	P
E&S Due Diligence Review: provisions for specific types of lending								
Financial intermediaries	P	P	P	P	P	P	P	X
Advisory services and/or technical assistance	P	P	X	X	X	P	P	X
Co-financing arrangements / common approach	P	X	P	P	P	X	X	X
Emergency lending	P	X	P	P	X	X	P	X
Projects to be defined during implementation (framework agreements, facilities, etc.)	P	X	P	P	X	P	X	X
Financial products other than loans and grants (equity, guarantees, etc.)	P	P	X	X	X	X	X	X

Legend:

P **Practiced** commonly

X **Not practiced** to any significant extent

Source: Zhou, Shi and Gallagher (2021).

Finally, the "downstream" stage is crucial for ensuring project performance meets initial promises, and to correct any missteps as early as possible. As Table 4 below shows, most of the DFIs studied by Zhou, Shi and Gallagher (2021) assist with transparency (either through disclosing their own documents or assisting with the disclosure of borrower-produced documents) to ensure that public expectations are broadly shared. Most DFIs also use third-party monitors during implementation to ensure expectations are met. Finally, nearly all of the DFIs in the study have developed independent accountability mechanisms to facilitate the resolution of any disputes related to the project's environmental performance.

Table 4: Development Finance Institution Environmental Governance Practices During Project Implementation

	Global		Regional			Bilateral		
	WB 2016	IFC 2012	ADB 2009	AIIB 2019	CAF 2015	DBSA 2020	JICA 2010	JBIC 2015
Disclosure requirements								
Disclosure of lender-produced documents - ongoing during implementation	P	P	X	P	X	X	P	P
Facilitation of disclosure of borrower-produced documents	P	P	P	P	X	P	P	X
Supervision and monitoring								
Use of independent / third party monitors	P	P	P	P	P	P	X	X
Lender determination of Broad Community Support / FPIC	P	P	P	P	X	P	X	X
Project completion provisions	P	X	P	P	P	P	X	X
Special provisions for highest risk / complex operations	X	P	X	P	X	P	X	X
Accountability mechanisms								
Independent accountability mechanism IAM	P	P	P	P	X	P	P	P

Legend:

P **Practiced** commonly

X **Not practiced** to any significant extent

Source: Zhou, Shi and Gallagher (2021).

By their nature, DFIs are not solely financial institutions, but also development institutions, acting for the improvement of community living conditions, economic development and diplomatic relations. A high-level environmental management system, when properly implemented, protects not only the ecosystems affected by economic activity, but also the communities and national economies that rely on those ecosystems. It is then unsurprising that most DFIs have incorporated these concerns into their environmental governance processes. Overall, Tables 2-4 above show a remarkable consensus regarding the components of such a high-level governance system. The most important elements include:

- Upstream collaboration with borrowers to develop "pipelines" of projects that further all parties' sustainability goals and meet stringent environmental standards
- Midstream consideration of project proposals' environmental risks through the use of risk classification categories and exclusion lists
- Downstream project accountability mechanisms through the use of information disclosure, monitoring and dispute resolution.

POLICY RECOMMENDATIONS TO MANAGE AND MITIGATE ENVIRONMENTAL RISK IN CHINA'S OVERSEAS DEVELOPMENT FINANCE

As Yang et al (2021) show, China's overseas development finance portfolio presents significant risks to ecosystems and the communities that rely on them in borrowing countries around the world. However, as recent announcements and guidelines from the Chinese government have shown, China is rapidly forming its environmental management strategy to mitigate those risks (Chen 2021; Xi 2021). The work of Zhou, Shi and Gallagher (2021) can provide insight for China's continued progress in this direction.

In the "upstream" stage, China is well positioned to adopt greater collaboration with other Belt and Road Initiative (BRI) countries to strategize and plan for environmentally sustainable development projects. As earlier work by Zhou, Shi and Gallagher (2020) explains, China's experience developing and deploying its own ecological conservation red line (ECRL) system is highly applicable to other BRI countries that may be interested in developing such a system, but lack the technical expertise. BRI signatory countries have signaled their interest in learning from China's environmental management experiences, through programs such as the Green Silk Road Envoys Program ("List of Deliverables" 2019).

To assist in both the "upstream" and "midstream" stages of project finance, China's policymakers can assist in the development of more sustainable projects by continuing to increase both the financial and technical support to project sponsors and host countries. Furthermore, the development of a "green taxonomy" can ensure all parties have common understandings of the relevant principles and standards.

Project sponsors and implementers have the ultimate responsibility to ensure a sustainable project stream in all stages, especially in the "downstream" stage of project implementation. Collaborating with Chinese and host-country governments in information disclosure and project monitoring can help ensure compliance problems are addressed before they pose serious risks.

