Received: 27 January 2022 | Revised: 13 October 2022 | Accepted: 13 October 2022

DOI: 10.1111/1758-5899.13158

POLICY INSIGHTS

Finding synergies and trade-offs when linking biodiversity and climate change through cooperative initiatives

Oscar Widerberg[1] | **Idil Boran**[2,3,4,5] | **Sander Chan**[5,6,7] | **Andrew Deneault**[5] | **Marcel Kok**[8] | **Katarzyna Negacz**[1] | **Philipp Pattberg**[1] | **Matilda Petersson**[9]

[1]Institute for Environmental Studies (IVM), Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

[2]Department of Philosophy, Faculty of Liberal Arts and Professional Studies, York University, Toronto, Ontario, Canada

[3]Dahdaleh Institute for Global Health Research, York University, Toronto, Ontario, Canada

[4]CIFAL York, York University, Toronto, Canada

[5]German Institute of Development and Sustainability (IDOS), Bonn, Germany

[6]Department of Geography, Planning and Environment, Nijmegen School of Management, Radboud University, Nijmegen, The Netherlands

[7]Copernicus Institute of Sustainable Development, Utrecht University, Utrecht, The Netherlands

[8]PBL Netherlands Environmental Assessment Agency, The Hague, The Netherlands

[9]Department of Economic History and International Relations, Stockholm University, Stockholm, Sweden

Correspondence
Oscar Widerberg, Institute for Environmental Studies (IVM), Vrije Universiteit Amsterdam, Amsterdam, The Netherlands.
Email: oscar.widerberg@vu.nl

Abstract

The causes and consequences of biodiversity loss and climate change are deeply intertwined. Hundreds of existing cooperative initiatives—gathering thousands of states, regions, cities, companies, civil society organisations and communities—are potentially bending the curve on biodiversity loss and tackling climate change simultaneously. More research is needed to understand if, how and under what conditions cooperative initiatives are delivering on their promises and importantly how they can contribute to both 'biodiversity positive outcomes' and 'net-zero emissions' at the same time.

A workshop report from the first ever collaboration between the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and the Intergovernmental Panel on Climate Change (IPCC) laments the 'functional separation' between the international conventions and the intergovernmental bodies set up to address biodiversity loss and climate change, and the distinct research communities studying these sustainability challenges. The IPBES-IPCC cosponsored workshop report suggests that 'In the worst case it [the functional separation] may lead to taking actions that inadvertently prevent the solution of one or the other, or both issues' (Pörtner et al., 2021, p. 4). 'Existing governance systems', the authors continue, 'often lack effective mechanisms to improve integration between biodiversity and climate national to subnational scales' (2021, p. 22).

The key governance question that emanates from the IPBES-IPCC cosponsored workshop report is: how to link biodiversity and climate governance across scales to foster synergies and mitigate trade-offs (see also Deprez et al., 2021; Madruga, 2021; Rockström et al., 2021). An important part of the answer, we argue, may be found in hundreds of existing cooperative initiatives, where thousands of states, regions, cities, companies, civil society organisations and other nonstate and subnational actors are reshaping global biodiversity and climate change governance beyond the confines of UN negotiation rooms (see e.g. Hsu et al., 2018; Pattberg et al., 2019). Sometimes referred to as

'multistakeholder partnerships', 'clubs' or 'experiments', many of these initiatives aim to create co-benefits for halting biodiversity loss and for mitigating and adapting to climate change (Andonova, 2010; Hoffman, 2011; Widerberg & Engström Stenson, 2013). The research challenge is to identify, understand and help harness the potential for cooperative initiatives to restore nature and address climate change simultaneously.

