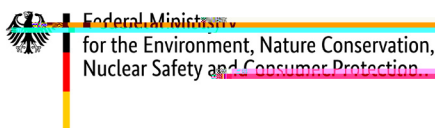
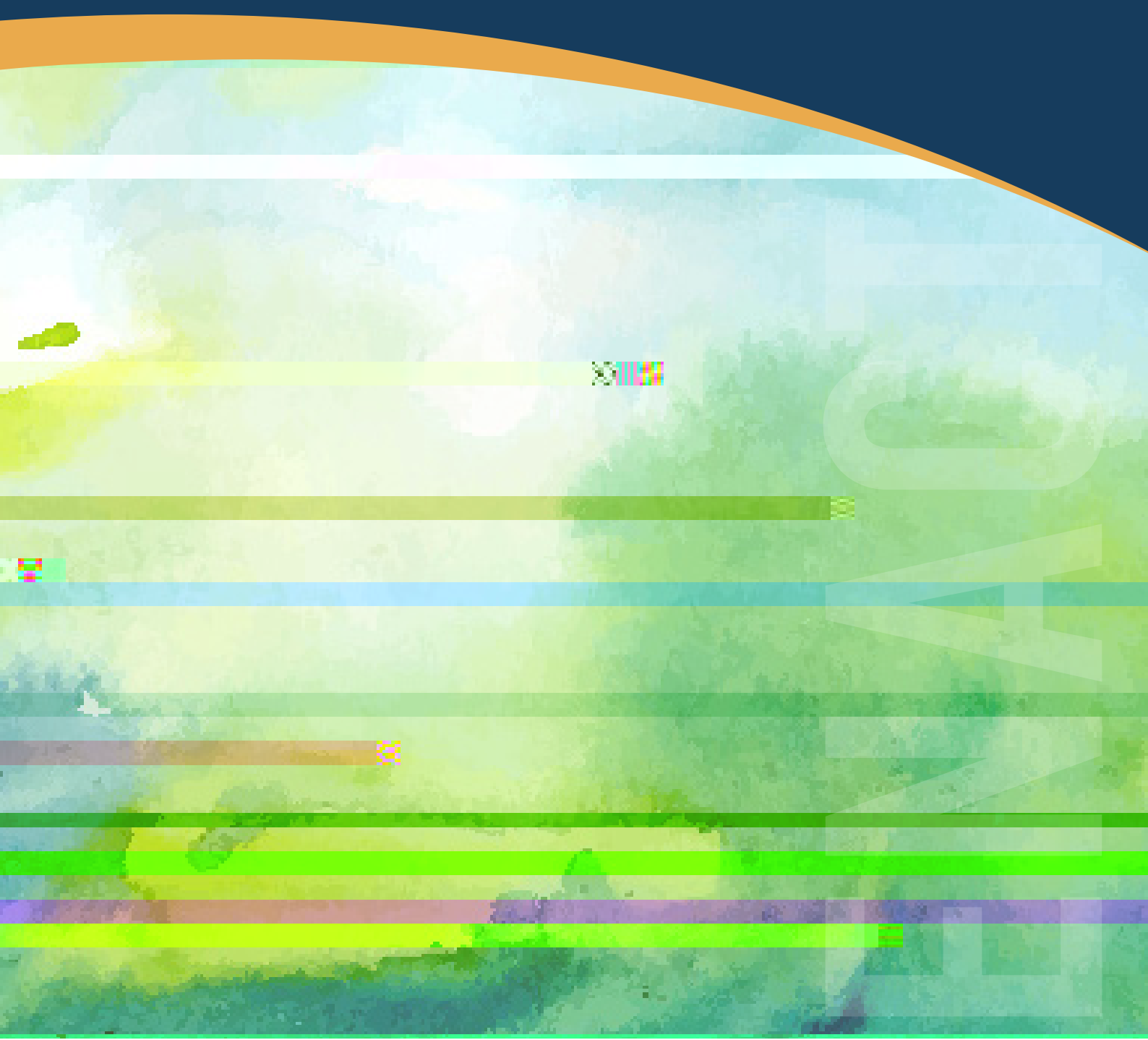
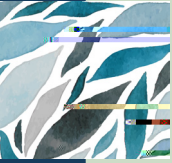


