



Food and Agriculture
Organization of the
United Nations



Convention on
Biological Diversity

RESTORATION PROGRESS REPORT

Nature's comeback

Scaling ecosystem
restoration for
people and planet



UNITED NATIONS DECADE ON
**ECOSYSTEM
RESTORATION**
2021-2030

RESTORATION PROGRESS REPORT

Nature's comeback

Scaling ecosystem
restoration for
people and planet

Published by

Food and Agriculture Organization of the United Nations
and
United Nations Environment Programme
and
Secretariat of the Convention on Biological Diversity

Rome, 2026

Required citation:

FAO, UNEP and SCBD. 2026. *Restoration progress report: Nature's comeback – Scaling ecosystem restoration for people and planet*. Rome. <https://doi.org/10.4060/ce2114en>

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP) or the Secretariat of the Convention on Biological Diversity (SCBD) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO, UNEP or SCBD in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO, UNEP or SCBD.

ISBN 978-92-5-141087-5 [FAO]

© FAO, UNEP and SCBD 2026



Some rights reserved. This work is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/legalcode>).

Under the terms of this licence, this work may be copied, redistributed and adapted for non-commercial purposes, provided that the work is appropriately cited. In any use of this work, there should be no suggestion that FAO, UNEP or SCBD endorses any specific organization, products or services. The use of the FAO, UNEP and SCBD logos is not permitted. If the work is adapted, then it must be licensed under the same or equivalent Creative Commons license. If a translation of this work is created, it must include the following disclaimer along with the required citation: "This translation was not created by the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP) or the Secretariat of the Convention on Biological Diversity (SCBD). Neither FAO, UNEP nor SCBD are responsible for the content or accuracy of this translation. The original English edition shall be the authoritative edition."

Disputes arising under the licence that cannot be settled amicably will be resolved by mediation and arbitration as described in Article 8 of the licence except as otherwise provided herein. The applicable mediation rules will be the mediation rules of the World Intellectual Property Organization <http://www.wipo.int/amc/en/mediation/rules> and any arbitration will be in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

Third-party materials. Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

Sales, rights and licensing. FAO information products are available on the FAO website (www.fao.org/publications) and can be purchased through publications-sales@fao.org. Requests for commercial use should be submitted via: www.fao.org/contact-us/licence-request. Queries regarding rights and licensing should be submitted to: copyright@fao.org.

Contents

Acknowledgements
vii

Abbreviations
viii

Key messages
x

1

CHAPTER 1

Introduction

1

2

CHAPTER 2

Global progress in ecosystem restoration

7

2.1 Restoration data compilation

7

2.2 A world under pressure

11

2.2.1 The drivers of ecosystem degradation

11

2.2.2 Ecosystem loss and degradation in terrestrial ecosystems

12

2.2.3 Ecosystem loss and degradation in freshwater (inland water) ecosystems

15

2.2.4 Ecosystem loss and degradation in marine and coastal ecosystems

17

2.2.5 From interconnected ecosystems to people

20

2.3 Global restoration commitments

23

2.3.1 Evolution of restoration commitments

23

2.3.2 Restoration commitments in terrestrial ecosystems

27

2.3.3 Restoration commitments in freshwater (inland water) ecosystems

29

2.3.4 Restoration commitments in marine and coastal ecosystems

30

2.4 Restoration in progress

32

2.4.1 The status of restoration progress

32

2.4.2 Restoration implementation in terrestrial ecosystems

34

2.4.3 Restoration implementation in freshwater (inland water) ecosystems

38

2.4.4 Restoration implementation in marine and coastal ecosystems

40

2.5 Restoration finance

42

2.5.1 Current finance flows

43

2.5.2 Directing restoration finance to Indigenous Peoples and other groups

45

2.6 Restoration gaps and opportunities

46

2.6.1 Restoration commitments indicate substantial ambition

48

2.6.2 Documented restoration implementation shows progress but remains below ambition

49

2.6.3 Challenges in national reporting

50

2.6.4 Finance needs and opportunities

52

2.6.5 Evidence-based knowledge and gaps

53

2.6.6 Governance and inclusivity gaps

55

3

CHAPTER 3

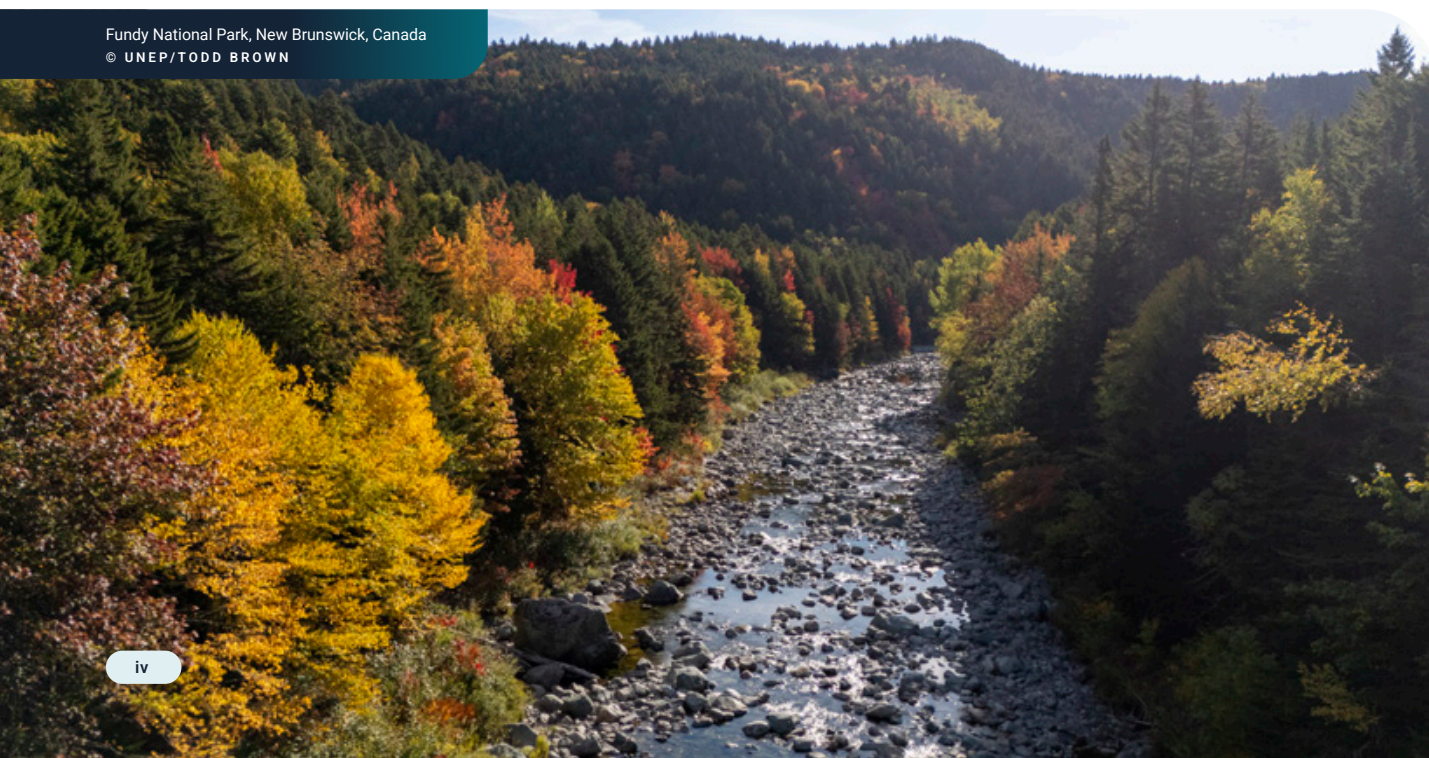
Scaling solutions to accelerate action to 2030 and beyond	59
3.1 Pathway I: Building a global movement	59
3.1.1 Turning awareness into action	60
3.1.2 Expanding partnerships to engage the whole of society	62
3.1.3 Using cities as platforms for collective action	63
3.1.4 Enabling youth leadership	64
3.2 Pathway II: Generating political support	66
3.2.1 Aligning national planning and strengthening cross-sector coordination	66
3.2.2 Enhancing policy support for under-represented ecosystems	69
3.2.3 Recognizing land tenure, rights, knowledge and leadership of Indigenous Peoples and other communities	73
3.2.4 Transitioning from restoration projects to restoration economies	75
3.2.5 Scaling private and blended finance	78
3.2.6 Redirecting harmful subsidies	81
3.3 Pathway III: Developing technical capacity	83
3.3.1 Applying restoration standards	83
3.3.2 Strengthening monitoring and reporting capacity	86
3.3.3 Turning restoration data into knowledge and action	88

4

CHAPTER 4

From restoration ambition to lasting recovery	91
--	----

References	94
-------------------	----



Figures

1	The restorative continuum	3
2	Underlying causes and indirect and direct drivers of biodiversity loss and nature's decline	12
3	Proportion of degraded land over total land area, 2019	14
4	Restoration commitments by region and country	26
5	Restoration progress by region, ecosystem composition and country	33
6	Terrestrial ecosystems under restoration by region	34
7	Countries with the largest reported terrestrial area under restoration	35
8	Freshwater (inland water) ecosystems under restoration by region	38
9	Countries with the largest reported freshwater (inland water) area under restoration	39
10	Marine and coastal ecosystems under restoration by region	40
11	Countries with the largest reported marine and coastal area under restoration	41
12	Public and private finance flows to restoration in 2022	44
13	Restoration implementation, commitments, target and degradation by ecosystem	47
14	Convention reporting cycles	68
15	Principles that underpin the United Nations Decade on Ecosystem Restoration	85

Tables

1	Data sources used to compile and assess figures on degradation, commitments and restoration progress	9
2	Area of land degraded between 2015 and 2019 by region	14
3	Wetland area lost and degraded in freshwater (inland water) ecosystems since c. 1970 by wetland category	16
4	Wetland area lost and degraded in marine and coastal ecosystems since c. 1970 by wetland category	18



University students measure the size of mangroves at the Mangrove Restoration Project in Anavilundawa, Sri Lanka
© UNEP/TODD BROWN

Boxes

1	What is (effective) ecosystem restoration?	2
2	What is land degradation?	13
3	Why are peatlands important for the climate?	16
4	Costa Rica: National Biological Corridors Programme for ecological connectivity	21
5	The Rio Conventions	24
6	Large-scale ecosystem restoration efforts in China	36
7	Flagships leading the way	37
8	Examples of emerging private sector finance for restoration	44
9	Land tenure and restoration	55
10	#GenerationRestoration Schools	60
11	Cities too can revive nature: the wider Milan urban area	63
12	Youth as key agents of change	64
13	The benefits of collaboration	67
14	Aligning restoration planning and reporting in Kenya	69
15	Strengthening national restoration information systems in Latin America and the Caribbean	69
16	Spatial planning: planning effective restoration interventions	70
17	Integrating agricultural land and soil restoration into land degradation neutrality, biodiversity and climate action: FAO–UNCCD guidance	71
18	Free, prior and informed consent	74
19	Restoration mitigation potential: the role of removals	79
20	Scaling blended finance through GEF-9	80
21	From recognition to investment: connecting World Restoration Flagships with finance	81
22	Respectful returns: Restoring resilience to endemic salmon ecosystems in Canada in partnership with Indigenous Peoples	84
23	SCOR SE: Using insurance to de-risk restoration	86
24	Framework for Ecosystem Restoration Monitoring	88
25	Saint Lucia: Building a national restoration monitoring system through the Small Island Developing States Restoration Flagship	89

Community members transport Polyepis saplings for reforestation day in Ecuador
© UNEP/TODD BROWN



Acknowledgements

AUTHORS

Yelena Finegold (FAO), Alice Caravani (FAO), Zhuo Cheng (FAO), Matheus Couto (FAO), Yhasmin Mendes De Moura (FAO), Gregory Obiang Ndong (FAO), Cristiane Sater Melnik (FAO), Temitope Adelola (FAO), Natalia Alekseeva (UNEP), Jamal Annagylyjova (FAO), Hasan Awad (FAO), Q”apaj Conde (CBD), Julian Fox (FAO), Kim Friedman (FAO), David Sabogal Habedank (FAO), Pablo Innecken Zuniga (FAO), Regina Kipper (CBD), Hana Matsubara (FAO), Kieran Mooney (CBD), Carmen Morales (FAO), Ann-Kathrin Neureuther (UNEP), Soalandy Rakotondramanga (FAO), Andrea Romero (FAO), Ashley Steel (FAO), Bethanie Walder (SER).

The authors would also like to thank the following individuals and organizations for preparing the boxes in the publication and for providing technical and peer reviews:

CONTRIBUTORS

Carolina Gallo Granizo (FAO), Marieke Sandker (FAO), Feras Ziadat (FAO), James Lomax (UNEP), Lucia Gonzalez Martinez (UNEP), Georgina Athamandia Avlonitis (UNEP), Reuben Gergan (UNEP), Jacob Salcone (UNEP) and Natalie Olsen (UNEP), Jennifer Hong (CBD), Oliver Agoncillo (ASEAN Centre for Biodiversity), Erika Adelaida Peñuela Vega (Humboldt Institute), Emily Gonzales (Parks Canada Agency), Tim Christophersen (Salesforce/UN Decade on Ecosystem Restoration Advisory Board), Maria-Chiara Pastore (Forestami) and Lee Wray-Davis (Foundation for Ecological Restoration).

Thanks to Maryia Kukharava (FAO) and Gaia Kouki (FAO) for communications support, and to Giulia Salvetti (UNEP) and Ann-Kathrin Neureuther (UNEP) for coordination within UNEP. Editors: Amanda Lawrence-Brown (UNEP) and Ruth Duffy (FAO). Front cover: Beverley McDonald (UNEP).