1 | THE PROMISES AND PERILS OF COOPERATIVE INITIATIVES FOR LINKING GOVERNANCE OF BIODIVERSITY LOSS AND CLIMATE CHANGE

Nonstate and subnational actors are increasingly integrated into the existing institutional fabrics of the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD) as part of the post-2020 Global Biodiversity Framework under negotiation, and thereby becoming integral to the global responses to biodiversity loss and climate change (Hale, 2016; Kok & Ludwig, 2021; Pattberg et al., 2019). Proponents of more nonstate and subnational involvement in implementing the goals of the CBD and the UNFCCC typically point to the promises of cooperative initiatives, proposing that they can: improve effectiveness by expanding experimentation, trust building and innovation; improve legitimacy by including a broader set of actors; improve evidence-based decision-making by enhancing data collection, synthesis and communication; improve accountability mechanisms by becoming norm champions; and improve the ambition level of international goals and targets by creating pressure from the 'bottom–up' (Bäckstrand, 2006; Chan et al., 2015, 2019; Ostrom, 2012). Critics instead emphasise the potential perils of allowing nonstate and subnational actors more space to gain influence. Companies may engage in green- and blue-washing with little impact on the ground; existing power disparities and inequality may be entrenched as organisations in the Global North dominate cooperative initiatives; monitoring and reporting is difficult because of the heterogeneity of actors, goals and initiatives, as well as limited reliable data; and the legitimacy of existing international processes may be contested as states can choose among arenas to pursue their interests (Chan et al., 2019; Eckersley, 2012; Hsu et al., 2019).

A good illustration of both promises and perils of cooperative initiatives are the Bonn Challenge and the New York Declaration on Forests. Aiming to bring 350 million hectares of degraded and deforested landscapes into restoration by 2030, the Bonn Challenge embraces the forest land restoration (FLR) approach which, according to Mansourian (2016), is presented 'as a solution to the world's deforestation and degradation problems, as well as for climate change mitigation and adaptation, for supporting poor rural communities, and for water and soil protection'. Forest land restoration could improve effectiveness to both the protection of biodiversity and the mitigation and adaptation of climate change by taking an inclusive approach, involving local stakeholders (Aronson & Alexander, 2013). A study by Data Driven Yale, NewClimate Institute, PBL (2018) estimates that the Bonn Challenge and the New York Declaration on Forests could deliver 1.6–3.4 gigatonnes of CO_2-equivalent of emission reduction per year in 2030, approximately double the CO_2-equivalent emissions of Germany in 2019. However, the Bonn Challenge and FLR have also been criticised for emphasising quantitative headline targets above quality; promoting carbon sequestration over ecological integrity; and paying insufficient attention to local stakeholders and livelihoods (e.g. Mansourian et al., 2017; Stanturf et al., 2019). Another example illustrating the promises and perils of cooperative initiatives is the '4 per 1000' initiative. It focuses on connecting climate mitigation with agricultural practices, soil quality in particular, arguing that healthy soils in terms of organic matter can help sequester carbon in the same way that forests do (Chabbi et al., 2017). Observers have noted, however, that the 4 per 1000 initiative comes with a host of possible perils related to political, social and institutional problems (e.g. land-tenure and human rights), causing some civil society organisations to consider the initiative greenwashing in favour of already dominant actors and technologies (Aubert et al., 2017; Aubert et al., 2020). Both the Bonn Challenge and the 4 per 1000 initiative demonstrate the often-complex political processes that cooperative initiatives must go through to gain political traction and build legitimacy to fulfil their promises.

2 | MOVING GOVERNANCE RESEARCH AND PRACTICE OF LINKING CLIMATE AND BIODIVERSITY FORWARDS

Recent mapping projects suggest that the Bonn Challenge and the 4 per 1000 initiatives are but two out of hundreds of cooperative initiatives linking biodiversity and climate change, and that nonstate and subnational actors and collaborations offer rich material for understanding the biodiversity–climate nexus. For example, the Bio* project—a collaboration between the Institute for Environmental Studies (IVM) and the Dutch Environmental Assessment Agency (PBL)—has identified 194 cooperative initiatives (out of a database consisting of 407 initiatives working on biodiversity) that focus on the intersection between biodiversity and climate (Negacz et al., 2020). Another project,

the Climate Cooperative Initiatives Database (C-CID) project—maintained by researchers from the German Institute of Development and Sustainability (IDOS), York University, and the Global Center for Adaptation (GCA)—features approximately 300 initiatives focusing on climate action, of which approximately 100 can be identified as 'nature-based climate actions' that seek to simultaneously contribute to biodiversity and climate governance. Both databases demonstrate the dense landscape of cooperative initiatives in both climate and biodiversity governance that have arisen 'beyond' the auspices of the international conventions of the United Nations, providing a rich starting point for research into how biodiversity and climate change are combined in practice and to what effects.