# ENACT 2024 Nature-based Solutions Discussion Paper

Strategic action across the Rio Conventions






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# EXECUTIVE SUMMARY



To achieve their intended impact, Nature-based Solutions (NbS) must effectively address the interconnected challenges of climate change, biodiversity loss, and land degradation while enhancing



The most recent research also highlights key areas for investment and future research focus:

**Scaling and Integration:** Effective NbS implementation requires robust knowledge integration, sustainable funding, and adaptive governance. Successful models emphasise cross-sectoral collaboration and innovative financing.<sup>6</sup>

**Equity and Justice:** Ensuring equitable access and inclusive planning for NbS is crucial to address social disparities and maximise the benefits across different communities.<sup>7</sup>

These scientific highlights underscore the critical role of NbS in achieving sustainable development goals and the need for a comprehensive and integrated global approach to fully leverage their benefits.

Aligning efforts across the Rio Conventions—namely the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the United Nations Convention to Combat Desertification (UNCCD)—is crucial for fostering an integrated approach at all levels of governance. These conventions, while addressing distinct challenges, are interconnected in their impact on enhancing biodiversity, creating climate resilience and fostering ecosystems integrity. By harmonizing their policies to meet joint targets across the conventions, countries can optimize resource use, and avoid duplication of efforts, ultimately leading to more effective conservation, restoration and climate change adaptation and mitigation measures. An integrated approach not only promotes ecological integrity but also supports socioeconomic development, ensuring that communities can thrive while protecting the planet for future generations.

Building on the weight of the evidence, the ENACT Partnership offers the following action-focused policy proposals to accelerate NbS within the Rio Conventions:

## ALIGNING POLICIES

Governments should integrate clear, measurable NbS targets into national strategies across the Rio Conventions. For the CBD, this means embedding NbS targets into National Biodiversity Strategies and Action Plans (NBSAPs), focusing on ecosystem resilience and biodiversity conservation. The UNFCCC should call for incorporating NbS into Nationally Determined Contributions (NDCs) and adaptation communications, tracking measures like carbon sequestration and ecosystem restoration. UNCCD should emphasise including NbS in National Action Programs (NAPs) and Land Degradation Neutrality (LDN) targets to combat land degradation and desertification.

## ACCELERATING FINANCE

Scaling up financing for NbS is crucial. Therefore, countries should include mechanisms, tools or instruments for NbS financing in their respective national strategies and policies relating to the three conventions (CBD, UNFCCC and UNCCD). In all instances, access to financing should be enhanced particularly to chronically underserved and marginalised groups. These measures should be achieved through additional funds and not compromise current financing.

## STRENGTHENING GOVERNANCE

Effective NbS planning requires a whole-of-society approach, ensuring full and inclusive participation. The CBD should establish or strengthen existing stakeholder platforms that include representatives from Indigenous Peoples, local communities, women, youth, and other groups in vulnerable situations in NbS planning and decision-making. The UNFCCC should call for integrating inclusive governance

practices into NDCs and adaptation plans, while the UNCCD should promote community-driven LDN initiatives, supporting equitable participation and benefit-sharing among all stakeholders.

By advancing these policy proposals, achievement of the Rio Convention's linked ambitions toward critical environmental and development goals can be enhanced and accelerated through leveraging the impact of NbS.

## Endnotes

- 1 Woroniecki, S., Spiegelenberg, F. A., Chausson, A., Turner, B., Key, I., Md. Irfanullah, H., & Seddon, N. (2023). Contributions of nature-based solutions to reducing people's vulnerabilities to climate change across the rural Global South. *Climate and Development*, 15(7), 590-607.
- 2 Turner, B., Devisscher, T., Chabaneix, N., Woroniecki, S., Messier, C., & Seddon, N. (2022). The role of nature-based solutions in supporting social-ecological resilience for climate change adaptation. *Annual Review of Environment and Resources*, 47(1), 123-148.
- 3 Chausson, A., Smith, A., O'Callaghan, B., Mori-Clement, Y., Zapata, F., & Seddon, N. (2023). Can nature-based solutions support economic recovery? A review of reviews on the economic outcomes of NbS.; Vicarelli, M., Sudmeier-Rieux, K., Alsadadi, A., Shrestha, A., Schütze, S., Kang, M., ... & Mysiak, J. (2024). On the cost-effectiveness of Nature-based Solutions for reducing disaster risk. *Science of The Total Environment*, 174524.
- 4 Buma, B., Gordon, D. R., Kleisner, K. M., Bartuska, A., Bidlack, A., DeFries, R., ... & Hamburg, S. P. (2024). Expert review of the science underlying nature-based climate solutions. *Nature Climate Change*, 14(4), 402-406.
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- 5 Nassary, E. K., Msomba, B. H., Masele, W. E., Ndaki, P. M., & Kahangwa, C. A. (2022). Exploring urban green packages as part of Nature-based Solutions for climate change adaptation measures in rapidly growing cities of the Global South. *Journal of Environmental Management*, 310, 114786.; Ferrario, F., Mourato, J. M., Rodrigues, M. S., & Dias, L. F. (2024). Evaluating Nature-based Solutions as urban resilience and climate adaptation tools: A meta-analysis of their benefits on heatwaves and floods. *Science of the Total Environment*, 175179.
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# 1