TECHNICAL REVIEWERS

Christophe Besacier (FAO), Till Neef (FAO), Tiina Vahanen (FAO), Zhimin Wu (FAO), Anastacia Bakhita Amondi Oduor (UNEP), Michaela Bhend (UNEP), Susan Gardner (UNEP), Eric Mugo Githua (UNEP), Gabriel Grimsditch (UNEP), Salman Hussain (UNEP), Jason Jabbour (UNEP), Jane Muriithi (UNEP), Doreen Lynn Robison (UNEP), Ignacio Sanchez Diaz (UNEP), Sari Sherman (UNEP), Sushant Shrestha (UNEP), Steven Stone (UNEP), Joseph Appiott (CBD), Khalil Walji (Landscape Alliance), George Gann (SER), Cara Nelson (IUCN), Sara Minelli (UNCCD), Daniela Guarás (The Convention on Wetlands), Helen Ding (WRI), Laura Nery Silva (UNEP-WCMC).

The authors would also like to thank all colleagues from the Publishing Units of FAO, UNEP and SCBD who supported the online publishing workflow system.

This publication was produced with the financial support of the United Nations Decade on Ecosystem Restoration supported by Germany’s Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety through the International Climate Initiative and the Ministry of Foreign Affairs of Denmark, and Accelerating Innovative Monitoring for Nature Restoration (AIM4NatuRe) Initiative within the Accelerating Innovative Monitoring for Forests (AIM4Forests) Programme implemented in collaboration with the United Kingdom of Great Britain and Northern Ireland.

Abbreviations

AFR100	African Forest Landscape Restoration Initiative
ASEAN	Association of Southeast Asian Nations
CBD	Convention on Biological Diversity
CEM	Commission on Ecosystem Management
COP	Conference of the Parties
CO₂	carbon dioxide
ECCA30	Eastern Europe, Caucasus and Central Asia Forest Landscape Restoration Initiative
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FERM	Framework for Ecosystem Restoration Monitoring
FPIC	free, prior and informed consent
FRA	FAO Global Forest Resources Assessment
GEF	Global Environment Facility
GLWD	Global Lakes and Wetlands Database
Gt	gigatonne
ha	hectare
ILUP	integrated land use planning
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IUCN	International Union for Conservation of Nature
KMGBF	Kunming-Montreal Global Biodiversity Framework
km²	square kilometre
LDN	land degradation neutrality
Mha	million hectares
NBSAPs	National Biodiversity Strategies and Action Plans
NDCs	nationally determined contributions
NRDS	National Report Data System
SCBD	Secretariat of the Convention on Biological Diversity
SCOR SE	Société Commerciale de Réassurance, Societas Europaea
SDG	Sustainable Development Goal
SER	Society for Ecological Restoration
TFFF	Tropical Forest Forever Facility
UN	United Nations
Ecosystem Restoration Decade	United Nations Decade on Ecosystem Restoration (2021–2030)
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States dollar



Native chuveirinho plants catch the last light of sunset
in a Cerrado grassland landscape in Goiás, Brazil
© UNEP/TODD BROWN

NATURE'S COMEBACK

KEY MESSAGES



KEY MESSAGE 01

Ecosystem restoration delivers multiple benefits, making it a key solution to interconnected challenges.

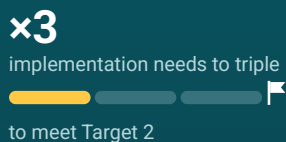
Research indicates that restoring just 15 percent of global priority areas could capture and store an amount equivalent to 30 percent of the total increase in atmospheric carbon dioxide since the Industrial Revolution and help avoid 60 percent of species extinctions. Restoring productive ecosystems is essential to supporting food security; agroforestry alone has the potential to increase food security for 1.3 billion people. Actions that prevent, halt and reverse degradation are needed if we are to keep global warming below 2 °C.



KEY MESSAGE 03

The world is off track to meet global restoration targets and national commitments by 2030.

Countries have committed to restore approximately 1 billion hectares, but implementation needs to triple to meet Target 2 of the Kunming-Montreal Global Biodiversity Framework, which aims to restore 30 percent of degraded ecosystems. Beyond tracking hectares, it is important to understand how restoration contributes to ecosystem integrity, connectivity, biodiversity and ecosystem services. The immediate challenge is to convert existing ambition into funded, effective and measurable action.



KEY MESSAGE 02

Restoration is underway at an unprecedented scale.

Approximately 252 million hectares are documented as being under restoration worldwide in 2026, representing the largest restoration effort to date and demonstrating substantial implementation during the first half of the United Nations Decade on Ecosystem Restoration. The World Restoration Flagships are linked to the creation of over 1 million green jobs, and millions of people have been trained in restoration activities. Globally, there is potential to create upwards of 32 million new jobs related to restoring our ecosystems by 2030. Political ambition has grown – including new restoration pledges for freshwater (inland water) ecosystems, mangroves, coral reefs and kelp forests.

252 million
hectares under restoration
worldwide

1 million+
green jobs linked to World
Restoration Flagships

32 million+
potential new jobs by 2030



KEY MESSAGE 04

Progress is variable across ecosystems and countries.

Reported restoration lags far behind ambition in both freshwater (inland water) and marine and coastal ecosystems, yet these ecosystems are degrading at the highest rates. By contrast, on land, reported terrestrial areas under restoration have reached almost half of the global restoration target, indicating engagement, investment and information, as well as the need to replicate good practices in new areas. Challenges in reporting across ecosystems highlight critical needs for accelerated implementation and improved data availability.



KEY MESSAGE 05

Lasting restoration depends on people, rights and local leadership.

Secure tenure, meaningful participation and respect for the rights, knowledge and leadership of Indigenous Peoples and other rights holders are essential to delivering equitable and enduring benefits for nature and people. Restoration is most effective when planned across whole landscapes and seascapes, with diverse stakeholders joining forces to deliver multiple benefits for people, livelihoods and the environment. New finance models targeted at local levels and Indigenous territories, enabling restoration from the ground up, should be encouraged.



KEY MESSAGE 07

Building a global movement, generating political support and developing technical capacity are the foundations for accelerating action.

The second half of the Ecosystem Restoration Decade must turn restoration ambition into sustained action. Political support is critical to reshape the policies, incentives and decisions that drive degradation, creating the conditions for economies and societies to invest in recovery. Strengthening rights and leadership at all levels, alongside the capacity to implement, monitor, learn and adapt, is essential. Restoration must become a key part of how societies plan and shape their future.



KEY MESSAGE 06

Finance must enable restoration rather than constrain it.

This requires a transition from individual projects towards restoration economies capable of sustaining ecological recovery, livelihoods and long-term value at scale. Annual restoration finance must increase more than fourfold, from USD 64 billion to USD 296 billion a year to meet 2030 targets, through public investment, private and blended finance, risk-sharing and other innovative financial instruments. Beyond mobilizing finance, a transformational change is needed: economic and financial systems should recognize the value of ecosystem services and natural capital, while reducing the incentives and financial flows that drive unsustainable resource use and ecosystem degradation. Building restoration economies can help shift the balance from an economy that depletes nature to one that values and invests in its recovery.

USD 64 → 296 billion

a year



KEY MESSAGE 08

Thirty percent by 2030 is a milestone, not the end of the restoration journey.

Where degradation continues, further damage must be prevented and recovery accelerated. Where restoration has begun, it must be sustained long enough to restore ecosystem functions, biodiversity and benefits for people. The legacy of the Ecosystem Restoration Decade should therefore be measured not only by the area brought under restoration, but by whether countries are better equipped to keep ecosystems healthy and sustain their recovery for generations to come.



Introduction

Ecosystem restoration is a critical response to the interconnected challenges of biodiversity loss, ecosystem degradation and climate change. By recovering ecosystems, their functions and biodiversity, restoration can strengthen ecological integrity and connectivity, support livelihoods and resilience, and sustain nature's benefits to people, while advancing global environmental and development goals.

Yet ecosystem degradation continues at a scale and pace that threatens the natural systems that our societies and economies depend on (IPBES, 2019). This challenge demands a decisive response, making the acceleration of effective restoration an urgent global priority – even more so in the context of limiting overshoot (UNEP, 2024a).

The United Nations Decade on Ecosystem Restoration (2021–2030) was established to support and scale efforts to prevent, halt and reverse ecosystem degradation through effective restoration (Box 1). Its strategy identifies three mutually reinforcing pathways: building a global movement, generating political support, and developing technical capacity (UNEP and FAO, 2020). The adoption of the Kunming-Montreal Global Biodiversity Framework (KMGBF) further strengthened global ambition, particularly Target 2, under which Parties collectively committed to ensure that by 2030 at least 30 percent of degraded terrestrial, freshwater (inland water) and coastal and marine ecosystems are under effective restoration. Countries have already pledged to restore about 1 billion hectares of degraded land through national plans, multilateral agreements and regional and global initiatives. To date, documented implementation nears 252 million ha (Mha), representing 25 percent of national commitments to restore ecosystems by 2030. The pressing challenge is to translate these commitments into funded, effective and measurable action.

Reliable monitoring is essential to determine whether this ambition is being realized. The Framework for Ecosystem Restoration Monitoring (FERM), developed by the Food and Agriculture Organization of the United Nations (FAO) and the Ecosystem Restoration Decade Task Force on Monitoring, supports compilation and voluntary sharing of restoration information, and serves as the official monitoring platform of the Ecosystem Restoration Decade. It supports countries in reporting on the KMGBF Target 2 headline indicator on area under restoration (FAO, 2025a). Building on this monitoring infrastructure, the KMGBF Target 2 brings together countries, international

BOX 1

“

Ecosystem restoration is the process of halting and reversing degradation to improve ecosystem functions and services and recover biodiversity.

What is (effective) ecosystem restoration?

Ecosystem restoration is the process of halting and reversing degradation to improve ecosystem functions and services and recover biodiversity. It encompasses a continuum of practices, shaped by local conditions, national contexts and societal choices (UNEP, 2021). As illustrated in Figure 1, this continuum ranges from reducing the drivers of degradation and repairing environmental damage to supporting natural recovery and restoring native ecosystems. Restoration complements, rather than substitutes for, the conservation of intact ecosystems and the rapid reduction of the pressures driving their loss (FAO *et al.*, 2021).

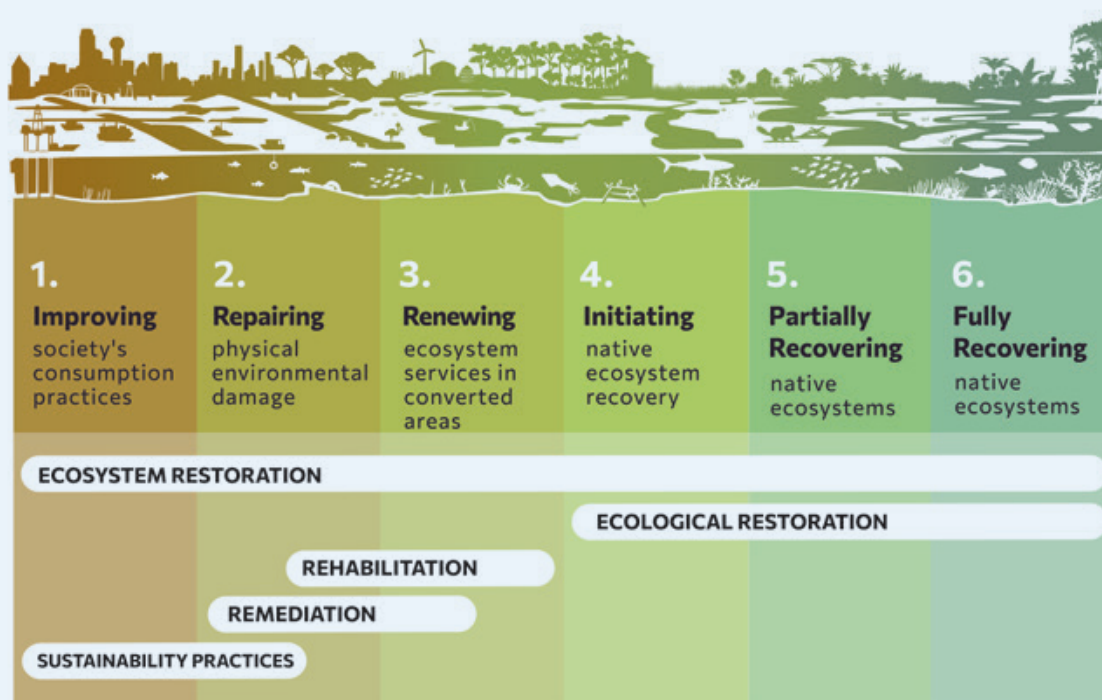
Effective restoration should be guided by agreed principles and standards; it should result in an appropriately balanced and sustainable net gain for biodiversity, ecosystem health and integrity, and human well-being (FAO, SCBD and SER, 2024). It is a multifaceted process encompassing assessment, planning, implementation, ongoing management, monitoring, evaluation and adaptive management. As an example, the Standards of Practice for Ecosystem Restoration developed for the Ecosystem Restoration Decade provide practical guidance for effective restoration across different biomes, sectors and regions (Nelson *et al.*, 2024).

Sources: UNEP. 2021. *Becoming #GenerationRestoration: Ecosystem restoration for people, nature and climate*. Nairobi. <https://wedocs.unep.org/rest/api/core/bitstreams/46a4fa7c-9e80-4ac8-a8dc-9eec85095bf9/content>; FAO, IUCN CEM and SER. 2021. *Principles for ecosystem restoration to guide the United Nations Decade 2021–2030*. Rome, FAO. <https://openknowledge.fao.org/bitstreams/b234f058-9f77-4481-b870-a7fa2e7ad5f8/download>; FAO, SCBD and SER. 2024. *Delivering restoration outcomes for biodiversity and human well-being – Resource guide to Target 2 of the Kunming-Montreal Global Biodiversity Framework*. Rome, Montreal, Canada and Washington, D.C. <https://openknowledge.fao.org/handle/20.500.14283/cd2925en>; Nelson, C.R., Hallett, J.G., Romero Montoya, A.E., Andrade, A., Besacier, C., Boerger, V., Bouazza, K. *et al.* 2024. *Standards of practice to guide ecosystem restoration – A contribution to the United Nations Decade on Ecosystem Restoration 2021–2030*. Rome, FAO, Washington, D.C., SER and Gland, Switzerland, IUCN CEM. <https://doi.org/10.4060/cc9106en>

organizations, scientific institutions, Indigenous Peoples¹ and other restoration actors to strengthen methodologies, indicators, national capacity, knowledge exchange and data interoperability across ecosystems (FAO, 2025b). These efforts are helping to establish more coherent national and global systems for tracking where restoration is taking place while strengthening the capacity to assess whether it is delivering effective and lasting outcomes for nature and people. Since restoration is country- and community-driven, monitoring must be adapted to national and local circumstances, priorities and ecological conditions.