We argue that improving the understanding of how cooperative initiatives deal with synergies and trade-offs between enhancing biodiversity while mitigating and adapting to climate change requires future research to focus on mapping, assessment and communication. First, despite the enormous potential in linking biodiversity and climate change through cooperative initiatives, there is to our knowledge little systematic monitoring, reporting and verification of their impacts (but see e.g. Visseren-Hamakers et al., 2011). So, researchers must continue to map new and ongoing cooperative initiatives to understand their effects on biodiversity, climate change and resilience to environmental change. Such mappings should demonstrate connections between biodiversity and climate change with existing initiatives, and thereby reveal potential synergies and trade-offs. Second, taking the IPBES-IPCC cosponsored workshop report as a starting point, researchers could operationalise and assess the potential connections between biodiversity and climate change, to determine under which conditions cooperative initiatives have a synergic and catalytic potential, for instance through learning, scaling and expansion over time (van der Ven et al., 2016). Third, communicating with and informing stakeholders of the promises and perils of cooperative initiatives in biodiversity are needed to support decision makers in understanding how to allocate resources and political capital as well as how to build new and enhance existing institutions to maximise the benefits of cooperation across scales and a broader range of stakeholders. Finally, international governance can play a supportive role by enhancing the action agendas of existing and emerging nonstate and subnational actors within the UNFCCC, CBD, oceans governance and SDGs. Such platforms could be brought together within the multilateral system without creating additional burdens for nonstate and subnational actors and contributing to an effective and ambitious agenda for climate and biodiversity.

To realise this research agenda, a broad coalition of interested parties is needed. Much headway can be gained by synthesising existing knowledge and data, looking at information through the lens of the biodiversity–climate nexus, combining biophysical, geospatial, socioeconomic and governance data. The CDP (previously the Carbon Disclosure Project), for instance, collects data on how hundreds of companies engage in climate change, forest protection and water security. Such data providers are pivotal to identifying key players, opportunities and gaps in addressing climate change and biodiversity loss simultaneously. Interdisciplinary research teams are needed to identify data and information needs and join forces with existing nonstate and subnational actors to understand each other's needs, build trust and develop common priorities to address interrelated sustainability challenges.

In sum, cooperative initiatives are potential vehicles for addressing climate change and biodiversity loss simultaneously. Only a broad research effort could answer the question, how and under what conditions cooperative initiatives could harness their potential.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

ORCID

Oscar Widerberg https://orcid.org/0000-0002-8088-3709
Idil Boran https://orcid.org/0000-0001-6832-152X
Sander Chan https://orcid.org/0000-0001-7852-3838
Andrew Deneault https://orcid.org/0000-0003-4223-6196
Marcel Kok https://orcid.org/0000-0003-1332-8040
Katarzyna Negacz https://orcid.org/0000-0002-6817-5259
Philipp Pattberg https://orcid.org/0000-0003-1136-7791
Matilda Petersson https://orcid.org/0000-0002-3273-9390

REFERENCES

Andonova, L.B. (2010) Public-private partnerships for the earth: politics and patterns of hybrid Authority in the Multilateral System. *Global Environmental Politics*, 10, 25–53.

Aronson, J. & Alexander, S. (2013) Steering towards sustainability requires more ecological restoration. *Natureza & Conservação*, 11, 127–137.

Aubert, P.-M., Ruat, R., Treyer, S. & Rankovic, A. (2020) Holding the ground. Alliances and defiances between scientists, policy-makers and civil society in the development of a voluntary initiative, the "4 per 1000: soils for food security and climate." Environmental Science & Policy, into the fray. *Strategic Perspectives on Biodiversity Sciences and Politics*, 113, 80–87. Available from: https://doi.org/10.1016/j.envsci.2020.06.008

Aubert, P.-M., Treyer, S., Sablé, A.-L., Apollin, F., Mathieu, B., Levard, L. et al. (2017) *Implementing the "4 per 1000" initiative: contribution for the establishment of a reference/normative framework*. IDDRI Policy Brief.