## INTRODUCTION

It is now widely recognised that climate change, biodiversity loss, and land degradation are interconnected and that successfully addressing these challenges will require globally coordinated action and integrated approaches<sup>8,9</sup>. NbS offer a facilitative framework around which global agreement can be built and integrated approaches designed. NbS, by UNEA definition, go beyond single-issue actions and include:

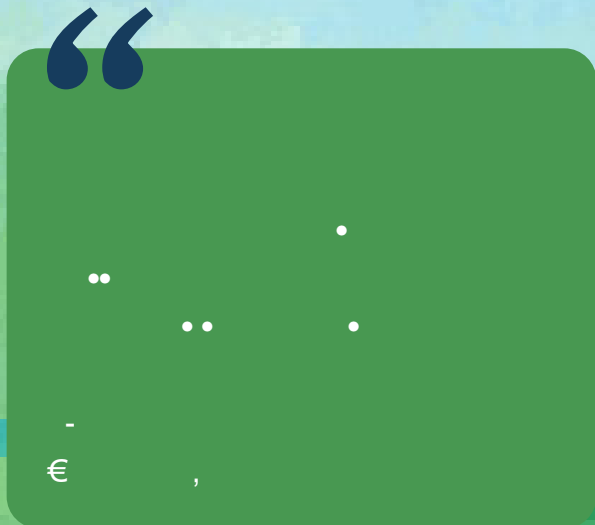
Actions to protect, conserve, restore, sustainably use and manage natural or modified terrestrial, freshwater, coastal and marine ecosystems which address social, economic and environmental challenges effectively and adaptively, while simultaneously providing human well-being, ecosystem services, resilience and biodiversity benefits.<sup>10</sup>

This definition links to the widely agreed notion that NbS are “place-based partnerships between people and nature.”<sup>11</sup> When designed and implemented following appropriate standards, NbS maximise positive synergies and minimise negative trade-offs at the intersection of climate, nature, and society.<sup>12</sup>

For these reasons, NbS have been enshrined in various Rio COP decisions such as CBD COP 15 decision on the Kunming-Montreal Global Biodiversity Framework<sup>13</sup>, UNFCCC COP 28 decision on the outcomes of the global stocktake<sup>14</sup>, and UNCCD COP 15 decision on relationships with other conventions<sup>15</sup>.

