



Task Force 6
Accelerating SDGs: Exploring New
Pathways to the 2030 Agenda



ALIGNING G20 INDUSTRIAL POLICIES WITH BIODIVERSITY CONSERVATION

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Abstract



Biodiversity conservation is a cross-cutting theme across all 17 of the United Nations Sustainable Development Goals (SDGs). Businesses can significantly augment global efforts to conserve biodiversity and abate biodiversity loss. Through targeted policy instruments, G20 countries can catalyse business engagement


in biodiversity conservation and also bring discipline to what could otherwise morph into an unbridled pile of symbolic corporate actions. This Policy Brief proposes five specific policies that can pave the way for businesses to make a meaningful contribution to global efforts for biodiversity conservation.



The Challenge



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Biodiversity loss is one of the most complex environmental challenges that the global community needs to address effectively in this crucial *Decade of Action*. About half a million species, ranging from large mammals to micro-organisms, are feared to disappear within the next few decades.¹ If not averted, this loss will be the “sixth mass extinction event in Earth’s history.”² It will escalate climate change, worsen food insecurity, increase risks to human health, and diminish means of livelihood for rural and Indigenous communities, many of whom live in acute poverty.³ It will


also significantly erode global gross domestic product (GDP), half of which is dependent on biodiversity to moderate or high degree.⁴ Given such pervasive and profound implications of biodiversity loss, biodiversity conservation has emerged as a cross-cutting theme across all 17 Sustainable Development Goals (SDGs). According to a 2023 United Nations Environment Programme (UNEP) report, our ability to progress on 35 of 44 SDG targets related to poverty, hunger, health, water, cities, climate, oceans and land, depends on maintaining healthy levels of biodiversity.⁵



The G20's Role

2






Numerous initiatives, from policy instruments to market-based incentives, have been launched to stem biodiversity loss but reversing biodiversity decline has so far been an uphill battle. The Kunming-Montreal Global Biodiversity Framework (GBF) adopted in December 2022 at the 15th meeting of the Conference of Parties (COP) to the UN Convention on Biological Diversity has indeed inspired hopes and aspirations by providing guidance to make future efforts more effective. In particular, the GBF emphasised sound mechanisms for monitoring, planning, mobilising resources, capacity building, information sharing, and enhancing global cooperation.⁶

Businesses have a crucial role in translating GBF goals and targets into actionable practices. This can be conceptualised in two ways.⁷ One possibility is to consider businesses as possessors of slack financial resources, a portion of which they could provide to conservation organisations to help bridge the daunting funding gap for biodiversity conservation, currently estimated at US\$ 700 billion annually. A second, and perhaps more important role that businesses could play in

facilitating the implementation of GBF is adopting biodiversity-friendly business practices and abandoning activities that could directly or indirectly harm biodiversity. This latter view is explicitly articulated in Target 15 of the GBF which calls for legal, administrative and policy measures to encourage and enable businesses (particularly, large and transnational companies and financial institutions) to help in conserving and enhancing biodiversity.

Business entities in the G20 countries that wield sizeable influence over business practices have the foremost responsibility to show leadership in devising biodiversity-friendly business practices. Our overarching recommendation is that biodiversity-friendly business practices be guided and governed through industrial policies, with market incentives serving only as complementary catalysts. This recommendation is based on a review of the voluminous literature on business sustainability, which shows that market-based incentives fail to engender transformative changes.⁸ The conclusion drawn from most studies is that at best, incentives facilitate the emergence of a handful of



companies as environmental leaders pursuing substantive actions, often encouraging merely symbolic actions and opportunistic behaviour. At worst, such incentives may even engender downright deception and corporate hypocrisy. Given the need for effective


and urgent action on biodiversity conservation, risking market failures is not a prudent pathway. Therefore, the recommendation is to create industrial policies that set high regulatory benchmarks and leave room for market-based initiatives.