Bäckstrand, K. (2006) Multi-stakeholder partnerships for sustainable development: rethinking legitimacy, accountability and effectiveness. *European Environment*, 16, 290–306.

Chabbi, A., Lehmann, J., Ciais, P., Loescher, H.W., Cotrufo, M.F., Don, A. et al. (2017) Aligning agriculture and climate policy.

Nature Climate Change, 7, 307–309. Available from: https://doi.org/10.1038/nclimate3286

Chan, S., Boran, I., van Asselt, H., Iacobuta, G., Niles, N., Rietig, K. et al. (2019) Promises and risks of nonstate action in climate and sustainability governance. *Wiley Interdisciplinary Reviews: Climate Change*, 10, e572. Available from: https://doi.org/10.1002/wcc.572

Chan, S., van Asselt, H., Hale, T.N., Abbott, K.W., Beisheim, M., Hoffmann, M. et al. (2015) Reinvigorating international climate policy: a comprehensive framework for effective nonstate action. *Global Policy*, 6, 466–473.

Data Driven Yale, NewClimate Institute, PBL. (2018) *Global climate action of regions, states and businesses*. (Published by Data Driven Yale, NewClimate Institute, PBL Netherlands Environmental Assessment Agency).

Deprez, A., Rankovic, A., Landry, J., Treyer, S., Vallejo, L. & Waisman, H. (2021) *Aligning high climate and biodiversity ambitions in 2021 and beyond: why, what, and how? (No. 5)*. Paris, France: IDDRI.

Eckersley, R. (2012) Moving forward in the climate negotiations: multilateralism or Minilateralism? *Global Environmental Politics*, 12, 24–42. Available from: https://doi.org/10.1162/GLEP_a_00107

Hale, T.N. (2016) "All hands on deck": the Paris agreement and nonstate climate action. *Global Environmental Politics*, 16, 12–22. Available from: https://doi.org/10.1162/GLEP_a_00362

Hoffman, M.J. (2011) *Climate governance at the crossroads: experimenting with a global response after Kyoto: experimenting with a global response after Kyoto*. New York, NY: Oxford University Press.

Hsu, A., Höhne, N., Kuramochi, T., Roelfsema, M., Weinfurter, A., Xie, Y. et al. (2019) A research roadmap for quantifying nonstate and subnational climate mitigation action. *Nature Climate Change*, 9, 11–17. Available from: https://doi.org/10.1038/s41558-018-0338-z

Hsu, A., Widerberg, O., Weinfurter, A., Roelfsema, M., Chan, S., Luthekemoller, K. et al. (2018) *Bridging the emissions gap – the role of nonstate and subnational actors*. (In the emissions gap report 2018.), a UN environment synthesis report. United Nations Environment Programme (UNEP), Nairobi, Kenya.

Kok, M.T.J. & Ludwig, K. (2021) Understanding international nonstate and subnational actors for biodiversity and their possible contributions to the post-2020 CBD global biodiversity framework: insights from six international cooperative initiatives. *International Environmental Agreements: Politics, Law and Economics*, 22, 1–25. Available from: https://doi.org/10.1007/s10784-021-09547-2

Madruga, R.P. (2021) Linking climate and biodiversity. *Science*, 374, 511. Available from: https://doi.org/10.1126/science.abm8739

Mansourian, S. (2016) Understanding the relationship between governance and forest landscape restoration. *Conservation and Society*, 14, 267–278.

Mansourian, S., Stanturf, J.A., Derkyi, M.A.A. & Engel, V.L. (2017) Forest landscape restoration: increasing the positive impacts of forest restoration or simply the area under tree cover? *Restoration Ecology*, 25, 178–183. Available from: https://doi.org/10.1111/rec.12489

Negacz, K.E., Widerberg, O.E., Kok, M. & Pattberg, P.H. (2020) *BioSTAR: landscape of international and transnational cooperative initiatives for biodiversity: mapping international and transnational cooperative initiatives for biodiversity (No. R-20/02)*. Amsterdam: IVM Institute for Environmental Studies.