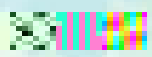
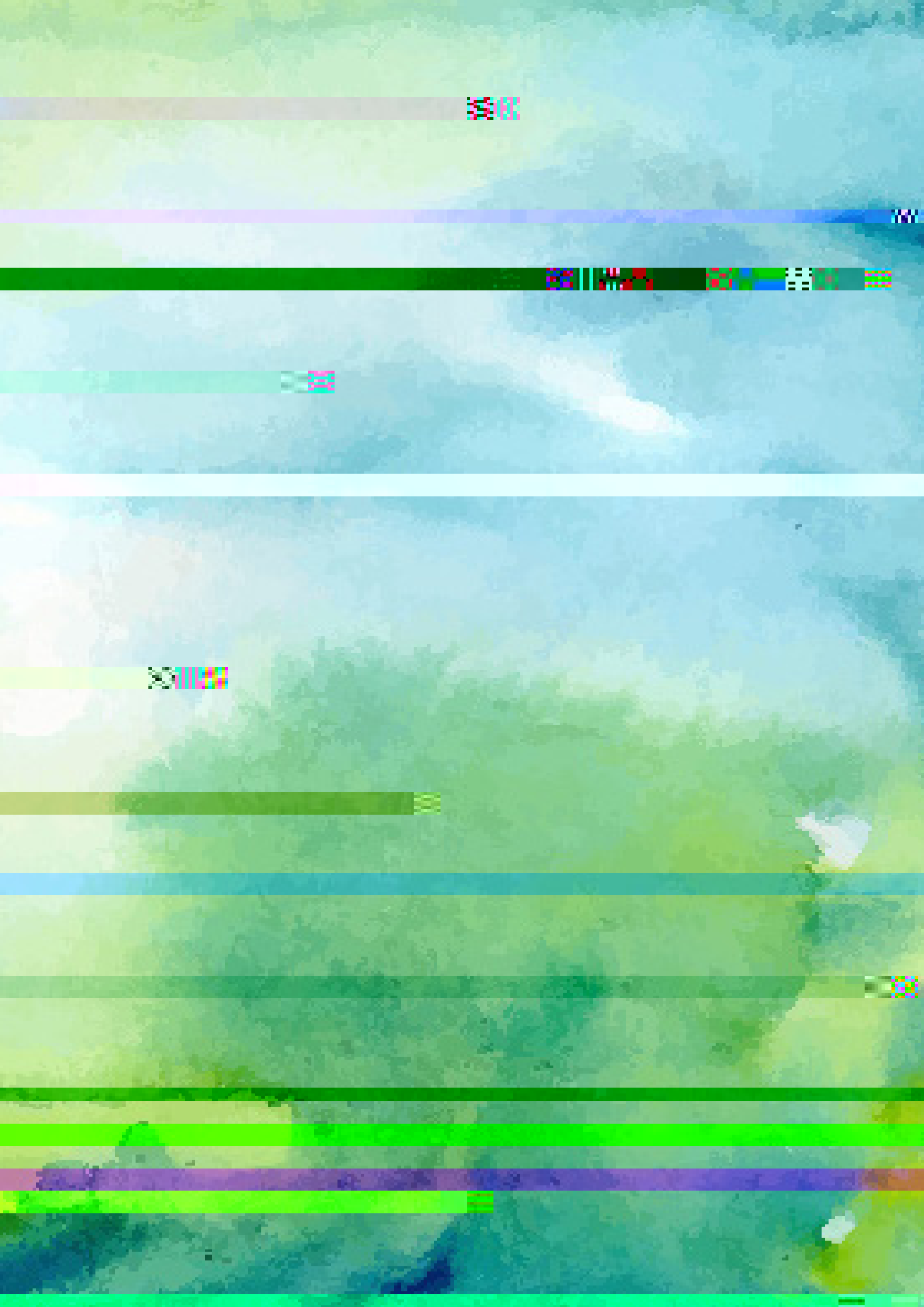
With all three Rio Convention COPs taking place, 2024 stands as an important year to maximise attention on the need for coordinated implementation across the Conventions to deliver globally agreed goals. The delivery of the goals is set at 2030 and discussions this year will focus on a stock take and key actions to be taken at the 2025 half-way point to near-term climate mitigation targets, the Kunming-Montreal Global Biodiversity Framework, and the UNCCD Strategic Framework and the Sustainable Development Goals (SDGs). Further, the current revision of climate and biodiversity strategies (such as NDCs, NBSAPs and NAPs) are a unique opportunity for accelerating transformation.

The [ENACT Partnership](#), supporting the [COP 28 Joint Statement on Climate, Nature and People](#), works to accelerate collective global efforts to address climate change, land and ecosystem degradation, and biodiversity loss through NbS. It does so by providing a platform for Parties and non-state actors working on NbS to collaborate and build support across the Rio Conventions through a collective voice for evidence-based policy on NbS. Its three goals on enhancing i) resilience of people in vulnerable situations, ii) conservation, restoration and sustainable management of ecosystems and iii) mitigation by ecosystems directly contribute to all three Rio Conventions and connect them.









a gap in knowledge diversity, with only 8% of cases incorporating both local and external knowledge, which limits the potential effectiveness of NbS.

Villamayor-Tomas et al.'s<sup>24</sup> 2024 review of 363 empirical observations further illustrate the effectiveness of NbS in developing countries, reporting positive outcomes in 76% of observations related to risk reduction and development. Their review highlights successful applications like reforestation and wetland restoration, which have shown positive impacts across agricultural and coastal sectors. Complementing this, Buma et al.'s<sup>25</sup> 2024 expert-driven review confirms the high mitigation potential of NbS. Their review identified tropical and temperate forest conservation and reforestation pathways as high-confidence solutions for carbon sequestration, reinforcing the role of NbS in climate mitigation efforts.