At the halfway point of the Ecosystem Restoration Decade, this report takes stock of global restoration progress and identifies the actions needed to accelerate implementation through 2030 and sustain restoration beyond the Decade. Drawing on data from multiple sources, including national reporting to the Rio Conventions and other multilateral environmental agreements, FERM and other global sources, this report presents the first comprehensive global assessment of restoration progress, documenting achievements to date, assessing whether the world is on track to achieve Target 2 and global

¹ This document follows United Nations drafting practice, according to the General Assembly Resolution 77/203 on the Rights of Indigenous Peoples and as used in the UN Editorial Manual, in which the term “Indigenous Peoples” is capitalized. Within the context of the Convention on Biological Diversity (CBD), in decision XII/12, the Conference of the Parties decided to use the terminology “indigenous peoples and local communities”. Accordingly, this formulation is used exclusively in relation to CBD processes and instruments. In the case of FAO, it follows the 2023 joint call by the United Nations Permanent Forum on Indigenous Issues, the Expert Mechanism on the Rights of Indigenous Peoples and the Special Rapporteur on the Rights of Indigenous Peoples, which urged Member States and United Nations entities to avoid conflating Indigenous Peoples with other groups by the rationale that such conflation may obscure or diminish the distinct status, collective rights, identities and contributions of Indigenous Peoples as recognized by the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).

Figure 1 The restorative continuum

Source: Gann, G.D., McDonald, T., Walder, B., Aronson, J., Nelson, C.R., Hallett, J.G., Guariguata, M.R. et al. 2026. International principles and standards for the practice of ecological restoration. Third edition. *Restoration Ecology*, 34(S2): e70441. <https://doi.org/10.1111/rec.70441>

restoration commitments, and identifying practical solutions for accelerating restoration at scale. It is intended to complement the findings of the global report on collective progress in the implementation of the Kunming-Montreal Global Biodiversity Framework (CBD, 2026a),² building on its assessment across all KMGBF targets and adding a dedicated focus on ecosystem restoration. This report is structured around two central questions:

QUESTION 1

- 1 What progress has been made towards restoring degraded ecosystems and reaching global targets and national commitments?

QUESTION 2

- 2 What actions are needed to accelerate effective restoration at scale?

² The global report estimates 193 Mha under restoration. This differs from the estimate in the present report due to the different cut-off date used when accessing the Seventh National Reports portal, meaning a different number of countries were considered. While the CBD global report considers data from 53 Parties, this report includes data from 62 Parties.



Community members at work in a Cerrado grassland near Cavalcante, Brazil
© UNEP/TODD BROWN

The assessment covers terrestrial, freshwater (inland water)³ and marine and coastal ecosystems and considers the ecological, social, financial and institutional dimensions of restoration. It recognizes that effective restoration depends not only on the area brought under restoration but also on societal aspects. Secure land tenure, gender equality, meaningful participation and respect for the rights, knowledge and leadership of Indigenous Peoples and other groups, including traditional communities, are therefore integral to equitable and lasting outcomes.

The findings provide a snapshot of a rapidly evolving restoration landscape and evidence base. Differences in definitions, monitoring capacity, ecosystem coverage and reporting methods affect both what can be measured and the assessment of progress. Chapter 2 examines the scale and drivers of degradation, restoration commitments, documented implementation, and finance across ecosystems, before identifying the principal gaps. Chapter 3 then sets out how the three pathways of the Ecosystem Restoration Decade can help address these gaps and accelerate restoration at scale. Chapter 4 concludes by bringing these findings together and reflecting on what is needed to move from restoration ambition to lasting recovery, during the second half of the Decade. As implementation and national monitoring systems develop, future editions of this assessment can update and refine the evidence, providing an increasingly robust picture of progress towards 2030 and beyond.

³ This report refers to freshwater (inland water) consistent with Steel et al. (2025).



A great blue heron is seen in a wetland area in
Seattle, United States of America
© UNEP/TODD BROWN



Global progress in ecosystem restoration

This chapter assesses global progress in ecosystem restoration, outlining the methods and data used before examining the drivers and scale of degradation, restoration commitments and implementation across terrestrial, freshwater (inland water) and marine and coastal ecosystems. It also reviews restoration finance and identifies the principal gaps that must be addressed to accelerate progress towards 2030.

2.1 Restoration data compilation

No single global reporting process provides a complete picture of ecosystem restoration. In this report, estimates of ecosystem degradation, restoration commitments and restoration progress are drawn from five types of data: (i) data reported directly by countries through government-endorsed reporting processes (country report); (ii) restoration-related data extracted through a systematic analysis of country reports (official document review); (iii) data reported directly by restoration initiatives (initiative-level reporting data); (iv) country-level estimates derived from global assessments and reports (assessment-based estimates); and (v) data reported by countries through voluntary restoration frameworks and initiatives (voluntary country report). Some data sources combine more than one data type. These data are drawn from multiple sources, including the Rio Conventions, the Convention on Wetlands, global and regional assessments, national reports, and other reporting frameworks (Table 1).

The sources differ in their mandates, definitions, ecosystem coverage and reporting purposes, and time periods. Some sources focus on specific ecosystem types, such as forests through the FAO Global Forest Resources Assessment (FRA) 2025 or wetlands through the Convention on Wetlands National Report Data System (NRDS) and Ramsar Sites Information Service. Others provide broader coverage across multiple ecosystem types, such as the Convention on Biological Diversity Seventh National Reports. Bringing these sources together shows, for the first time, a comprehensive picture of

“

The most comprehensive restoration estimates to date.

documented restoration commitments and progress, while also revealing differences in the availability, scope and coverage of information across ecosystems and reporting processes.

The resulting estimates herein are the most comprehensive restoration estimates to date. When interpreting the data, there are important considerations. First, an area reported as being under restoration indicates that restoration activity has been documented by national governments and reported in international processes or through initiative-level reporting; it does not necessarily demonstrate that the ecosystem has recovered or that the activity meets the full requirements for effective restoration under the KMGBF Target 2 guidance documents. Second, the figures reflect what is monitored and reported. Reporting is least complete for freshwater (inland water) and marine and coastal ecosystems, so restoration already underway may not yet be captured, and differences between commitments, degradation and implementation reflect information gaps as well as implementation gaps. Third, regional and country figures describe where documented commitments and restoration are located; they are not rankings of ambition or performance, and absolute areas should be read alongside differences in land area and reporting context. Fourth, the estimates of degradation, commitments and implementation are not spatially matched; differences between successive global assessments reflect improvements in data as well as real change. The CBD's global report similarly notes that the lack of consistently applied definitions and methods for monitoring restoration and degradation currently limits collective analysis of progress (CBD, 2026a).

National commitment data provide insights on political will, but the data compilation for this report did not disaggregate the data by ecosystem for nationally determined contributions (NDCs), National Biodiversity Strategies and Action Plans (NBSAPs), and land degradation neutrality (LDN) reports; it is assumed the commitments are for terrestrial ecosystems. Future reports plan to disaggregate the national commitment data by ecosystem. Global ambition is set by global initiatives such as the Bonn Challenge and the Freshwater Challenge to build political support and encourage national commitments. The Freshwater Challenge, the Kelp Forest Challenge, and the Mangrove and Coral Reef Breakthroughs are considered in this report together with the national commitment data to gauge restoration progress towards these targets and to show overall ambition. But the data from these and other global and regional initiatives were not included in the consolidated commitments database because these initiatives do not provide country-level disaggregation of the commitments.

One challenge of compiling data from multiple sources is the potential for overlap between sources. Countries may report the same or overlapping restoration areas through biodiversity plans, climate commitments, land degradation neutrality targets and voluntary initiatives. In most cases, sufficiently detailed spatial information is not available to identify or quantify this overlap. Summing these figures without accounting for overlap could therefore result in the same area being counted more than once.

To address this risk when estimating restoration commitments, the methodology applied in this chapter follows a conservative approach. This approach retains only the single highest quantitative commitment identified for each country across all sources, based on the assumption that the country's largest commitment encompasses, or potentially overlaps with, its smaller commitments. For restoration progress, the consolidated estimate uses

Table 1 Data sources used to compile and assess figures on degradation, commitments and restoration progress

Data source	Responsible organization/ Convention	Data type	Primary ecosystem focus	Ecosystem degradation	Restoration commitments	Restoration progress
Bonn Challenge and associated regional initiatives (i.e. AFR100 and Initiative 20x20)	IUCN, the Government of Germany	Voluntary country report	Terrestrial (forest and landscapes)		✓	
CBD National Biodiversity Strategies and Action Plans (NBSAPs) and national targets	CBD	Official document review	All ecosystems		✓	
CBD Seventh National Reports (Target 2, Indicator 2.1)	CBD	Country report	All ecosystems			✓
Convention on Wetlands National Report Data System (NRDS)	Convention on Wetlands	Country report	Freshwater (inland water); marine and coastal		✓	✓
Coral Reef Breakthrough	ICRI, GFCR, UN Climate High-Level Champions	Initiative-level reporting data	Marine and coastal (coral reef)		✓	
Global Forest Resources Assessment (FRA) 2025	FAO	Country report	Terrestrial (forests)		✓	✓
Framework for Ecosystem Restoration Monitoring (FERM)	FAO	Initiative-level reporting data	All ecosystems			✓
Freshwater Challenge	Voluntary, country-led coalition	Voluntary country report	Freshwater (inland water)		✓	
Global Wetland Outlook 2025	Convention on Wetlands	Assessment-based estimates; country report	Freshwater (inland water); marine and coastal	✓		
Kelp Forest Challenge	Kelp Forest Alliance	Initiative-level reporting data	Marine and coastal (kelp forests)		✓	
Land Degradation Neutrality (LDN)	UNCCD	Official document review	Terrestrial and freshwater (inland water)	✓	✓	
Mangrove Breakthrough	GMA, UN Climate Change High Level Champions	Initiative-level reporting data	Marine and coastal (mangrove)		✓	
Nationally determined contributions (NDCs)	UNFCCC	Official document review	All ecosystems		✓	
Ramsar Sites Information Service (RSIS)	Convention on Wetlands	Country report	Freshwater (inland water); marine and coastal			✓

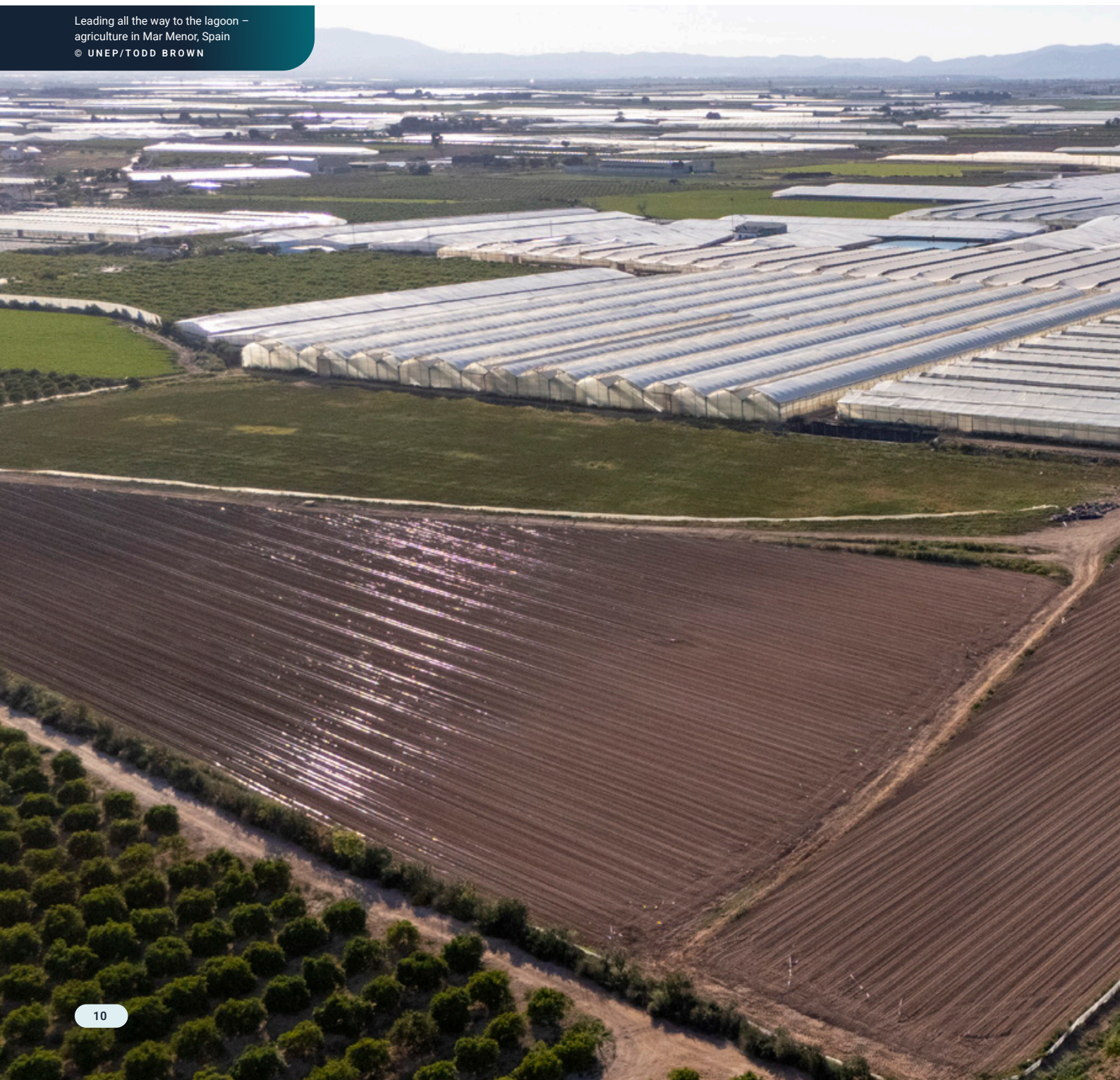
Notes: CBD = Convention on Biological Diversity; GFCR = Global Fund for Coral Reefs; GMA = Global Mangrove Alliance; ICRI = International Coral Reef Initiative; UNCCD = United Nations Convention to Combat Desertification; UNFCCC = United Nations Framework Convention on Climate Change; IUCN = International Union for Conservation of Nature. For restoration commitments reported through LDN targets, NDCs and NBSAPs, the analysis draws on data previously extracted and compiled in the Global restoration commitments and pledges (UNCCD and Global Restoration Information Hub, 2026). An additional comprehensive analysis of NBSAPs and national targets was undertaken to complement and update the NBSAPs information available in the 2024 database.