To assist implementation across stages, the MEE developed and proposed a "whole process green assessment framework" for BRI projects, consisting of six steps:

- **Project announcement**, in which sponsors demonstrate that their expertise is sufficient to oversee the technical, as well as environmental, aspects of the project;
- **Investor examination**, wherein financial institutions assign an initial risk level and determine the level of pre-approval studies that must be performed;
- **Project assessment**, in which project sponsors carry out pre-investment studies;
- **Environmental policy review**, in which third-party evaluators determine the mitigation steps necessary for the risks identified in the pre-investment studies;
- **Contract writing**, wherein project sponsors commit to carrying out the steps identified during the environmental policy review stage; and
- **Monitoring during implementation**, wherein performance is ensured to meet commitment standards.

As this framework demonstrates, each actor in the project finance process has an important role to play to ensure the development and execution of sustainable development projects. If Chinese ministries like MOFCOM and MEE – who jointly issued the July 2021 Guidelines – and policy banks adapt this framework to their investment and lending approval processes, China can continue on its path toward a robust environmental management system for outbound finance.

REFERENCES

"List of Deliverables of the Second Belt and Road Forum for International Cooperation." Beijing, 27 April, 2019. http://www.beltandroadforum.org/english/n100/2019/0427/c36-1312.html.

Bai, Yang, Christina P. Wong, Bo Jiang, Alice C. Hughes, Min Wang and Qing Wang. 2018. "Developing China's Ecological Redlining Policy Using Ecosystem Services Assessments for Land Use Planning." *Nature Communications* 9, 3034. https://doi.org/10.1038/s41467-018-05306-1.

Bhattacharya, Amar, Kevin P. Gallagher, Miquel Múñoz Cabré, Minji Jeong and Xinyue Ma. 2019. *Aligning G20 Infrastructure Investment with Climate Goals and the 2030 Agenda*. Foundations 20: Report to the G20. https://www.foundations-20.org/wp-content/uploads/2019/06/F20-report-to-the-G20-2019_Infra-strucutre-Investment.pdf

Chen, Song. 2021. "Resolve to Green the Belt and Road." *China Daily*, 10 August. https://www.chinadaily.com.cn/a/202108/09/WS611066b4a310efa1bd667753.html.

Guo, Xudong, Qing Chang, Xiao Liu, Huimin Bao, Yuepeng Zhang, Xueying Tu, Chunxia Zhu, Chunyan Lv, and Yanyu Znang. 2018. "Multi-dimensional Eco-Land Classification and Management for Implementing the Ecological Redline Policy in China." *Land Use Policy* 74, 15-31. https://doi.org/10.1016/j.landusepol.2017.09.033.

Hou, Linglink, Fang Xia, Qihui Chen, Jikun Huang, Yong He, Nathan Rose, and Scott Rozelle. 2021. "Grassland ecological compensation policy in China improves grassland quality and increases herders' income." *Nature Communications* 12, 4683. https://doi.org/10.1038/s41467-021-24942-8.

Jiang, Bo, Yang Bai, Christina P. Wong, Xibao Xu and Juha M. Alatelo. 2019. "China's Ecological Civilization Program: Implementing Ecological Redlining Policy." *Land Use Policy* 81, 111-114. https://doi.org/10.1016/j.landusepol.2018.10.031.

Ray, Rebecca, Kevin P. Gallagher, William Kring, Joshua Pitts and B. Alexander Simmons. 2021. "Geolocated Dataset of Chinese Overseas Development Finance." *Scientific Data* 8, 241. https://doi.org/10.1038/s41597-021-01021-7.

UN General Assembly. 2015. "Resolution adopted by the General Assembly on 25 September 2015: 70/1. Transforming our world: the 2030 Agenda for Sustainable Development." New York: UNGA. https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E.

Xi Jinping. 2021. "Bolstering Confidence and Jointly Overcoming Difficulties to Build a Better World." United Nations General Assembly, 21 September, New York. https://estatements.unmeetings.org/estatements/10.0010/20210921/AT2JoAvm71nq/KaLk3d9ECB53_en.pdf.

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Yang, Hongbo, B. Alexander Simmons, Rebecca Ray, Christophe Nolte, Suchi Gopal, Yaxiong Ma, Xinyue Ma and Kevin P. Gallagher. 2021. "Risks to Global Biodiversity and Indigenous Lands from China's Overseas Development Finance." *Nature Ecology & Evolution.* https://doi.org/10.1038/s41559-021-01541-w.

Zhou, Guomei, Shi Yulong and Kevin P. Gallagher. 2020. "Green BRI and 2030 Agenda for Sustainable Development." China Council for International Cooperation on Environment and Development. https://cciced.eco/wp-content/uploads/2020/09/SPS-4-1-Green-BRI-and-2020-Agenda-for-Sustainable-Development.pdf.

Zhou, Guomei, Shi Yulong and Kevin P. Gallagher. 2021. "Green BRI and 2030 Agenda for Sustainable Development." China Council for International Cooperation on Environment and Development. https://cciced.eco/wp-content/uploads/2021/09/P020210929305532478894.pdf