Finally, Vicarelli et al.'s<sup>26</sup> 2024 review examined the cost-effectiveness of NbS for disaster risk reduction, finding that 71% of studies reported NbS as a consistently cost-effective approach. Their comprehensive analysis of over 20,000 studies showed that NbS, such as those involving mangroves (80% effectiveness), forests (77%), and coastal ecosystems (73%), are often more effective and economically advantageous compared to conventional engineering solutions. This evidence supports the integration of NbS into disaster risk management and highlights their potential for achieving both environmental and economic benefits.

According to the IPBES Global Assessment Report on Biodiversity and Ecosystem Services, integrating ecosystems into urban planning can significantly enhance resilience to climate change, proving that NbS are a cost-effective and impactful approach to achieving SDGs.<sup>27</sup> Recent research underscores this potential, with Nassary et al.'s<sup>28</sup> 2022 review of 50 recent studies demonstrating that Urban Green Infrastructure (UGI) in rapidly growing cities of the Global South can effectively combat urban heat islands, improve air quality, and bolster overall urban resilience. They emphasise that there is a notable research gap in data from certain regions, especially in Africa and Oceania, which calls for increased attention and study to fully leverage UGI's benefits.

Further supporting these findings, Ferrario et al.'s<sup>29</sup> 2024 comprehensive meta-analysis of 89 studies revealing that NbS substantially mitigates extreme weather impacts, such as heatwaves and floods. Their analysis shows that NbS can lower urban temperatures by an average of 1.1°C and significantly reduce stormwater runoff, with a reduction of approximately 58%

in excess water. These benefits highlight the effectiveness of NbS in enhancing urban climate adaptation and resilience strategies. Collectively, these insights reinforce the value of integrating nature-based approaches into urban planning and policy, particularly in regions that are currently under-researched.

**58%**  
reduction in excess  
water

0e-1.4efco

The IPBES-IPCC workshop 2021 recognised that NbS are vital in achieving transformative environmental change as they work at the interplay between the climate system, oceans, and land to provide crucial mitigation and adaptation services without harming ecosystems.<sup>30</sup> This perspective is supported by recent research, including Wudu et al.'s<sup>31</sup> 2023 review which emphasises that conservation-focused NbS can significantly mitigate biodiversity loss and support ecosystem health. Their global review underscores the importance of integrating carbon and biodiversity conservation approaches to effectively preserve global biodiversity. The authors call for more focused studies on emission reduction strategies and the impacts of climate change on biodiversity at various scales to enhance the effectiveness of NbS.

To maximise the impact of restoration and other NbS, there is an urgent need to scale up and accelerate these efforts. Calliari et

al.<sup>32c8n283.5826lpuomrurur4 T.rl6bomrur4</sup>

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Finally, Kato-Huerta and Geneletti's<sup>34</sup> 2022 review addresses the environmental justice implications of NbS in urban areas, stressing the need for equitable access and inclusive planning processes. Their systematic review of 152 articles from 2000 to 2021 reveals that while NbS can offer numerous benefits, there are often disparities in how these benefits are distributed across different communities. The study highlights the necessity for further research to identify and address environmental injustices by improving planning methods and ensuring community involvement in NbS design and implementation. This approach aims to ensure that the benefits of NbS are equitably shared and that the solutions effectively address social disparities.