Sources: Authors' own elaboration, based on data from AFR100. 2026. Countries. In: *AFR100*. [Cited 29 March 2026]. <https://afr100.org/countries>; Bonn Challenge. 2026. Current pledges. In: *Bonn Challenge*. [Cited 29 March 2026]. <https://www.bonnchallenge.org/pledges>; Initiative 20x20. 2026. *Initiative 20x20*. [Cited 29 March 2026]. <https://initiative20x20.org>; CBD. 2026. Online Reporting Tool. [Accessed in March 2026]. <https://ort.cbd.int>; UNCCD. 2026. UNCCD Data Dashboard. [Accessed in February 2026]. <https://data.unccd.int>; UNCCD and Global Restoration Information Hub. 2026. In: *Global Restoration Commitments*. [Accessed on 26 June 2026]. <https://grih.info/commitments>; Convention on Wetlands. n.d. National Report Data System. [Accessed on 5 June 2026]. <https://nrds.ramsar.org>; ICRI. 2023. The Coral Reef Breakthrough. In: *ICRI*. [Cited 26 September 2026]. <https://icriforum.org/documents/coral-breakthrough>; FAO. 2025. Global Forest Resources Assessment 2025. In: *FAO*. [Cited 5 January 2026]. <https://fra-data.fao.org/assessments/fra/2025>; FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: *FAO*. [Cited 29 April 2026]. <https://ferm.fao.org>; Freshwater Challenge. 2023. About the challenge. In: *Freshwater Challenge*. [Cited 29 March 2026]. <https://www.freshwaterchallenge.org/about-the-challenge>; Convention on Wetlands. 2025. *Global Wetland Outlook 2025*. Gland, Switzerland, Secretariat of the Convention on Wetlands. <https://doi.org/10.69556/GWO-2025-eng>; Eger, A., Aguirre, J.D., Altamirano, M., Arafah-Dalmau, N., Arroyo, N.L., Bauer-Civiello, A.M., Beas-Luna, R. et al. 2024. The Kelp Forest Challenge: A collaborative global movement to protect and restore 4 million hectares of kelp forests. *Journal of Applied Phycology*, 36: 951–964. <https://doi.org/10.1007/s10811-023-03103-y>; UNCCD. 2019. UNCCD Data Dashboard: Sustainable Development Goal (SDG) Indicator 15.3.1. [Accessed on 27 March 2026]. <https://data.unccd.int/land-degradation>. CC BY-NC 2.0; Mangrove Breakthrough. n.d. Mangrove Breakthrough. [Cited 26 September 2026]. <https://www.mangrovebreakthrough.com/about>; Ramsar. n.d. Ramsar Sites Information Service. [Accessed on 31 March 2026]. <https://rsis.ramsar.org>

the highest reported value for each country, by ecosystem type, across the reporting sources considered. This approach reduces – but cannot eliminate – the risk of double counting.

The estimates of ecosystem degradation, restoration commitments and restoration progress presented in this chapter are aligned with Chapter 2 of *The State of the World's Forests 2026* (FAO, 2026a). They are also consistent in approach with the CBD global report (CBD, 2026a), which draws on the same Seventh National Reports. Differences from the area under restoration reported in the CBD global report mainly reflect this report's later cut-off date, which allowed more national reports to be included, and its wider range of sources. The CBD global report also notes that monitoring coverage is higher for terrestrial ecosystems than for inland water and marine and coastal ecosystems, consistent with the gaps identified in this report.

Leading all the way to the lagoon –
agriculture in Mar Menor, Spain
© UNEP/TODD BROWN



2.2

A world under pressure

“

Over the past 50 years, ecosystems have been degraded at an unprecedented rate, undermining the natural systems that sustain life, economies and human well-being.

Over the past 50 years, ecosystems have been degraded at an unprecedented rate, undermining the natural systems that sustain life, economies and human well-being. Forests, wetlands, grasslands, rivers, and marine and coastal ecosystems regulate local and global climates, support biodiversity, secure water quality and availability, underpin agrifood systems and protect communities from extreme events (IPBES, 2019). Yet they continue to become lost or degraded faster than they can recover (Halpern *et al.*, 2008; Simpson *et al.*, 2021; UNCCD, 2022).

Understanding the scale, distribution and drivers of degradation is essential for assessing whether restoration commitments and implementation are proportionate to need. This section examines the principal drivers and the extent of degradation across terrestrial, freshwater (inland water) and marine and coastal ecosystems, as well as the implications of ecological connectivity for effective restoration.

2.2 A WORLD UNDER PRESSURE

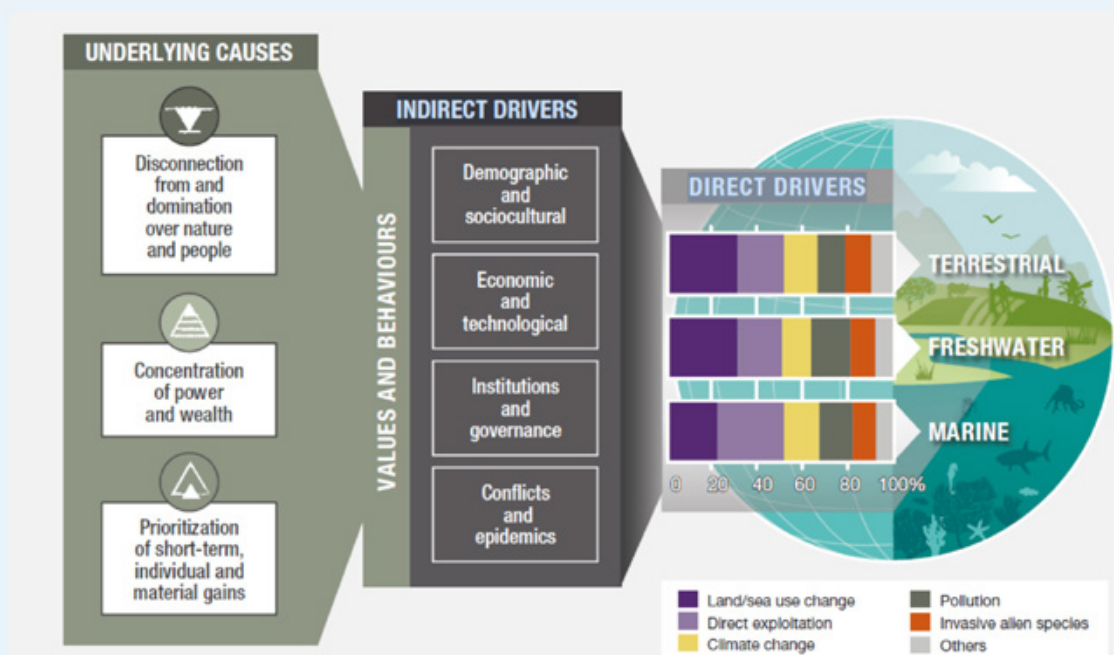
2.2.1

The drivers of ecosystem degradation

The drivers of ecosystem degradation operate at three interconnected levels (IPBES, 2024) (Figure 2). Direct drivers are the physical pressures that alter ecosystems and include land- and sea-use change, overexploitation of natural resources, climate change, pollution, and invasive species. These pressures are shaped by indirect drivers, including economic, demographic, technological and governance systems. Underlying causes are deeply rooted patterns – of how societies relate to and value nature, and of how power and wealth are distributed – which shape and reinforce the direct and indirect drivers.

The relative importance of these drivers differs by ecosystem. Land-use change is the dominant driver in terrestrial and freshwater (inland water) ecosystems, while unsustainable resource use has a larger impact on marine ecosystems (IPBES, 2019; FAO, 2026b) (Figure 2). In practice, drivers rarely operate independently. The rising and sometimes competing demands on land and water are driven by population growth, urbanization, infrastructure development, and energy needs, and aggravated by climate change. Land conversion, resource extraction, pollution and climate change can interact and reinforce one another, increasing the risk that ecosystems cross ecological thresholds and become more difficult or costly to restore.

Restoration must therefore address both ecological damage and its underlying causes. Site-level interventions may support recovery, but for a lasting outcome, it is necessary to reduce the pressures that caused the degradation and to reform the policies, incentives and economic activities that sustain these pressures.

Figure 2 Underlying causes and indirect and direct drivers of biodiversity loss and nature's decline

Source: IPBES. 2024. Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Bonn, Germany. <https://doi.org/10.5281/zenodo.11382215>

2.2 A WORLD UNDER PRESSURE

2.2.2 Ecosystem loss and degradation in terrestrial ecosystems

Terrestrial ecosystems – including forests, grasslands, croplands, drylands, urban and other land environments – sustain food production, regulate water and climate systems, provide habitats for a majority of species, and sustain the livelihoods of billions of people worldwide. They are under severe and accelerating pressure from land-use change (including deforestation and agricultural expansion), overexploitation, infrastructure development and climate-related hazards such as fires, floods and droughts (FAO and UNEP, 2020; FAO, 2022). These pressures often interact, amplifying impacts that compromise ecosystem integrity and connectivity (IPBES, 2019).

“
Over 15 percent of
global land surface
is degraded.”

Agricultural land covers approximately 4.8 billion ha, more than one-third of the global land area. More than 60 percent of degradation occurs on agricultural lands, including cropland and pastureland. Human activities have degraded an estimated 480 Mha of cropland and 560 Mha of pastureland. This reduces soil fertility and the capacity of land to absorb rainfall, moderate floods, and recharge groundwater. It can also affect surrounding natural ecosystems through pesticide contamination, pollinator decline and damage to soil biodiversity (FAO, 2025c).

Terrestrial ecosystems are under growing pressure from disturbances. Every year, around 261 Mha of land are affected by fire. Additionally, 50 Mha of forests are affected by insects, diseases and severe weather. These disturbances shape how countries identify where restoration is needed. In the FRA 2025 report, some countries define areas in need of restoration by referencing disturbance events. Specifically, for fire-related disturbances, the terms used include “fire-affected areas”, “burnt forests” and “forest areas affected by wildfires” (FAO, 2026a).

Forests have also experienced extensive and continuing loss. Since 1990, an estimated 489 Mha of forest have been lost worldwide through deforestation (FAO, 2025d), which is equivalent to half the size of China. While the deforestation rate has slowed – from 17.6 Mha per year in the 1990s to 10.9 Mha per year between 2015 and 2025 – it continues at a pace that far exceeds any recovery. Primary forests, which are biodiversity hotspots, saw their global area shrink by 110 Mha between 1990 and 2025, a loss that is irreversible within any human lifetime (FAO, 2025d). This highlights the need to conserve ecosystems in good condition, particularly biodiversity hotspots.

Drylands, grasslands and savannah ecosystems are similarly affected by overgrazing, land conversion and increasing climate variability (IPBES, 2018). These systems, which support a large share of the world's pastoral populations and possess biodiversity adapted to arid conditions, are particularly vulnerable to degradation processes such as desertification and soil erosion (IPCC, 2019; UNCCD 2022).

To provide a consistent country-level overview, this report uses data from Sustainable Development Goal (SDG) Indicator 15.3.1 to estimate the extent of land degradation (Box 2; Figure 3; Table 2). The assessment draws on the 2022 United Nations Convention to Combat Desertification (UNCCD) reporting cycle and covers 167 countries, with country-reported data for 120 countries and UNCCD estimates for a further 47. Updated national reporting for 2016–2023 is expected following the close of the next reporting cycle in November 2026.

BOX 2



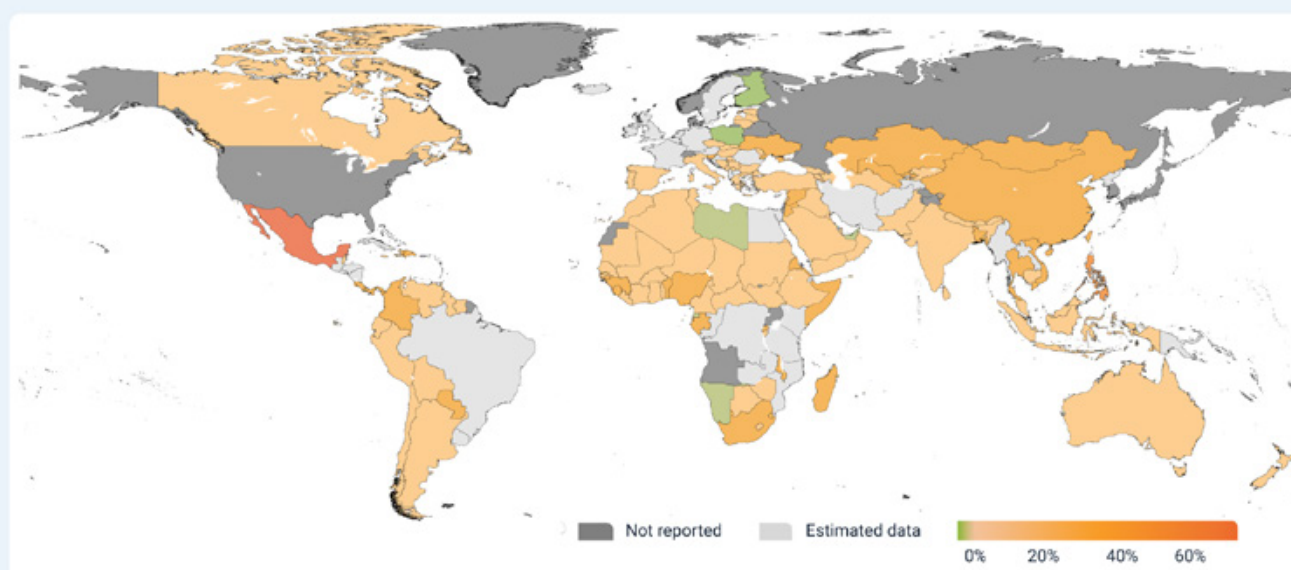
In every case, the losses extend outwards from the degraded system itself into the communities, economies and other ecosystems it once sustained.