Ostrom, E. (2012) Nested externalities and polycentric institutions: must we wait for global solutions to climate change before taking actions at other scales? *Economic Theory*, 49, 353–369.

Pattberg, P., Widerberg, O. & Kok, M.T.J. (2019) Towards a global biodiversity action agenda. *Global Policy*, 10, 385–390. Available from: https://doi.org/10.1111/1758-5899.12669

Pörtner, H.O., Scholes, R.J., Agard, J., Archer, E., Arneth, A., Bai, X. et al. (2021) IPBES-IPCC co-sponsored workshop report on biodiversity and climate change. IPBES and IPCC.

Rockström, J., Beringer, T., Hole, D., Griscom, B., Mascia, M.B., Folke, C. et al. (2021) Opinion: we need biosphere stewardship that protects carbon sinks and builds resilience. *PNAS*, 118(38), e2115218118. Available from: https://doi.org/10.1073/pnas.2115218118

Stanturf, J.A., Kleine, M., Mansourian, S., Parrotta, J., Madsen, P., Kant, P. et al. (2019) Implementing forest landscape restoration under the Bonn challenge: a systematic approach. *Annals of Forest Science*, 76, 50. Available from: https://doi.org/10.1007/s13595-019-0833-z

van der Ven, H., Bernstein, S. & Hoffmann, M. (2016) Valuing the contributions of nonstate and subnational actors to climate governance. *Global Environmental Politics*, 17, 1–20. Available from: https://doi.org/10.1162/GLEP_a_00387

Visseren-Hamakers, I.J., Arts, B. & Glasbergen, P. (2011) Interaction management by partnerships: the case of biodiversity and climate change. *Global Environmental Politics*, 11, 89–107. Available from: https://doi.org/10.1162/GLEP_a_00085

Widerberg, O. & Engström Stenson, D. (2013) *Climate clubs and the UNFCCC: complement, bypass or conflict? (FORES study 2013:3)*. Stockholm: FORES.

AUTHOR BIOGRAPHIES

Oscar Widerberg is Associate Professor in Environmental Politics and Policy at IVM. He researches the causes and consequences of transnational sustainability governance, focusing on climate change, biodiversity and the SDGs.

Idil Boran (PhD) is associate professor of philosophy and faculty fellow at the Dahdaleh Institute for Global Health Research at York University (Canada), and also serves as associate director of CIFAL York, a UN-affiliated leadership training centre. She specialises in transdisciplinary research and outreach on climate, nature and health interlinkages.

Sander Chan (PhD) is a global environmental governance scholar. His research includes the investigation of transboundary state and nonstate cooperation in sustainable development and climate change politics. He also investigates local contexts for sustainability governance approaches, particularly in developing and emerging economies.

Andrew Deneault is a global environmental governance researcher. Areas of focus include transnational action for climate, nature and health; strengthening climate governance in the global South; and climate action in cities.

Marcel Kok is programme leader international biodiversity policy. His research includes solution-oriented scenario analysis for global environmental problems, transformative change and nonstate action for biodiversity.

Katarzyna Negacz is a researcher at the Environmental Policy Analysis Department of the Institute for Environmental Studies (IVM) at Vrije Universiteit Amsterdam. Her research interests focus on environmental governance, in particular biodiversity governance and sustainable food systems.

Philipp Pattberg (PhD) is professor of transnational environmental governance and policy at Vrije Universiteit Amsterdam. He heads the department of environmental policy analysis at the faculty of science and is director of the inter-faculty Amsterdam Sustainability Institute.

Matilda Petersson is a postdoctoral researcher at the Department of Economic History and International Relations at Stockholm University. Her research investigates the role and consequences of nonstate actor participation in global environmental governance, with a particular focus on fisheries and biodiversity.

How to cite this article: Widerberg, O., Boran, I., Chan, S., Deneault, A., Kok, M. & Negacz, K. et al. (2023) Finding synergies and trade-offs when linking biodiversity and climate change through cooperative initiatives. *Global Policy*, 14, 157–161. Available from: https://doi.org/10.1111/1758-5899.13158