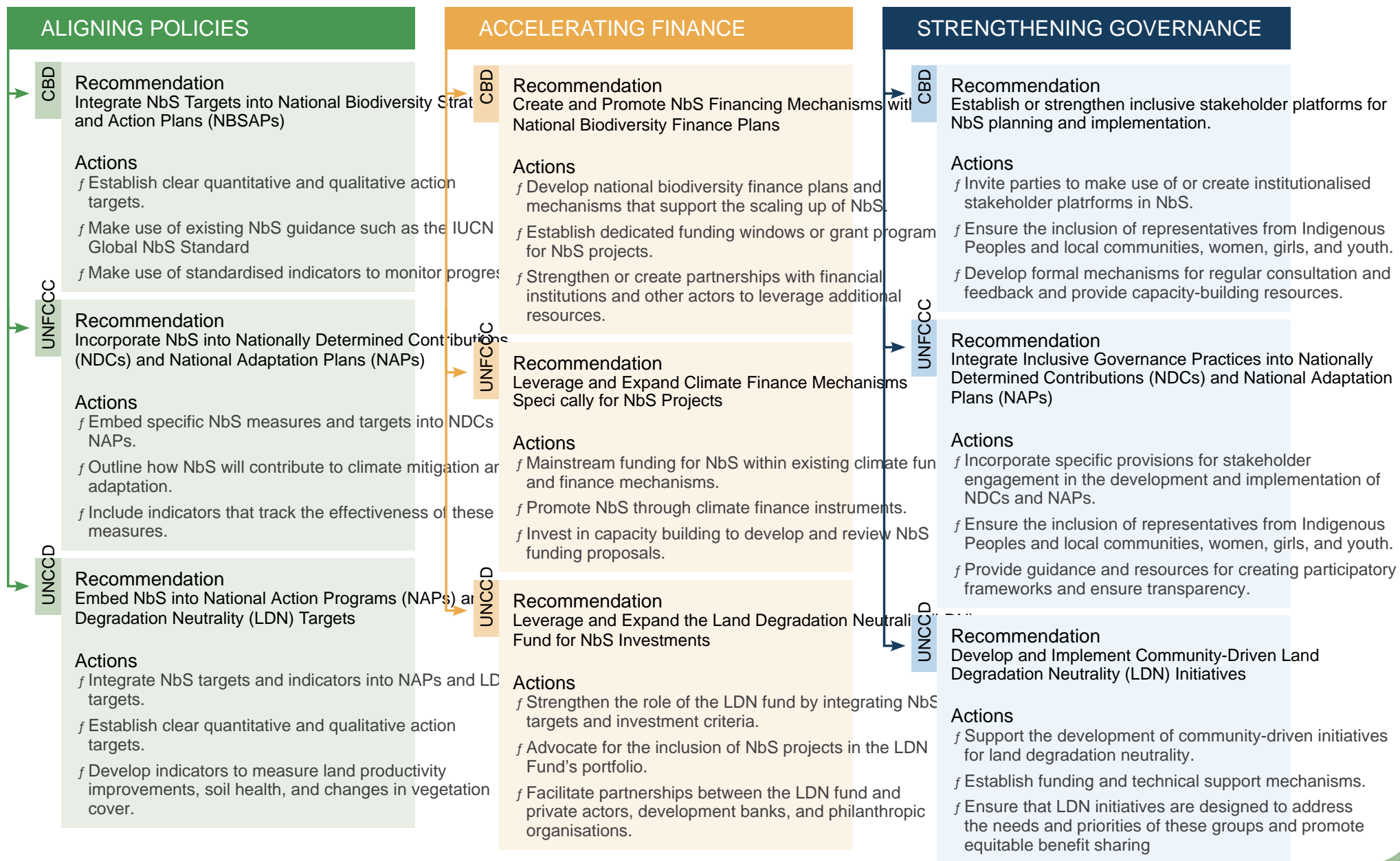
## Endnotes

- 16 Seddon, N. (2022). Harnessing the potential of nature-based solutions for mitigating and adapting to climate change. *Science*, 376(6600), 1410-1416. This important research was thoroughly covered in the 2022 [Roadmap to the State of NbS Report](#) launched at COP27, and undergirds much of the research presented in this section.
- 17 This process followed an SLR method which is fully outlined [here](#). SLR is a process to collate, analyse and review relevant evidence on a given topic following specified eligibility criteria. The standard method includes 4 steps: SALSA (search, appraisal, synthesis, analysis).
- 18 [Climate Change 2022: Impacts, Adaptation and Vulnerability Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change](#) (IPCC)
- 19 Woroniecki et al., 2023.
- 20 [Global Land Outlook – Second Edition \(UNCCD\)](#) (2022)
- 21 Mekuria, W., Langan, S., Johnston, R., Belay, B., Amare, D., Gashaw, T., ... & Wale, A. (2015). Restoring aboveground carbon and biodiversity: a case study from the Nile basin, Ethiopia. *Forest Science and Technology*, 11(2), 86-96.
- 22 Turner et al., 2022.
- 23 Strauch, A. M., Rurai, M. T., & Almedom, A. M. (2016). Influence of forest management systems on natural resource use and provision of ecosystem services in Tanzania. *Journal of environmental management*, 180, 35-44.
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- 25 Buma et al., 2024.
- 26 Vicarelli et al., 2024.
- 27 [IPBES – The Global Assessment Report on Biodiversity and Ecosystem Services](#) (2019)
- 28 Nassary et al., 2022.
- 29 Ferrario et al., 2024.
- 30 [IPBES-IPCC Co-Sponsored Workshop Biodiversity and Climate Change](#) (2021)
- 31 Wudu, K., Abegaz, A., Ayele, L., & Ybabe, M. (2023). The impacts of climate change on biodiversity loss and its remedial measures using nature based conservation approach: a global perspective. *Biodiversity and Conservation*, 32(12), 3681-3701.
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- 33 Chausson et al., 2023.
- 34 Kato-Huerta & Geneletti, et al., 2022.