Recommendations to the G20



3




The following paragraphs outline five policy instruments that G20 countries could adopt to foster meaningful business engagement in biodiversity conservation. These measures can enable conditions to fully harness the immense potential of businesses in abating biodiversity decline while ensuring that interests of vulnerable communities are well-protected.

i. Formulate favourable investment policies and curb biodiversity-harming subsidies

Enhancing biodiversity finance—i.e., expenditures that contribute to the conservation, sustainable use, and restoration of biodiversity from both public and private sources—is a pivotal need across the globe. The momentum of such voluntary investment is already building up, and investors and financial institutions now consider biodiversity loss a substantial investment risk.⁹ As such, biodiversity has become a prominent theme within the “E” component of the Environmental and Social Governance (ESG) investment funds.¹⁰ Similarly, improving biodiversity—either through

conservation or restoration—is increasingly becoming a performance parameter of capital market instruments such as impact funds, green bonds, social bonds, sustainability bonds, sustainability-linked bonds, green loans, and sustainability-linked loans.¹¹

Despite the growing attention of businesses in general, and the investment community in particular, biodiversity conservation is still largely—around 85 percent—financed from public sources. Private financing contributes only 15 percent.¹² This brief advances two policy recommendations for G20 countries to correct this imbalance. First, biodiversity finance instruments should be dovetailed with sustainable blue finance (investments in the ocean economy). The current focus of biodiversity finance is mainly on terrestrial ecosystems whilst the vast potential and opportunities in marine biodiversity remain largely untapped.¹³ Second, biodiversity finance should be monitored and regulated through a global classification system that would help develop a shared understanding of terms and terms of reference. The European Union’s (EU) classification system for sustainable activities, known as the EU taxonomy, could be




a valuable template for the creation of such a system at the global level. It would harmonise disparate practices, measures, and guiding philosophies relating to biodiversity conservation. Apart from these, a third pathway to increase capital flows for biodiversity conservation could be through corporate social responsibility (CSR) expenditures, particularly in countries (e.g., India) with a regulatory framework to guide CSR expenditures.

According to the UNEP's *State of Finance for Nature (2022)* report, government expenditures on environmentally harmful subsidies are three to seven times higher than public and private investments that protect and enhance nature.¹⁴ Subsidies given to several industries, including but not limited to fossil fuels, agriculture, fisheries, and forestry, together drive practices that harm biodiversity.^{15,16,17} The GBF calls for reversing this, and urges governments to “identify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity, in a proportionate, just, fair, effective and equitable way.”¹⁸ This aspiration is visibly disconnected from the current reality: only seven countries around the globe have made

efforts to identify negative subsidies.¹⁹ It is recommended that G20 countries show leadership in identifying and eliminating biodiversity-harming/perverse subsidies, and in the process, develop novel financial mechanisms that are sensitive to the need for socio-economic development.

ii. Regulate selection of sites for manufacturing and infrastructure development

To incentivise businesses to invest in more effective measures of biodiversity conservation, governments must consider regulating the selection of sites for manufacturing and infrastructure development more strictly to protect areas critically important from a biodiversity perspective. The established method of High Conservation Value (HCV) should be scaled up and implemented. The HCV approach identifies conservation value based on six categories: species diversity, landscape level ecosystems, ecosystem and habitats, ecosystem services, community needs, and cultural values.²⁰ While this approach is already applied widely and toolkits have been developed, especially for forestry and agriculture, there are still many discrepancies in the way it is applied



across countries and industries. There is still wide variety in the types of data, indicators, and models used to assess an area's conservation value. A more harmonised approach to using the HCV method to regulate manufacturing site selection is needed.²¹

HCV, being based on scientific criteria, calls for collection of data. It requires businesses to make costly investments in data collection before choosing a site, which also takes considerable time.²² There is the risk that businesses will shy away from applying sophisticated HCV assessment methods if they consider them too costly. Emerging methods for remote sensing and spatial analysis could prove to be more cost-effective for conducting HCV analysis.²³ Governments should not only roll out requirements for HCV assessment but also invest in improving the underlying assessment methods and in supporting businesses, particularly micro, small, and medium enterprises (MSMEs), which often cannot afford sophisticated and expensive HCV toolkits.