What is land degradation?

The United Nations Convention to Combat Desertification defines land degradation as the result of human-induced actions that exploit land, causing its utility, biodiversity, soil fertility and overall ecosystem health to decline. In every case, the losses extend outwards from the degraded system itself into the communities, economies and other ecosystems it once sustained. SDG Indicator 15.3.1 – proportion of land degraded over total land area – is calculated using this definition. It is also a component indicator for Target 2 of the Kunming-Montreal Global Biodiversity Framework. Figure 3 shows the indicator value by country from 2019. New data will be reported by countries at the end of 2026.

Sources: UNCCD. n.d. Land Degradation Neutrality. In: *UNCCD*. [Cited 16 June 2026]. <https://www.unccd.int/land-and-life/land-degradation-neutrality/overview>; UNCCD. 2019. UNCCD Data Dashboard: Sustainable Development Goal (SDG) Indicator 15.3.1. [Accessed on 27 March 2026]. <https://data.unccd.int/land-degradation?grouping=SDG>

The available data indicate that unsustainable land-use and management practices have degraded more than 1.56 billion ha of land globally, that is over 15 percent of the global land surface (UNCCD, 2019) (Table 2). Between 2015 and 2019, at least 100 Mha of previously healthy and productive land were degraded each year. These figures provide a global benchmark for terrestrial degradation, although the forthcoming UNCCD reporting cycle, where updated estimates will be reported up to 2023, may revise both its scale and geographical distribution.

Figure 3 Proportion of degraded land over total land area, 2019

Refer to the disclaimer on the copyright page for the names and boundaries used in this map. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area is not yet determined.

Source: Adapted from UNCCD. 2019. UNCCD Data Dashboard: Sustainable Development Goal (SDG) Indicator 15.3.1. [Accessed on 27 March 2026]. <https://data.unccd.int/land-degradation?grouping=SDG>

Table 2 Area of land degraded between 2015 and 2019 by region

Region	2015			2019			Increase in land degradation, 2015–2019 (Mha)	Proportion of degraded land area – Net change (%)
	Total land area (Mha)	Total degraded land area (Mha)	Proportion of degraded land area (%)	Total land area (Mha)	Total degraded land area (Mha)	Proportion of degraded land area (%)		
Africa	2 859	174	6.1	2 838*	334	11.8	160	+5.7
Asia	3 074	482	15.7	3 074	583	19	101	+3.3
Europe	512	58	11.3	512	75	14.7	18	+3.3
North and Central America	1 149	206	17.9	1 149	253	22	47	+4.1
Oceania	842	68	8.1	842	73	8.6	5	+0.6
South America	1 742	183	10.5	1 742	245	14.1	62	+3.6
Global	10 178	1 171	11.5	10 157	1 563	15.4	392	+3.9

Notes: The reported increase in degraded land between 2015 and 2019 should be interpreted with caution. The magnitude of change is likely influenced not only by underlying biophysical dynamics but also by methodological developments between United Nations Convention to Combat Desertification reporting cycles, including revisions to baseline assessments, improved data availability and advances in remote sensing and mapping techniques, which may result in more comprehensive identification of degraded areas over time. Numbers may not sum to the totals indicated due to rounding.

* The decrease in total land area registered in Africa in 2019 is largely because Uganda did not report a value in 2019.

Source: Authors' own elaboration, based on data from UNCCD. 2019. UNCCD Data Dashboard: Sustainable Development Goal (SDG) Indicator 15.3.1. [Accessed on 27 March 2026]. <https://data.unccd.int/land-degradation?grouping=SDG>

2.2 A WORLD UNDER PRESSURE

2.2.3

Ecosystem loss and degradation in freshwater (inland water) ecosystems

Rivers, lakes, wetlands, peatlands and the water that connects them are among the most biodiverse – and most rapidly disappearing – ecosystems on Earth (WWF, 2024; Convention on Wetlands, 2025a). They supply drinking water, support inland biodiversity, sustain fisheries that provide critical nutrition to hundreds of millions of people, moderate floods and droughts, and are home to around one-third of all vertebrate species. Despite their importance, freshwater (inland water) ecosystem decline is less visible than other environmental challenges, even though it represents one of the most severe forms of ecosystem degradation worldwide (Convention on Wetlands, 2025a).

The challenge is inherently transboundary. The world's 310 international river basins cover 47 percent of the global land surface and are home to 52 percent of the global population across 150 countries (McCracken and Wolf, 2019). A global synthesis by Reid *et al.* (2019) using multiple datasets shows that freshwater (inland water) biodiversity decline has outpaced terrestrial and marine systems. Wetlands are disappearing three times faster than forests, while monitored freshwater (inland water) vertebrate populations have declined at more than twice the pace of terrestrial and marine vertebrate populations (Tickner *et al.*, 2020).

Freshwater (inland water) ecosystems face multiple, interacting pressures: overexploitation; pollution; modification of natural water flows; destruction of habitat; invasive species; emerging chemical pollutants; and climate change (Dudgeon *et al.*, 2006; Reid *et al.*, 2019) (Box 3). River regulation and fragmentation are particularly widespread with almost half of global river volume affected by flow regulation or fragmentation, much of it associated with dams (Reid *et al.*, 2019). Effective restoration therefore frequently requires actions across entire river basins or catchments, including restoring environmental flows, water quality, habitat connectivity and riparian ecosystems.

Since 1970, 384 Mha of freshwater (inland water) ecosystems have been lost, including 177 Mha of inland marshes and swamps, 123 Mha of lake ecosystems and 80 Mha of peatlands (Convention on Wetlands, 2025a) (Table 3). Historical losses of wetlands have been primarily for conversion to croplands, as well as to protect soils in particular forms and prevent vector-borne diseases (Fluet-Chouinard *et al.*, 2023).

Not all recorded wetland loss represents land that can now be restored. Loss ranges from changes in hydrology and ecosystem condition to complete conversion to urban or other infrastructure. Some wetlands retain significant restoration potential, while others have experienced irreversible changes to soil chemistry, watershed hydrology or native biodiversity. Wetland loss is therefore an important indicator of ecosystem decline, but it is not equivalent to the area of degraded wetland that is suitable for restoration.

Estimating the current extent of global wetlands remains a challenge, particularly for forested and small wetlands that are difficult to delineate using remote sensing (Convention on Wetlands, 2025a), and no comprehensive, globally consistent quantitative estimate of inland wetland degradation is currently available. A 2024 survey by the World Wetland Network, covering more than 400 wetlands in 80 countries, estimated that 63 percent were in poor or fair condition, with the remainder assessed as in good condition

“



63 percent of freshwater (inland water) ecosystems are degraded.

(WWN, 2025). This report uses the 63 percent of wetland in poor and fair condition as an indicative estimate of degraded remaining wetland area (Table 3). Two measures are therefore used to characterize the potential scale of freshwater (inland water) restoration needed. The first is the area of wetland lost in recent years, which is more precisely documented than historical loss. Recently drained areas are generally more likely to be restorable than those drained centuries ago, although not all of them will be. The second is the degraded area of remaining wetlands, which is more likely restorable, but that must be roughly estimated based on a series of assumptions.

BOX 3

500 Mha
around 3 to 4 percent of the Earth's land surface
PEATLANDS

up to 1/3
of the world's soil carbon
PEATLANDS

~4 percent
of all global anthropogenic annual emissions
DEGRADED PEATLANDS

Why are peatlands important for the climate?

Although peatlands cover only around 3 to 4 percent (500 Mha) of the Earth’s land surface, they store up to one-third of the world’s soil carbon – twice the amount stored in all the Earth’s forest biomass combined.

Despite their importance for climate regulation, peatlands remain among the most under-represented ecosystems in national restoration commitments and reports. Degraded peatlands currently account for approximately 4 percent of all global anthropogenic annual emissions – excluding emissions from peatland fires, which add substantially to the total. Drier conditions following peatland drainage further compound this problem, increasing the risk and frequency of wildfires. This illustrates the cyclical relationship between ecosystem degradation and climate change: degradation contributes to climate change through emissions, while climate change in turn drives further degradation.

Sources: Joosten, H. 2009. *The Global Peatland CO₂ Picture – Peatland status and drainage related emissions in all countries of the world*. Ede, Kingdom of the Netherlands, Wetlands International. <https://www.wetlands.org/publication/the-global-peatland-co2-picture>; Scharlemann, J.P.W., Tanner, E.V.J., Hiederer, R. and Kapos, V. 2014. Global soil carbon: understanding and managing the largest terrestrial carbon pool. *Carbon Management*, 5(1): 81–91. <https://doi.org/10.4155/cmt.13.77>; UNEP. 2022. *Global Peatlands Assessment – The State of the World’s Peatlands: Evidence for Action toward the Conservation, Restoration, and Sustainable Management of Peatlands*. Nairobi. <https://doi.org/10.59117/20.500.11822/41222>

Table 3 Wetland area lost and degraded in freshwater (inland water) ecosystems since c. 1970 by wetland category

	Area remaining (Mha)	Area lost (Mha)	Area degraded (Mha)
Freshwater (inland water)	Lakes	123	171
	Rivers and streams	4	37
	Inland marshes and swamps	177	291
	Peatlands	80	315
	Total	384	814

Note: Degraded area is estimated at 63 percent of the current area.

Sources: Authors’ own elaboration based on: for area lost, data from the Convention on Wetlands. 2025. *Global Wetland Outlook 2025: Valuing, conserving, restoring and financing wetlands*. Gland, Switzerland. <https://doi.org/10.69556/GWO-2025-eng>; for area degraded, the sample of global wetlands in poor or fair conditions from WWN. 2025. *State of the World’s Wetlands: 2024 Participatory Survey*. https://worldwetland.network/wp-content/uploads/2025/06/En_WorldWetlandsSurvey_2025_web.pdf

2.2 A WORLD UNDER PRESSURE

2.2.4

Ecosystem loss and degradation in marine and coastal ecosystems

The ocean covers approximately 70 percent of the Earth's surface, supports the broadest diversity of life on the planet and plays a central role in regulating the global climate. Between 2011 and 2020, it absorbed approximately 26 percent of total carbon dioxide emissions, making it one of the planet's most important carbon sinks (Friedlingstein *et al.*, 2022).

Furthermore, marine and coastal ecosystems support the livelihoods of around 600 million people and are essential to food security (FAO, 2026b). Coastal ecosystems – mangroves, seagrass beds, coral reefs, salt marshes and tidal flats – help reduce wave energy, buffer communities from storms and shoreline erosion, and provide important nursery grounds and feeding habitats that support fisheries production (Guannel *et al.*, 2016; Perricone *et al.*, 2023). Climate change is a fast-growing pressure on marine and coastal ecosystems. The ocean has absorbed more than 90 percent of the excess heat trapped in the climate system since 1970; it is warming, acidifying, and losing oxygen, while marine heatwaves have likely doubled in frequency since 1982 (IPCC, 2019).

“



Between 60 and 66 percent of marine areas may be degraded, unsustainably used or experiencing cumulative impacts.

The 2023–2024 El Niño, compounded with exceptionally high ocean temperatures (WMO, 2024), contributed to conditions associated with the most extensive global coral bleaching event recorded to date. This 2024–2025 event affected approximately 84 percent of the world's coral reef area (NOAA, 2026), and was part of a broader period of global coral heat stress since 2018 that has affected up to 87 percent of reef locations (Spady *et al.*, 2026). The developing 2026 El Niño further underscores how natural climate variability can compound the effects of anthropogenic warming, increasing risks to temperature-sensitive marine and coastal ecosystems (NOAA, 2026).

The sustainability of fisheries is another critical consideration. In 2023, 37.6 percent of assessed fish stocks were classified as overfished (FAO, 2026b). Outcomes vary substantially across major fishing areas, underscoring the need to strengthen sustainable fisheries management and expand implementation of the ecosystem approach to fisheries (FAO, 2008).

Pollution adds to these pressures. Nutrient and chemical pollution, dead zones from industrial activities, oil spills and toxic dumping have degraded marine water quality (IPBES, 2019). An estimated 75 to 199 million tonnes of plastic have accumulated in the ocean, affecting at least 267 species, including 86 percent of marine turtles and 43 percent of marine mammals (IPBES, 2019; UNEP, 2021b). The combined result is that around 59 percent of the ocean is now experiencing increasing cumulative human impact (Halpern *et al.*, 2019), while only a very small fraction, approximately 3 percent, remains relatively intact (Obura *et al.*, 2021).

Data from the Global Wetland Outlook 2025 estimate that since 1970, an estimated 27.9 Mha of coastal ecosystems have been lost. These losses include around 12.5 Mha of coral reefs, 7 Mha of seagrass, 3.9 Mha of tidal flats and 2 Mha of mangroves (Table 4).