# 3

## POLICY AND ACTION PROPOSALS

It is critical that governments in partnership with the private sector, civil society and research institutions accelerate actions toward climate, biodiversity, land and sustainable development targets within this decade. To achieve this, parties must act together to coordinate implementation across the Rio Conventions to deliver on the globally agreed goals. The ENACT Partnership works for increased harmonization across the Rio Conventions—UNFCCC, CBD, and UNCCD—in support of this objective. These conventions, while addressing distinct challenges, are interconnected in their impact on enhancing biodiversity, creating climate resilience and fostering ecosystems integrity. By harmonizing across the conventions, countries can optimize resource use, and avoid duplication of efforts, ultimately leading to more effective conservation, restoration and climate adaptation and mitigation measures. This can be facilitated through accelerated implementation and scaling up of NbS interventions in line with the Rio COP commitments and the COP 28 Joint Statement on Climate, Nature and People by strengthening collaboration within the following three frameworks of action:





## Convention on Biological Diversity (CBD)

### Recommendation

Integrate NbS Targets into National Biodiversity Strategies and Action Plans (NBSAPs)

### Action

During the revision or implementation of NBSAPs, establish clear and measurable targets specifically for nature-based solutions and Targets 8 and 11 in the GBF. This includes setting quantitative goals for enhancing ecosystem resilience, conserving biodiversity, and integrating NbS into key biodiversity policy priorities. Develop a set of standardised indicators to monitor progress, such as metrics for restoration success and ecosystem services improvements, ensuring that, where possible, these are aligned with indicators in NDCs and NAPs. Ensure that these targets and indicators integrate the UNEA 5/5 NbS criteria and make use of existing guidance such as the NbS Global Standard as a facilitative framework for NbS planning, implementation and review.



### Recommendation

Incorporate NbS into Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs)

### Action

Embed specific NbS measures and targets into NDCs and adaptation communications in a way that builds on the best, recent evidence-based recommendations. This should involve outlining how nature-based solutions will contribute to climate mitigation (e.g., carbon sequestration through reforestation) and adaptation (e.g., flood protection through wetland conservation). Include indicators that track the effectiveness of these measures, such as carbon dioxide equivalent (CO<sub>2</sub>-eq) sequestered, area of ecosystems restored, and reduction in climate-related risks. Ensure that these targets and indicators integrate the UNEA 5/5 NbS criteria and make use of existing guidance such as the NbS Global Standard as a facilitative framework for NbS planning, implementation and review.

Recommendation

Embed NbS into National Action Programs (NAPs) and Land Degradation Neutrality (LDN) Targets

Action

**ACCELERATING FINANCE**

Scaling of finance and investments for nature-based solutions from all sources, including domestic budgets, multilateral development banks, multilateral climate and biodiversity funds, bilateral development agencies, private sectors actors, and philanthropic sources and priorities this finance in the form of grants over loans.



Recommendation

Leverage and Expand the Land Degradation Neutrality (LDN) Fund for NbS Investments

Action

Strengthen the role of the LDN Fund by integrating specific nature-based solutions targets and investment criteria into its funding framework. Advocate for the inclusion of NbS projects in the LDN Fund's portfolio, ensuring that such projects are prioritised and receive adequate support.

