

# POLICYBRIEF

No. 45, 2024

# Bridging Science and Policy for Integrated Action on Climate and Biodiversity

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## Highlights

Climate change and biodiversity are both recognized as crucial priorities for global action. There is a strong political effort to enhance synergies and minimize trade-offs between these two agendas. This requires bridging the science-policy gap by leveraging existing institutional infrastructure and governance mechanisms. It has the potential to deliver multiple benefits for climate mitigation and adaptation, ecological security and achieving the SDGs.

### Recommendations:

- Foster evidence and science-based policymaking at the national level.
- Promote integrative and adaptive approaches that can reduce trade-offs.
- Generate synergy indicators and integrate them into governance and financing mechanisms.
- Create a safe-for-biodiversity carbon marketplace that goes beyond the safeguard approach.

## Synergies & Tradeoffs in the Climate-Biodiversity Nexus

Climate change and biodiversity action are governed by two different multilateral environmental agreements — the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). Yet, climate change and biodiversity are inherently linked. Biodiversity provides various ecosystem services to mitigate and build resilience to climate change, such as carbon sequestration and microclimate regulation. At the same time, biodiversity loss is accelerating climate change and negatively impacting human well-being. Despite abundant scientific literature on the interdependence of climate and biodiversity (Lovejoy & Hannah 2019; Campbell et al. 2009), until recently the latter was largely left out of mainstream climate change discourse, which gained much more political attention globally.

Studies on the interlinkages between climate change and biodiversity focus mainly on the impacts of climate change, intensified risks to ecosystems, and the adaptation potential of biodiversity and forest-based mitigation (Gupta & Singh 2023). Land and ocean ecosystems are significant carbon sinks, and therefore conserving and sustainably managing biodiversity is critical to address climate change. Healthy

ecosystems will be more resilient to climate change, maintain the supply of ecosystem services and contribute to climate mitigation efforts. Nonetheless, there remain trade-offs in climate policies concerning the land use sector, such as permitting monocultures under market mechanisms, energy plantations and the lack of effective forestry initiatives.

Recent discussions under both UNFCCC and CBD have called for enhanced synergies between the two global agendas. This imperative was included in the Paris Agreement on climate change and the Kunming–Montreal Global Biodiversity Framework (GBF), specifically in terms of mitigation and adaptation efforts, minimizing trade-offs and making use of nature-based solutions (NbS) with appropriate social and environmental safeguards. Although these solutions cannot replace large-scale decarbonization efforts, they can help to enhance synergies if planned with proper safeguard mechanisms (Pörtner et al. 2021). On the other hand, a skewed focus on forestry-based solutions for mitigation through promotion of fast-growing or exotic trees may result in maladaptation and other trade-offs (Gupta & Dube 2018).

## Addressing the Science–Policy Gap

Climate action must pay greater attention to the vital role of ecosystem-based approaches and NbS. Forests are not only carbon sinks — they also provide multiple tangible and intangible services for humanity. Policy must align with scientific evidence to spearhead more coherent action. UNFCCC Decision 1/CP.27 underlined “the urgent need to address, in a comprehensive and synergetic manner, the interlinked global crises of climate change and biodiversity loss in the broader context of achieving the Sustainable Development Goals” (UNFCCC 2022). Similarly, CBD Target 8 aims to minimize “the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, ... and fostering positive impacts of climate action on biodiversity” (CBD 2022).

There have been efforts at the global level to promote synergies. A Joint Liaison Group was established in 2001, comprising the secretariats of the UNFCCC, the CBD and the United Nations Convention to Combat Desertification (UNCCD). This group identified the lack of national-level coherence between climate-, biodiversity- and desertification-related programmes as the reason for low synergy. The first scientific effort was a special report produced by the Intergovernmental Panel on Climate Change (IPCC) on climate change and biodiversity, requested by the CBD Secretariat (Gitay et al. 2002). The report extensively analyzed climate impacts but focused much less

on policy-level synergies. This gap was eventually addressed by a 2021 IPCC–IPBES report that emphasized synergy, implementation challenges and safeguards (Pörtner et al. 2021).