iii. Mandate value-chain level disclosures about business dependencies and impacts on biodiversity

G20 countries must consider regulatory mandates requiring businesses to assess and report their dependencies and impacts on biodiversity. Many large companies are already calling for regulatory requirements. For example, more than 300 businesses sent an open letter to heads of state before the COP15 meeting urging them to make assessment and disclosure on nature mandatory. Many private sector organisations and alliances such as the Natural Capital Protocol, the Science-Based Targets Network (SBTN), the Taskforce on Nature-related Financial Disclosures (TNFD), and the World Business Council for Sustainable Development (WBCSD) have made notable progress in developing guidance, tools and methodologies to ensure sustainable business practices. Many of these will be available in the marketplace within the next year or so. A regulatory requirement will create a competitive marketplace for biodiversity assessment and reporting as these and other agencies would compete to establish better, more credible and user-friendly processes and standards for evaluation and reporting.

It is also recommended that any regulatory edict defines *impact* at the value-chain level rather than at the company level. Impact assessment and reporting must involve the aggregate impact of all business operations—from raw material procurement to end-of-life disposal—on biodiversity. This was considered at a 2019 technical workshop on biodiversity accounting approaches for business organised by the European Business@Biodiversity Platform and the UN Environment World Conservation Monitoring Centre. At the meeting, many participants raised concerns about the complexities in value-chain level assessments (EC 2019), although provisions for value-chain level biodiversity impact assessments are included in the Natural Capital Protocol and the Global Biodiversity Score matrix.

iv. Promote Industry 4.0 applications for biodiversity conservation

Biodiversity conservation measures can be made more effective by leveraging a broad suite of Industry 4.0 technologies, particularly artificial intelligence (AI).²⁴ A PWC report (2018) explicitly articulates and provides examples of the use of AI in biodiversity conservation in the

following five areas: sustainable trade (e.g., through supply-chain monitoring and origin tracking, and detection of illegal animal-based trade); pollution control (e.g., through pollutant dispersal prediction and tracking); invasive species and diseases control (e.g., through machine-automated biodiversity analysis); realising natural capital (e.g., through registering and trading of biological and biomimetic assets)²⁵ and habitat protection and restoration (e.g., through precision monitoring of the ecosystem, simulation of animal and habitat interactions, micro drones for pollination, and others).²⁵ Similarly, machine learning could be helpful in biodiversity conservation by improving research output and resulting changes in practices.²⁶

The use of Industry 4.0 for biodiversity conservation can also unleash novel economic opportunities. For example, Oldham et al. (2013) show that currently, the global patent system covers only about 4 percent of all taxonomically described global species, leaving the majority of natural assets outside the purview of formal patent systems.²⁷ Application of Industry 4.0 could enable identifying, classifying and patenting of these species, which in turn can



help advance the biotechnology and biomedicine sectors. The application of Industry 4.0, particularly AI and robotics, in biodiversity conservation could also reveal many natural processes hitherto hidden to humans, which could inspire a new genre of bio-based innovations leading to smart materials, material structures, energy generation, and pollution remediation.²⁸ Multilateral development banks can play a vital role in funding Industry 4.0-based biodiversity-friendly ventures and promote entrepreneurial ecosystems in developing countries.²⁹

v. Ensure inclusivity and community benefits

While there is global consensus that biodiversity conservation is a 21st-century imperative, there is little agreement about how to go about it.³⁰ Some advocate a ‘people-free’ view of conservation, with little to no consideration of its implications on people and communities. Others view biodiversity conservation essentially as a ‘social enterprise’,³¹ which must result from implicit and explicit negotiations among a range of stakeholders. From the latter perspective, biodiversity conservation is a socially and politically

negotiated process influenced not only by core intended outcomes but also by intertwined issues, which include – but are not limited to – community livelihood, poverty alleviation, and social justice.³²


To prevent the differences between these two schools of thought from hampering business action on biodiversity conservation, governments should give clear directives to businesses to place central importance on safeguarding and enhancing community interests in biodiversity conservation efforts. It is not simply as a matter of moral mooring but also of pragmatic necessity. A significant proportion of the world’s biodiversity resides in areas owned or governed by local and indigenous communities that derive multiple benefits from their lands.³³ Without fully and meaningfully engaging local and indigenous communities in biodiversity conservation initiatives, businesses are unlikely to progress towards achievable biodiversity targets. Further, without regulatory stipulations, they will lack direction in engaging with local and indigenous communities, understanding their needs, and tailoring their conservation efforts to those needs.