## STRENGTHENING GOVERNANCE

Promoting a whole-of-society approach in the synergistic planning and implementation of nature-based solutions, ensuring the full, equitable, inclusive, and effective representation and participation of indigenous peoples, local communities, women, girls, youth, and other communities in vulnerable situations in the planning and implementation

### Convention on Biological Diversity (CBD)

#### Recommendation

Establish Inclusive Stakeholder Platforms for NbS Planning and Implementation

#### Action

Invite parties to create and institutionalise stakeholder platforms or councils dedicated to nature-based solutions, ensuring they include representatives from indigenous peoples, local communities, women, girls, youth, and other groups in vulnerable situations. These platforms should be involved in all stages of NbS planning, decision-making, and implementation. Develop formal mechanisms for regular consultation and feedback and provide capacity-building resources to enable meaningful participation.

#### Example

A country could set up a National NbS Advisory Council with dedicated seats for indigenous and local community representatives, women's organisations, and youth groups. The council would meet quarterly to review and advise on NbS strategies and projects, ensuring that diverse perspectives are incorporated.



### United Nations Framework Convention on Climate Change (UNFCCC)

#### Recommendation

Integrate Inclusive Governance Practices into Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs)

#### Action

Incorporate specific provisions for stakeholder engagement in the development and implementation of NDCs and national adaptation plans drawing on the expansive case literature and standards developed for NbS. This includes mandating the inclusion of Indigenous Peoples, local communities, women, youth, and other groups in vulnerable situations in the consultation processes and decision-making bodies. Provide guidance and resources for creating participatory frameworks and ensure transparency in how stakeholder inputs are used.

## STRENGTHENING GOVERNANCE



### United Nations Convention to Combat Desertification (UNCCD)

#### Recommendation

Develop and Implement Community-Driven Land Degradation Neutrality (LDN) Initiatives

#### Action

Support the development of community-driven initiatives for land degradation neutrality that actively involve indigenous peoples, local communities, women, youth, and other groups in vulnerable situations in planning and execution. Establish funding and technical support mechanisms to facilitate these community-led projects. Ensure that LDN initiatives are designed to address the needs and priorities of these groups and promote equitable benefit-sharing.

# 4

## ENACT EXAMPLES FOR ACCELERATING NBS

### ENACT Partner

- f United Nations Environmental Program
- f World Conservation Monitoring Centre (UNEP-WCMC)

### Title

Build the resilience of people, assets and nature to the impacts of climate change through high integrity nature-based solutions

### Summary

UNEP-WCMC's Nature-based Solutions (NbS) team will support decision making on and development, deployment and monitoring of high integrity NbS for adaptation and resilience building. This will include development of training materials to help decision makers, and their technical teams take better account of nature in the development of NAPs, and other climate, environment and development plans and strategies. Through several different initiatives we will also support individual countries in the development of NBSAPs that take account of and promote the potential of NbS for enhancing the resilience of people and nature and emphasize their role in advancing progress towards multiple objectives. We will provide support for assessing and monitoring the outcomes of NbS in the context of NBSAPs, NAPs and more widely to enhance the evidence base for informed decision-making on NbS.

### Alignment with 2024 Discussion Paper

These initiatives directly support recommendations on NBSAPs and NDCs and contribute to policy alignment more broadly

### Responsible Units/Departments

Nature-Based Solutions Unit

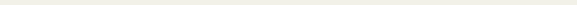
### Key Partners

Government, Civil Society, Private Sector, Inter-governmental Organisations, Development Finance Institutions

**ENACT Partner**

European Union

**Title**



## ENACT Partner

Germany

### Summary

With the Federal Action Plan on Nature-based Solutions for Climate and Biodiversity (ANK), the German government aims to make a key contribution to significantly improving the general condition of ecosystems in Germany, thus strengthening their resilience and climate mitigation performance. With the Action Plan, the German government will protect, strengthen and restore ecosystems. The

## Key Partners/Stakeholders

The Action Plan is the result of a comprehensive participatory process in 2022. The Federal Environment Ministry received around 120 opinions and more than 1,000 online comments. The content of every proposed improvement was reviewed. It helped forge a broad alliance for implementation including landowners, nature conservationists and other local stakeholders.

The Action Plan is implemented in close cooperation with the Bundesländer (Federal States). In the implementation phase of the ANK, the national Centre of Competence for nature-based climate action (KNK) is the first point of contact for the topic at the federal level. In addition to coordinating nationwide advice on the topic of nature-based climate action, the competence centre provides information about various funding opportunities, provides specialist information and also brings stakeholders and interested people together in various event formats. The KNK not only promotes networking in the countries, regions and those involved locally, but also supports the practical implementation of measures with established care structures - both at the local, regional and national level.[in |n](#)



# WACT