Unlike terrestrial ecosystems, no harmonized global assessment of degraded marine and coastal area is currently available. Existing assessments suggest that between 60 and 66 percent of marine areas may be degraded, unsustainably used or experiencing cumulative impacts (IPBES, 2019; Campagne *et al.*, 2023). For the indicative comparison presented in Table 4, this report uses 63 percent – the midpoint of that range – as a provisional estimate of degraded marine and coastal area.

More consistent global and national assessments of marine and coastal ecosystem condition are required to establish credible baselines, identify priorities and track restoration outcomes. As for freshwater (inland water) ecosystems, further refinements by region and wetland type will be valuable.

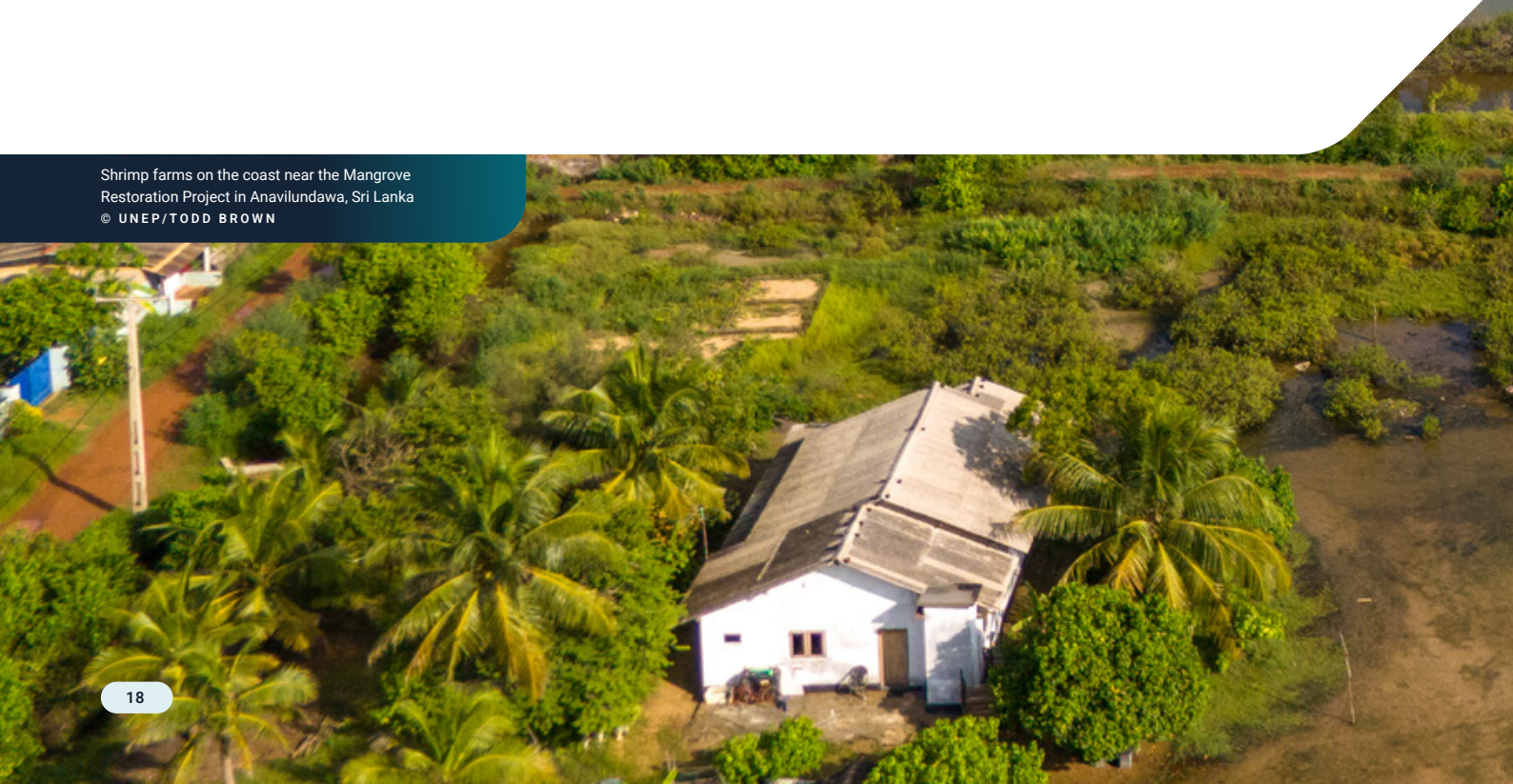
Table 4 Wetland area lost and degraded in marine and coastal ecosystems since c. 1970 by wetland category

		Area remaining (Mha)	Area lost (Mha)	Area degraded (Mha)
Marine and Coastal classified in wetland category	Seagrass	36	7	23
	Kelp forests	2	2	1
	Coral reefs	35	12	22
	Estuaries	28	0.1	18
	Salt marshes	5	0.9	3
	Mangroves	15	2	10
	Tidal flats	13	4	8
	Total	133	28	84

Notes: Degraded area is estimated at 63 percent of the current area. Numbers may not sum to the totals indicated due to rounding.

Sources: Authors' own elaboration based on: for Seagrass Blume, A., Pertiwi, A.P., Lee, C.B. and Traganos, D. 2023. Bahamian seagrass extent and blue carbon accounting using Earth Observation. *Frontiers in Marine Science*, 10: 1058460. <https://doi.org/10.3389/fmars.2023.1058460>; for kelp forests, Mora-Soto, A., Palacios, M., Macaya, E.C., Gómez, I., Huovinen, P., Pérez-Matus, A., Young, M. et al. 2020. A high-resolution global map of giant kelp (*Macrocystis pyrifera*) forests and intertidal green algae (Ulrophyceae) with Sentinel-2 imagery. *Remote Sensing*, 12(4): 694. <https://doi.org/10.3390/rs12040694>; for coral reefs, Lyons, M.B., Murray, N.J., Kennedy, E.V., Kovacs, E.M., Castro-Sanguino, C., Phinn, S.R., Acevedo, R.B. et al. 2024. New global area estimates for coral reefs from high-resolution mapping. *Cell Reports Sustainability*, 1(2): 100015. <https://doi.org/10.1016/j.crsus.2024.100015>; for estuaries Lehner, B., Anand, M., Fluet-Chouinard, E., Tan, F., Aires, F., Allen, G.H., Bousquet, P. et al. 2025. Mapping the world's inland surface waters: an upgrade to the Global Lakes and Wetlands Database (GLWD v2). *Earth System Science Data*, 17(6): 2277–2329. <https://doi.org/10.5194/essd-17-2277-2025>; for salt marshes, Worthington, T.A., Spalding, M., Landis, E., Maxwell, T.L., Navarro, A., Smart, L.S. and Murray, N.J. 2024. The distribution of global tidal marshes from Earth observation data. *Global Ecology and Biogeography*, 33(8): e13852. <https://doi.org/10.1111/geb.13852>; for mangroves, Bunting, P., Hilarides, L., Rosenqvist, A., Zanaga, D., Van De Kerchove, R., Lucas, R. and Vaz dos Santos, P.C.B. 2024. Global Mangrove Watch: Annual mangrove extent, version 4.0.19. [Accessed on 7 October 2026]. <https://doi.org/10.5281/zenodo.12756047>; for tidal flat, Murray, N.J., Phinn, S.R., DeWitt, M., Ferrari, R., Johnston, R., Lyons, M.B., Clinton, N., Thau, D. and Fuller, R.A. 2019. The global distribution and trajectory of tidal flats. *Nature*, 565: 222–225. <https://doi.org/10.1038/s41586-018-0805-8>; area lost, Convention on Wetlands. 2025. *Global Wetland Outlook 2025: Valuing, conserving, restoring and financing wetlands*. Gland, Switzerland. <https://doi.org/10.69556/GWO-2025-eng>; degraded area, average of values found in Campagne, C.S., Roy, L.A., Langridge, J., Claudet, J., Mongruel, R., Beillouin, D. and Thiébaud, É., 2023. Existing evidence on the impact of changes in marine ecosystem structure and functioning on ecosystem service delivery: a systematic map. *Environmental Evidence*, 12:13. <https://doi.org/10.1186/s13750-023-00306-1>; IPBES.2019. *Global assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Bonn, Germany. <https://doi.org/10.5281/zenodo.3831673>

Shrimp farms on the coast near the Mangrove
Restoration Project in Anavilundawa, Sri Lanka
© UNEP/TODD BROWN





2.2 A WORLD UNDER PRESSURE

2.2.5

From interconnected ecosystems to people

Terrestrial, freshwater (inland water) and marine and coastal ecosystems are connected by the flows of water (including rain), sediment and nutrients and by the movement of species. Degradation in one ecosystem can therefore create or intensify pressures elsewhere. When forests are cleared, terrestrial habitats become fragmented and rivers carry more sediment and nutrients downstream. When wetlands are drained, coastlines lose their natural buffers and fisheries lose their nursery grounds. Unsustainable agricultural practices can degrade soils, and cause pesticides, herbicides and fertilizers to run off into rivers and coastal ecosystems.

Just as degradation can spread through connected ecosystems, restoration benefits can extend well beyond the intervention site. Restoring wetlands does not simply return water to a degraded landscape; it can simultaneously sequester carbon, recharge aquifers, moderate floods and support the bird and fish populations on which downstream communities depend. Because freshwater (inland water) ecosystems are linked through watershed processes, restoration actions can generate benefits far beyond the immediate intervention site, enhancing ecological connectivity, ecosystem functions and ecosystem services across connected landscapes and watersheds (Steel *et al.*, 2025).

The priority is to avoid degradation whenever possible. Where degradation has occurred, lasting recovery depends on tackling the drivers of degradation rather than focusing solely on repairing ecological damage (IPBES, 2024). This principle is reflected in the response hierarchy of the UNCCD LDN framework – Avoid > Reduce > Reverse. Avoiding degradation by conserving ecosystems and reducing it through sustainable management deliver greater long-term benefits and are more cost-effective than reversing it after the fact (Orr *et al.*, 2017). Restoration is indispensable for land and waters already degraded, but it cannot substitute for preventing degradation in the first place.

On land and in marine environments, restoring and/or creating ecological corridors, for example by removing harmful infrastructure, to connect fragmented habitats is essential to ensure wildlife can move and access resources freely (Box 4). Scale and location matter: restoration is most effective when planned across whole landscapes and seascapes rather than as isolated sites reconnecting fragmented habitats and restoring flows of water, nutrients and species (Gann *et al.*, 2019).

Ecosystem restoration delivers multiple benefits, making it a key solution to interconnected challenges. Research indicates that restoring just 15 percent of global priority areas could capture and store 30 percent of carbon dioxide (CO₂) increase in the atmosphere since the Industrial Revolution and help avoid 60 percent of species extinctions (Strassburg *et al.*, 2020). Restoring productive ecosystems is essential to supporting food security, and agroforestry alone has the potential to increase food security for 1.3 billion people (UNEP, 2021a). Actions that prevent, halt and reverse degradation are needed to keep global warming below 2 °C.

Designing restoration interventions must also respond to and account for changing climatic conditions. Changes in temperature and rainfall, increasing droughts and fire risk, and shifting species distributions can affect the suitability and durability of interventions. Restoration strategies should assess future climate risks; select interventions appropriate to projected

“

Restoration is indispensable for land and waters already degraded, but it cannot substitute for preventing degradation in the first place.

BOX 4

55

biological corridors
COSTA RICA

2.1

Mha
42 percent of the country's
continental territory
COSTA RICA

500+

citizen scientists
COSTA RICA

Costa Rica: National Biological Corridors Programme for ecological connectivity

Costa Rica reports that it has achieved its national target to enhance biodiversity resilience through ecosystem connectivity and climate refuges by 2025. Its National Biological Corridors Programme manages 55 biological corridors, including 8 interurban corridors, covering 2.1 Mha, or 42 percent of the country's continental territory, and comprising around 20 percent of its forest cover. Forty corridors now have local biological corridor committees, and 39 have management plans. Climate refuges have been identified in 33 corridors, of which 22 have management plans that include or prioritize these areas within their management actions.

Innovation extends to monitoring: Costa Rica has rolled out a functional connectivity monitoring protocol that engages more than 500 citizen scientists using eBird and iNaturalist to track over 30 indicator wildlife species. The Ruta Los Maleku corridor is co-managed with Indigenous Peoples' groups, embedding their traditional knowledge in the protocol. This network demonstrates how low-cost citizen-science platforms, multistakeholder corridor committees and climate-integrated planning can deliver biodiversity, connectivity and climate-adaptation dividends at near-country scale.

Source: CBD and SER. (forthcoming). *Target 2 in focus – Global progress, regional trends and national experiences*. Montreal, Canada.

conditions; and incorporate adaptive management (Simonson *et al.*, 2021). The consequences of degradation extend beyond ecological systems to the cultural identity of specific groups, social cohesion and human well-being. They often fall disproportionately on groups in vulnerable situations, including women, smallholder farmers, Indigenous Peoples and pastoralists, whose livelihoods depend on healthy soils and water; coastal communities that rely on fish stocks and mangroves to protect them from storm surges; and Indigenous Peoples whose cultural identity and material survival are inseparable from the health of the ecosystems (FAO, 2023). For many Indigenous Peoples, degradation erodes the food and knowledge systems and territorial management practices built up over generations. The loss of sacred places, customary land uses and ecological relationships can have profound cultural and spiritual consequences. These

Community members in the Chunda Valley near Skardu demonstrate the glacial grafting process (UNDP GLOF II project)

© UNEP/TODD BROWN



impacts are not limited to communities living directly on degraded lands, where food and water insecurity are most immediate; they can also affect urban populations farther from the affected land (IPBES, 2018), for example, where land degradation upstream can contribute to flooding that damages roads, homes and human livelihoods.

Many Indigenous Peoples' food and knowledge systems have long recognized that people are not separate from nature but are nature itself. Yet dominant systems have come to treat humanity and nature as distinct, obscuring their existence as a single living system (Krenak, 2019). This disconnection from nature has contributed to the degradation of ecosystems by weakening recognition of the interdependence between human well-being and healthy ecosystems, ultimately undermining the ecosystem services on which human survival and livelihoods depend.