There are several governance mechanisms that can enhance such synergies while reducing trade-offs. These include ecosystem-based adaptation (EbA); forest-based market mechanisms; other effective area-based conservation measures (OECMs); reducing emissions from deforestation and forest degradation (REDD+) and rights-based approaches. More recently, these approaches are seen as NbS that refer to conserving and restoring carbon-rich ecosystems, while also enhancing food security and good health (IUCN 2016). EbA, with a long history and widespread implementation, holds high potential for synergies (CBD 2018; UNFCCC 2017). Forest-based market mechanisms, however, have drawn criticism for their mitigation-centric focus, raising concerns about their ability to deliver multiple benefits (Gupta & Dube 2018). Similarly, REDD+, targeting deforestation and sustainable forest management, faces criticisms regarding indigenous rights, social equity and leakage.

## Policy Recommendations

The following recommendations are provided for state and non-state actors, civil society organizations, financing institutions and private sector organizations engaged in implementation of climate and biodiversity action, primarily in biodiversity-rich developing countries. They are aimed at overcoming significant trade-offs and enhancing synergies at the global, national and local levels.

### 1. Foster evidence and science-based policymaking at the national level.

To better synergize global and national goals on climate and biodiversity, agreements under the UNFCCC and the CBD have followed a bottom-up approach whereby countries have complete autonomy on deciding their long-term carbon mitigation and adaptation goals, and their biodiversity conservation strategies. Biodiversity was always considered a national resource, with Parties entrusted to take appropriate action. However, a recent upsurge in scientific and economic research has shown that biodiversity loss is highly interconnected across borders. The consumption patterns of countries impact both climate change and biodiversity. Thus, targets under these multilateral environmental agreements must be achieved nationally but in the global context. Though national-level action plans largely align with goals under the UNFCCC and the CBD, integration between national climate and biodiversity action plans is lacking — these plans

run in parallel with little inter-ministerial coordination and coherence across different levels of government.

To enhance climate–biodiversity synergies, national governments must build stronger interlinkages between these plans and departments. One approach is to recognize the importance of biodiversity within the climate action plan, as in the case of the National Climate Change Strategy of Costa Rica. Examples of developed countries include Germany and Norway, which were also active in promoting integration of climate and biodiversity finance during GBF discussions. Their main concerns include provision of forest preservation, sustainable land use and safeguarding biodiversity by protecting natural habitats. Another strong connection between climate and biodiversity is the reduction of harmful subsidies, such as those for fossil fuels. Now recognized as a target under GBF, this must soon be incorporated into national action plans as well. Additionally, the plans should provide information on how safeguards for local communities, natural forests and their ecosystem services will be ensured to avoid deleterious impacts on biodiversity, as envisaged under GBF Target 8. Integration of long-term global interests with short-term national interests can make “hard” choices easier.

## **2. Promote integrative and adaptive approaches that can reduce trade-offs.**

Climate action plans that focus solely on mitigation may not necessarily result in biodiversity conservation; however, those focusing solely on biodiversity will mostly have positive impacts on climate efforts (Pörtner et al. 2021). Therefore, greater integration of biodiversity concerns into climate action planning will further facilitate climate action. The Paris Agreement promotes positive incentives for activities related to reducing deforestation and alternative policy approaches, such as joint mitigation and adaptation for integrated management of forests and enhancing non-carbon benefits. These approaches must be incentivized to build climate–biodiversity synergies and advance just transition.