Conclusion

4






Biodiversity conservation is a complex and multifaceted challenge that must be addressed urgently. There is significant momentum in the private sector to mainstream market-based initiatives to spur business engagement in biodiversity conservation. However, unbridled expansion of purely market-based initiatives runs the risk of promoting symbolic actions which neither conserve biodiversity nor consider the human factor. Instead, business engagement in biodiversity conservation should be governed through industrial policies that will be closely monitored and regularly reviewed.

The G20, as a group of leading global economies, holds significant influence over industrial activities and can lead by example in promoting industrial policies that conserve biodiversity while fostering economic development, leverages advanced manufacturing technologies, mobilises sustainable finance, and places rural, Indigenous and marginalised communities at the centre. G20 countries should develop a mechanism to share best practices and collectively explore ways to catalyse business engagement in biodiversity conservation.

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Endnotes

- 1 Jurriaan M. De Vos et al., “Estimating the Normal Background Rate of Species Extinction,” *Conservation Biology* 29, no. 2 (2015): 452–62.
- 2 Elaine Baker, John Crump, and Peter Harris, “Global Environment Outlook (GEO-6): Healthy Planet, Healthy People,” 2019.
- 3 Rajat Panwar, Holly Ober, and Jonatan Pinkse, “The Uncomfortable Relationship between Business and Biodiversity: Advancing Research on Business Strategies for Biodiversity Protection,” *Business Strategy and the Environment*, 2022.
- 4 Partha Dasgupta, *The Economics of Biodiversity: The Dasgupta Review*. (Hm Treasury, 2021).
- 5 UNEP, “Facts about the Nature Crisis,” UNEP - UN Environment Programme, July 7, 2022, <http://www.unep.org/facts-about-nature-crisis>. UNEP - UN Environment Programme, July 7, 2022, <http://www.unep.org/facts-about-nature-crisis>.”,”plainCitation”:”UNEP, “Facts about the Nature Crisis,” UNEP - UN Environment Programme, July 7, 2022, <http://www.unep.org/facts-about-nature-crisis>.”,”noteIndex”:5},”citationItems”:[{“id”:4931,”uris”:[“http://zotero.org/users/3454427/items/H2J7T37F”],”itemData”:{“id”:4931,”type”.”webpage”,”abstract”.”We are experiencing a dangerous decline in nature and humans are causing it:\n\nWe are using the equivalent of 1.6 Earths to maintain our current way of life and ecosystems cannot keep up with our demands. (Becoming Generation Restoration, UNEP
- 6 “COP15: Final Text of Kunming-Montreal Global Biodiversity Framework,” 2022, <https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222>
- 7 Rajat Panwar, “Business and Biodiversity: Achieving the 2050 Vision for Biodiversity Conservation through Transformative Business Practices,” *Biodiversity and Conservation*, 2023, 1–7.
- 8 Michael L. Barnett et al., “Reorient the Business Case for Corporate Sustainability,” *Stanford Social Innovation Review*, no. Summer issue (2021): 35–39.
- 9 Pamela McElwee et al., “Ensuring a Post-COVID Economic Agenda Tackles Global Biodiversity Loss,” *One Earth* 3, no. 4 (2020): 448–61.
- 10 “Biodiversity Quickly Rises up the ESG Investing Agenda | Financial Times,” accessed April 1, 2023, <https://www.ft.com/content/abbcec95-0154-40cd-83b9-d988bd3271b9>.
- 11 E.g., Benjamin S. Thompson, “Impact Investing in Biodiversity Conservation with Bonds: An Analysis of Financial and Environmental Risk,” *Business Strategy and the Environment* 32, no. 1 (2023): 353–68.
- 12 OECD, “A Comprehensive Overview of Global Biodiversity Finance,” 2020.
- 13 OECD, “A Comprehensive Overview of Global Biodiversity Finance.”