The economic consequences are also substantial. Every year, the world loses ecosystem services worth more than 10 percent of global economic output (IPBES, 2018). These costs are rarely reflected in the prices of the goods and activities that drive degradation; they instead fall on society as a whole, and most heavily on the local communities who live with the loss of fertile soils, clean water and natural resources. Degraded peatlands, for example, alone account for around 4 percent of global anthropogenic greenhouse gas emissions (UNEP, 2022), adding to climate impacts such as droughts, floods and heatwaves, whose costs fall on local communities, as well as on governments, businesses and households far from where the degradation occurred.

“

Ecosystem services
lost every year more than

10 percent

of global economic output

A community member after planting a tree
during reforestation day in Ecuador
© UNEP/TODD BROWN



2.3

Global restoration commitments

“

The scale of ecosystem degradation has demanded an equally ambitious global response.

The scale of ecosystem degradation has demanded an equally ambitious global response. Over the past decade, countries have made commitments to restore degraded lands and seascapes through international agreements, national strategies and regional initiatives. The proclamation of the United Nations Decade on Ecosystem Restoration in 2019 amounted to a global call to action: a recognition that preventing, halting and reversing ecosystem degradation had become a shared and urgent responsibility.

These commitments also need to be understood within a broader context of increasing and sometimes competing demands, aggravated by the pressures of climate change, on land, water and other natural resources. The same landscapes or seascapes may be expected to contribute simultaneously to biodiversity conservation and restoration, food production, renewable energy, livelihoods, and other development objectives. Translating commitments into implementation therefore requires integrated and participatory planning that can manage trade-offs and identify synergies among different land uses, while recognizing legitimate tenure and land rights, particularly where restoration affects the lands and territories on which local communities and other rights holders depend (see Section 3.2.1 and Section 3.2.3).

This section examines how global restoration commitments have evolved over time and their current status across reporting frameworks, regions and ecosystem types. It also considers how the scale and distribution of documented commitments are concentrated and where important gaps in ecosystem coverage and country-level reporting remain.

2.3 GLOBAL RESTORATION COMMITMENTS

2.3.1

Evolution of restoration commitments

Restoration commitments express the action that countries intend to undertake to restore degraded ecosystems or improve their condition over a specified period. Depending on the framework or national circumstance, commitments may be expressed qualitatively – for example, as an intention to restore ecosystems or improve their condition – or quantitatively, by specifying an area, percentage or other measurable objective to be achieved by a defined date. Quantitative commitments are particularly important for assessing the scale of national restoration ambition and how it evolves over time. National commitments should be distinguished from global restoration ambitions. Initiatives such as KMGBF Target 2, the Freshwater Challenge, the Mangrove Breakthrough and the Kelp Forest Challenge establish aggregate global ambitions, but these do not necessarily correspond to quantified pledges by individual countries.

The international restoration agenda has evolved substantially over the past 15 years. Aichi Biodiversity Target 15, established in 2010, was the first quantitative global biodiversity target for restoration, calling for the restoration of at least 15 percent of degraded ecosystems by 2020 (CBD, 2010). The Bonn Challenge, launched in 2011, subsequently established an area-based ambition to bring 150 Mha of degraded and deforested landscapes into restoration by 2020, later extended to 350 Mha by 2030.

Restoration also became increasingly incorporated into national planning and reporting under the Rio Conventions, including through Land Degradation Neutrality targets under the UNCCD, Nationally Determined Contributions under the United Nations Framework Convention on Climate Change (UNFCCC) and National Biodiversity Strategies and Action Plans under the CBD (Box 5).

BOX 5

1992

Rio Earth Summit

CBD · UNFCCC · UNCCD

The Rio Conventions

The Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC) and the United Nations Convention to Combat Desertification (UNCCD), which emerged from the 1992 Rio Earth Summit, address biodiversity, climate and land degradation. Together, the conventions promote ecosystem restoration and conservation, sustainable land management, and nature-based climate solutions as pathways to respond to these issues. These conventions each have their own instruments for implementing the objectives and goals of the convention at the national level.

The CBD requires countries to prepare National Biodiversity Strategies and Action Plans (NBSAPs) and to ensure that they are mainstreamed into the planning and activities of all those sectors whose activities can have an impact, whether positive or negative, on biodiversity. Through these strategies, some Parties to the Convention have set national targets for implementing the Global Biodiversity Framework at national level. Other Parties have set national targets outside of their NBSAPs (CBD, 2022).

The Nationally Determined Contributions (NDCs) to the UNFCCC are the climate action plans which each country submits under the Paris Agreement (UNFCCC, 2015). NDCs describe efforts by each country to reduce their greenhouse gas emissions and adapt to the impacts of climate change. Restoration is frequently included in NDCs as a nature-based solution for both climate change mitigation and adaptation (Crumpler *et al.*, 2024).

The Land Degradation Neutrality of the UNCCD was adopted as SDG Target 15.3, under which countries are to keep the quantity and quality of healthy, productive land stable or increasing rather than declining. Countries set their own voluntary national targets and actions through the UNCCD's target-setting programme.

Sources: Authors' own elaboration with data from: CBD. 2022. *Kunming-Montreal Global Biodiversity Framework*. Decision CBD/COP/DEC/15/4. Montreal, Canada. <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>; UNFCCC. 2015. *Paris Agreement*. FCCC/CP/2015/10/Add.1. Bonn, Germany. <https://unfccc.int/process-and-meetings/the-paris-agreement>; Crumpler, K., Wybieralska, A., Roffredi, L., Tanganelli, E., Angioni, C., Prosperi, P., Umulisa, V. *et al.* 2024. *Agrifood systems in nationally determined contributions: Global analysis – Key findings*. Rome, FAO. <https://doi.org/10.4060/cd3210en>

The adoption of the KMGBF in 2022 further strengthened the global policy framework for restoration. Target 2 calls for at least 30 percent of degraded terrestrial, inland water, and marine and coastal ecosystems to be under effective restoration by 2030, in order to enhance biodiversity and ecosystem functions and services, ecological integrity, and connectivity. In doing so, Target 2 broadens the restoration agenda across ecosystem types while placing greater emphasis on the ecological outcomes of restoration. Since the Fifteenth Conference of the Parties (COP15) of the CBD, Parties have been actively updating their NBSAPs and national targets to address ecosystem restoration. By February 2026, 72 percent of Parties had set at least one national target highly aligned with Target 2, with 85 percent addressing terrestrial ecosystems and 72 percent freshwater (inland water) ecosystems (CBD, 2026a).

“



Estimated restoration
commitments

1–1.7 billion ha
ALL ECOSYSTEMS

Alongside this evolution in the global policy framework, available assessments show that areas covered by quantified national restoration commitments have increased. At the start of the Ecosystem Restoration Decade, Sewell, van der Esch and Löwenhardt (2020) provided one of the first systematic assessments of commitments across multiple international frameworks, estimating between approximately 765 million and 1 billion ha committed by 115 countries, the former using a conservative approach intended to reduce overlap among reporting frameworks. Building on this database and applying the same low-estimate approach, the *Global Restoration Commitments and Pledges: 2024 Report* estimated national commitments covering between 937.4 million and 1.2 billion ha across 115 countries (Mariappan and Rodríguez Zumbado, 2024).

The database compiled for this report updated these earlier assessments by incorporating more recent national commitments and additional reporting sources, such as FRA and the Convention on Wetlands.⁴ Based on the information available in 2026, it identifies approximately 1 billion ha of restoration commitments under the conservative estimate – with the broader estimate reaching approximately 1.7 billion ha – across 160 countries. The timeframes of countries’ commitments and ambitions vary, although most are aligned with the year 2030. Throughout this report, the conservative estimate of 1 billion ha is used for analysis unless otherwise stated.

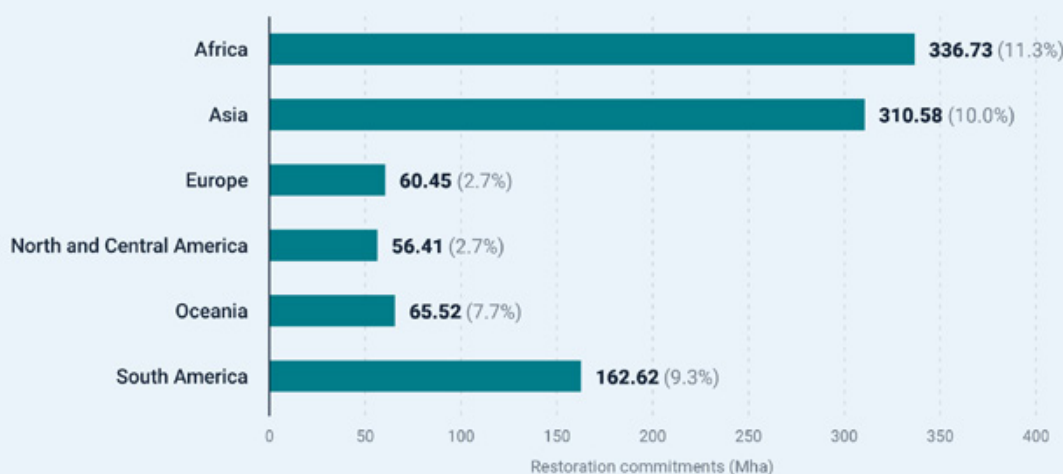
Figure 4 provides an overview of restoration commitments by region and country. Substantial commitments are observed across all regions, but there are also relevant differences between absolute area and commitments relative to total regional land area (Figure 4a). Documented commitments amount to 336.7 Mha in Africa and 310.6 Mha in Asia, equivalent to 11.3 and 10.0 percent of their respective land areas. Commitments in South America and Oceania are also substantial relative to regional land area, at 9.3 and 7.7 percent respectively, while the corresponding shares are lower in Europe and North and Central America. The map (Figure 4b) shows that quantified commitments are geographically widespread but vary considerably in magnitude among countries. It also highlights countries for which no quantified commitment was identified through the sources included in this assessment. The data indicate that the level of quantified restoration ambition assessed in this report across international and national frameworks has continued to increase since the beginning of the Ecosystem Restoration Decade, alongside the growing integration of restoration across biodiversity, land and climate policies. However, commitment data remain biased towards terrestrial ecosystems, reflecting both the historical focus of major restoration initiatives and limitations in ecosystem-specific reporting. Previous studies have indicated freshwater (inland water) and marine and coastal ecosystems together accounting for less than 1 percent of national commitments (Sewell, van der Esch and Löwenhardt, 2020).

Understanding this ecosystem dimension is central in the context of KMGBF Target 2, which explicitly encompasses terrestrial, freshwater (inland water) and marine and coastal ecosystems. The following subsections examine documented restoration commitments across these ecosystem groups, highlighting both the scale of commitments identified and the differences in reporting coverage among them.

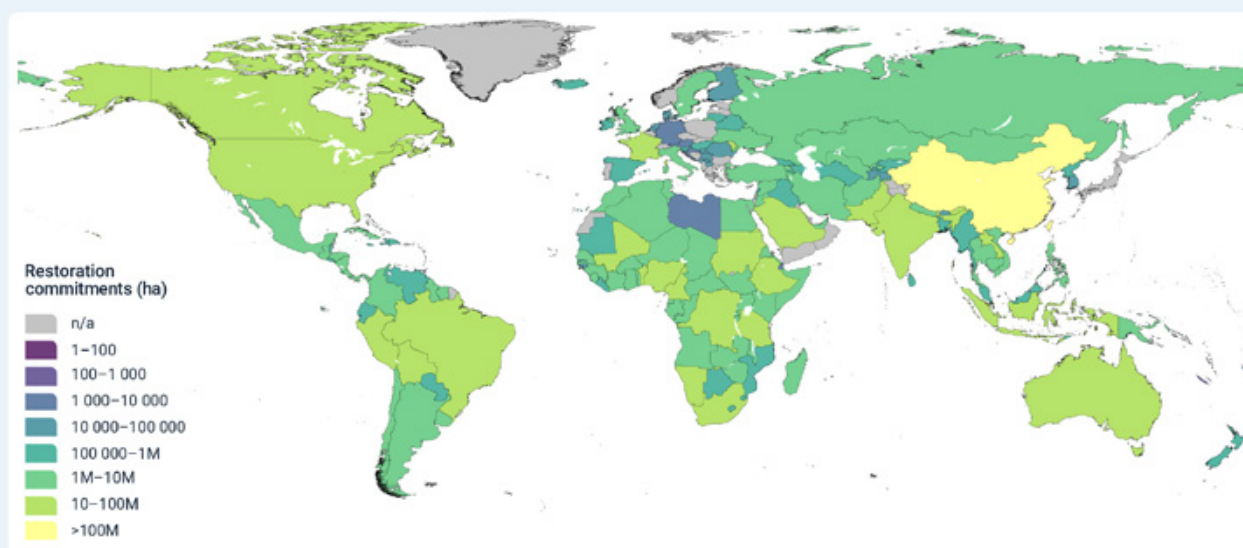
⁴ The assessment, however, does not include global ambition from the Freshwater and Kelp Forest Challenges and the Mangrove and Coral Reef Breakthroughs.

Figure 4 Restoration commitments by region and country

(a) Restoration commitments by region (in Mha) and relative to total regional land area (%)



(b) Geographical distribution of documented country-level restoration commitments



Refer to the disclaimer on the copyright page for the names and boundaries used in this map. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area is not yet determined.

Notes: The figure describes the scale and distribution of documented commitments and should not be interpreted as a ranking of regional restoration ambition or performance. Only countries that submitted pledges are included. To avoid double counting, each country's restoration pledge is attributed once. It includes only country submitted pledges (75 countries), excluding initiative-level and subnational pledges. Of these, 60 country pledges were sourced directly from the Bonn Challenge website. Regional initiative data were also analysed, with the African Forest Landscape Restoration Initiative (AFR100) and Initiative 20x20 being the only regional platforms providing country-level figures on their websites. Where discrepancies were identified between the Bonn Challenge and regional platform data for the same country (15 of the 75 countries: 9 under Initiative 20x20 and 6 under AFR100), figures from the regional platforms were used, as they provided more detailed information. The Gambia reported a pledge under the Bonn Challenge but not under AFR100.