NbS, as a holistic governance approach, can tackle climate, biodiversity, food, and water-related issues, if implemented properly. Most identified NbS can be implemented in cities, rural areas, inland and coastal areas, and even at the household level such as home gardens. To advance synergies through NbS, a combination of integrative and adaptive governance paradigms that ensures inclusion of diverse actors is needed. This should include participation by indigenous peoples and local communities (IPLCs) in initiatives aimed at climate change adaptation and conservation. Effective tools and methods include local knowledge repositories, documentation and supporting rights-based approaches

(Gupta et al. 2021). National and global financing institutions must allocate more funding for such initiatives, which currently rely on meagre civil society funding or grants from the small grants programme of the Global Environment Facility (GEF). This will enable the localization of global goals, facilitate local-level implementation and help to create climate- and biodiversity-resilient development pathways.

## **3. Generate and integrate synergy indicators into governance and financing mechanisms.**

Synergy indicators based on implementation evidence can minimize trade-offs. To avert the high risks associated with implementation of climate response options, UNFCCC and CBD negotiations must consider scientific evidence and best practices from the ground and integrate these into project planning guidelines to be followed by national governments. In identifying indicators for biodiversity conservation in climate projects, the focus must go beyond a safeguards approach to pursue biodiversity enhancement. Similarly, financing institutions such as the GEF and the Green Climate Fund (GCF) must develop synergy indicators and standards for climate financing that yields biodiversity benefits. In addition to streamlining project implementation this will lead to multi-sectoral benefits, reducing the current finance gap. This is beneficial for both the funder and the implementor.

There is a pressing need for scientific evidence on the implementation of projects in the context of climate–biodiversity synergies, that can also support progress on the SDGs. Overall, the biodiversity agenda is gaining attention from the scientific community, policymakers and the public. Implementation of the Paris Agreement and the GBF may bring fresh perspectives on efforts to link climate and biodiversity initiatives and the benefits for biodiversity-dependent communities and the world. IUCN and GIZ have attempted to capture biodiversity-relevant indicators (IUCN 2019; GIZ, UNEP-WCMC & FEBA 2020). However, due to differences in national circumstances and capacities, it is important to further advance the development and implementation of such indicators at the national level.

## **4. Create a safe-for-biodiversity carbon marketplace that goes beyond the safeguard approach.**

It is important that lessons from implementation of afforestation/reforestation (A/R) projects, REDD+ and NbS projects are integrated when preparing guidelines for forestry initiatives under Article 6 of the Paris Agreement. The key challenge to implementation is the lack of reference levels, baselines, community-level integration and accounting of the intangible benefits provided by ecosystem services (Gupta & Dube 2018). To create a safe-for-biodiversity

carbon marketplace, policy must incentivize enhancement of biodiversity in forest-based market mechanisms beyond the safeguard approach. The discourse on NbS must transcend the prevailing emphasis on market-oriented benefits to recognize and quantify non-market values of nature (Pascual et al. 2023). Instead of confining market mechanisms to carbon sequestration, the focus must expand to other ecosystem services including cultural and spiritual values.

Many developing countries, which either have a high rate of deforestation or whose forests are a net carbon sink, have assigned forestry activities an important role in their Nationally Determined Contributions under the Paris Agreement. For the long-term viability of these activities, sustainable management of forests, community-led forest restoration and REDD+ are receiving much more international attention than A/R monoculture-type activities. Lessons should be learned from earlier market experiences, which included expansion of biofuel and oil palm plantations, dam building and inclusion of indigenous peoples' forests in forestry initiatives without their proper consent. Holistic strategies may provide robust procedures that ensure environmental integrity and social safeguards (Gupta & Dube 2018). As these mechanisms further evolve, dynamic and tailor-made baselines adapted to the circumstances of the region may be adopted, which could avoid leakage, double-counting and unreliable estimation of emission reductions.

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Bridging Science and Policy for Integrated Action on Climate and Biodiversity  
UNU-IAS Policy Brief No. 45, 2024

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ISSN: 2409-3017

DOI: <https://doi.org/10.53326/SGPQ1036>

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Publisher: United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), Tokyo, Japan