- 
- 14 “State of Finance for Nature,” 2002, https://wedocs.unep.org/bitstream/handle/20.500.11822/41333/state_finance_nature.pdf?sequence=3
 - 15 Robert Heilmayr, Cristian Echeverría, and Eric F. Lambin, “Impacts of Chilean Forest Subsidies on Forest Cover, Carbon and Biodiversity,” *Nature Sustainability* 3, no. 9 (2020): 701–9.
 - 16 Jessica Dempsey, Tara G. Martin, and U. Rashid Sumaila, “Subsidizing Extinction?,” *Conservation Letters* 13, no. 1 (2020): e12705.
 - 17 Andrea Perino et al., “Biodiversity Post-2020: Closing the Gap between Global Targets and National-Level Implementation,” *Conservation Letters* 15, no. 2 (2022): e12848.
 - 18 “COP15: Final Text of Kunming-Montreal Global Biodiversity Framework,” 2022, <https://www.cbd.int/article/cop15-final-text-kunming-montreal-gbf-221222>
 - 19 CBD, “Resource Mobilization: Progress in Achieving the Milestones for the Full Implementation of Aichi Biodiversity Target 3,” 2018, <https://www.cbd.int/doc/c/4739/bf39/3bc327463c5ceec4b8f0cc8b/sbi-02-inf-15-en.docx>.
 - 20 G. Areendran et al., “A Systematic Review on High Conservation Value Assessment (HCVs): Challenges and Framework for Future Research on Conservation Strategy,” *Science of the Total Environment* 709 (2020): 135425; Alison R. Styring et al., “Determining High Conservation Values in Production Landscapes: Biodiversity and Assessment Approaches,” *Frontiers in Environmental Science*, 2022, 1012.
 - 21 Areendran et al., “A Systematic Review on High Conservation Value Assessment (HCVs).”
 - 22 Siti Halimah Larekeng et al., “A Diversity Index Model Based on Spatial Analysis to Estimate High Conservation Value in a Mining Area,” *Forest and Society* 6, no. 1 (2022): 142–56.
 - 23 Styring et al., “Determining High Conservation Values in Production Landscapes.”
 - 24 Daniele Silvestro et al., “Improving Biodiversity Protection through Artificial Intelligence,” *Nature Sustainability* 5, no. 5 (2022): 415–24.
 - 25 PWC, “Fourth Industrial Revolution for the Earth,” 2018.
 - 26 Devis Tuia et al., “Perspectives in Machine Learning for Wildlife Conservation,” *Nature Communications* 13, no. 1 (2022): 792.
 - 27 Paul Oldham, Stephen Hall, and Oscar Forero, “Biological Diversity in the Patent System,” *PloS One* 8, no. 11 (2013): e78737.
 - 28 WEF, “Harnessing the Fourth Industrial Revolution for Life on Land.”
 - 29 Carolina Dams, Virginia Sarria Allende, and María José Murcia, “Multilateral Development Banks: Understanding Their Impact on Start-up Development in Latin America,” *European Business Review* 33, no. 6 (2021): 942–56.
 - 30 Derek Armitage et al., “Governance Principles for Community-Centered Conservation in the Post-2020 Global Biodiversity Framework,” *Conservation Science and Practice* 2, no. 2 (2020): e160.

- 
- 31 Steven R. Brechin et al., *Contested Nature: Promoting International Biodiversity with Social Justice in the Twenty-First Century* (Albany, NY: State University of New York Press, 2003).
 - 32 Dan Brockington, Jim Igoe, and Kai Schmidt-Soltau, “Conservation, Human Rights, and Poverty Reduction,” *Conservation Biology* 20, no. 1 (2006): 250–52.
 - 33 Stephen T. Garnett et al., “A Spatial Overview of the Global Importance of Indigenous Lands for Conservation,” *Nature Sustainability* 1, no. 7 (2018): 369–74.



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