Sources: Authors' own elaboration, based on data from FAO. 2025. Global Forest Resources Assessment 2025. In: FAO. [Cited 5 January 2026]. <https://fra-data.fao.org/assessments/fra/2025/>; AFR100. 2026. Countries. In: AFR100. [Cited 29 March 2026]. <https://afr100.org/countries>; Bonn Challenge. 2026. Current pledges. In: Bonn Challenge. [Cited 29 March 2026]. <https://www.bonnchallenge.org/pledges>; and Initiative 20x20. 2026. Countries. In: Initiative 20x20. [Cited 29 March 2026]. <https://initiative20x20.org>. Land Degradation Neutrality (LDN), Nationally Determined Contributions (NDCs), and National Biodiversity Strategies and Action Plans (NBSAPs) figures come from the UNCCD and Global Restoration Information Hub. 2026. In: Global Restoration Commitments. [Accessed on 26 June 2026]. <https://grih.info/commitments>. An additional comprehensive analysis of NBSAPs and national targets was undertaken to complete the NBSAPs analysis from the UNCCD and Global Restoration Information Hub, 2026. Total land area was extracted from FAO. 2024. FAOSTAT: Land use. [Accessed on 28 September 2026]. <https://www.fao.org/faostat/en/#data/RL>. Licence: CC-BY-4.0.

2.3 GLOBAL RESTORATION COMMITMENTS

2.3.2

Restoration commitments in terrestrial ecosystems

“



**157 countries
committed to
restore at least
980.2 Mha of land.**

Documented restoration commitments remain strongly concentrated in terrestrial ecosystems. National commitments reported under FRA 2025, LDN targets, NDCs, the Bonn Challenge and associated regional initiatives, NBSAPs and national biodiversity targets amount to at least 980.2 Mha across 157 countries. Together, these countries cover approximately 10.1 billion ha of land, including an estimated 1.5 billion ha of degraded land.

Terrestrial restoration ambition is geographically widespread, but its scale and relationship to regional land area varies (Figure 4). Commitments extend across all regions, with substantial areas documented for Africa, Asia and South America, while the relative scale of commitments also differs when considered relative to the regional total land area. These patterns reflect differences in regional context and restoration ambition and should be understood as a measure of the scale of documented ambition rather than as a comparison of restoration performance. The prominence of terrestrial commitments partly reflects the longstanding role of forests and landscapes in the global restoration agenda and the availability of established mechanisms for setting and reporting commitments. FRA 2025 indicates that 153 countries and areas, representing 69 percent of global forest area, provided quantitative commitments totalling more than 190 Mha (FAO, 2025d).

Regional and global initiatives have further reinforced this emphasis on forest and landscape restoration. The Bonn Challenge has mobilized commitments from 75 countries, including through regional initiatives such as AFR100, under which 34 African countries have committed around 130 Mha; and Initiative 20x20 in Latin America and the Caribbean, which seeks to bring more than 50 Mha into protection and restoration processes by 2030. Other initiatives extend this ambition across different regions, and include the Great Green Wall, ECCA30, the Agadir Commitment, RESULT Asia-Pacific and the ASEAN Green Initiative. The Middle East Green Initiative has established an ambition to plant or regenerate 50 billion trees, which it equates to restoring 200 Mha of land over the lifetime of the initiative (MGI, 2026).



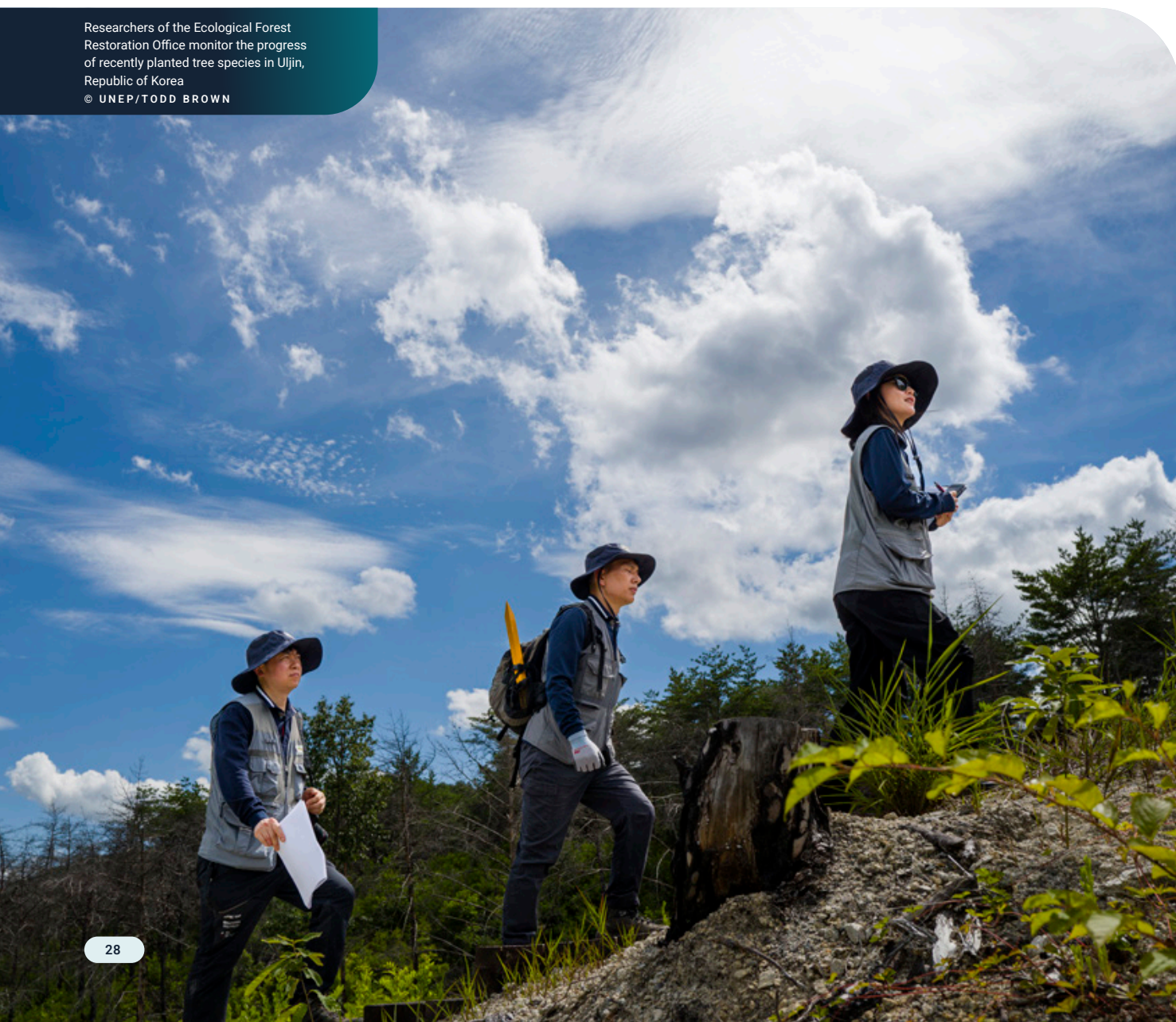
A team planting spekboom in the Eastern Cape of South Africa
© UNEP/TODD BROWN

Since many terrestrial ecosystem commitments are focused on tree-based approaches, safeguards must be put in place to ensure restoration is ecologically appropriate. Tree planting is not synonymous with ecosystem restoration, and inappropriate interventions – including single-species plantations or planting trees in naturally non-forested areas – can adversely affect biodiversity, fire regimes and water availability, making it essential to plant the right tree in the right place for the right purpose. Restoration approaches should be aligned to ecological and social context, using appropriate species and methods, and considering biodiversity, water and livelihoods, to build on sustainable and long-term impacts (FAO, 2026a; UNEP, 2021c).

Terrestrial restoration commitments nevertheless extend well beyond forests and tree-planting approaches. National commitments include addressing degradation in cropland, grassland and other productive landscapes, including improvements in soil fertility and land management, as well as measures aimed at recovering multiple ecosystem functions (Sewell, van der Esch and Löwenhardt, 2020). Restoration is also prominent in climate commitments: an FAO analysis of NDCs identifies restoration as the most prominent agrifood system climate solution, included by 90 percent of countries (Crumpler *et al.*, 2024).

In the next section, this report goes beyond terrestrial ecosystems and examines freshwater (inland water) restoration commitments.

Researchers of the Ecological Forest
Restoration Office monitor the progress
of recently planted tree species in Uljin,
Republic of Korea
© UNEP/TODD BROWN



2.3 GLOBAL RESTORATION COMMITMENTS

2.3.3

Restoration commitments in freshwater (inland water) ecosystems

Freshwater (inland water) restoration has gained greater prominence in the global restoration agenda, with ambition increasingly reflected in national commitments, international initiatives and policy frameworks. Based on additional information provided by countries through COP15 national reporting under the Convention on Wetlands, this assessment identifies approximately 4.1 Mha across ten countries committed for freshwater (inland water) restoration.

The documented commitments are geographically concentrated, with most of the quantified area identified in Europe. This pattern is strongly influenced by a commitment of approximately 3 Mha reported by Ukraine, while considerably smaller reported committed areas were identified through Africa, Asia, South America, and North and Central America (Convention on Wetlands, 2026). This assessment does not fully assess available information on national commitments provided through the biodiversity, climate change and land degradation conventions. It only includes limited commitments that could be identified and quantified through reporting to the Convention on Wetlands at COP15 in the optional comments. It is not a measure of the overall level of freshwater (inland water) ambition across regions.

Global and regional initiatives establish collective objectives that provide a better indication of global ambition to restore freshwater (inland water) ecosystems. The Freshwater Challenge, launched in 2023, aims to restore 300 000 km of degraded rivers and 350 Mha of degraded wetlands by 2030 and currently brings together 54 countries and the European Union.

Freshwater (inland water) restoration ambition is also increasingly reflected in regulatory and national policy frameworks. The European Union Nature Restoration Regulation requires restoration measures by 2030 on at least 30 percent of the total area of habitat types covered by the Regulation that are not in good condition, including relevant freshwater (inland water) habitats. It also requires Member States to contribute to restoring at least 25 000 km of rivers to a free-flowing state by 2030, alongside provisions for restoring drained peatlands under agricultural use.

National biodiversity, climate and land commitments provide further evidence of freshwater (inland water) restoration ambition that is not captured in the consolidated estimate. Freshwater (inland water) and wetland restoration appears in NDCs, NBSAPs and national biodiversity targets, as well as voluntary LDN targets and actions. These include commitments addressing wetlands and peatlands in countries such as Hungary, Senegal, South Africa, Uganda and the United Kingdom of Great Britain and Northern Ireland. Available NDC analysis also indicates increasing attention to the conservation and restoration of high-carbon wetlands (UNFCCC, 2025). Together, these examples suggest that freshwater (inland water) restoration ambition is more widespread than the 4.1 Mha compiled through reporting to the Convention on Wetlands.

Freshwater (inland water) commitments also illustrate the limitations of relying on a single area-based measure of restoration ambition. Wetland and peatland commitments are commonly expressed in hectares, whereas river restoration may be expressed in kilometres or through objectives related to connectivity and the removal of barriers.

“



The Freshwater Challenge aims to restore 350 Mha of degraded wetlands and 300 000 km of degraded rivers.

The available evidence therefore points to growing freshwater (inland water) restoration ambition, but also to major reporting and disaggregation gaps. Stronger ecosystem-specific targets and more consistent country-level reporting are needed to determine the scale, geographical distribution and implementation status of freshwater (inland water) commitments. Including national commitments disaggregated by freshwater (inland water) restoration from NBSAPs, LDN and NDCs in the global database will improve the global and regional understanding of political will. Additionally, strengthening reporting on rivers, wetlands and other inland waters would provide a more complete picture of the scale and distribution of freshwater (inland water) restoration ambition. Similar challenges arise for marine and coastal ecosystems, where restoration commitments are also expressed through a combination of national targets, international initiatives and ecosystem-specific objectives.

2.3 GLOBAL RESTORATION COMMITMENTS

2.3.4

Restoration commitments in marine and coastal ecosystems

Marine and coastal restoration ambition is increasingly articulated through initiatives focused on specific ecosystems: mangroves, coral reefs and kelp forests. Within the national data compiled for this assessment 10 Mha across 13 countries were identified as committed for restoration, based on additional information provided through COP15 national reporting under the Convention on Wetlands. This figure captures only the commitments identified through this source and is therefore narrower than the wider body of marine and coastal restoration commitments expressed through national and international frameworks.

The compiled data from the Convention on Wetlands are shaped by one large reported commitment. Europe accounts for almost all of the area captured in the assessment, largely reflecting the approximately 9.7 Mha reported by Ireland. Much smaller areas were identified in North and Central America, Africa and Asia, while none were identified through this source for South America or Oceania. The relative lack of country-level data limits the interpretation of these patterns.

Looking beyond this dataset reveals a different picture of the scale and diversity of marine and coastal ambition, totalling nearly 28 Mha. Several global initiatives have established restoration targets for mangroves, coral reefs and kelp forests. The Mangrove and Coral Reef Breakthroughs raised ambition to restore 15 Mha of mangroves and 12.5 Mha of shallow-water tropical coral reefs by 2030 (Mangrove Breakthrough, n.d.; ICRI, 2023). The Kelp Forest Challenge provides another expression of wider ambition, calling for the restoration of 1 Mha of kelp forests by 2040, including 200 000 ha by 2030 (Eger *et al.*, 2024).

Marine and coastal restoration ambition by countries is reflected in national climate and land commitments, although these sources were not comprehensively compiled for the ecosystem-specific estimate presented here. Mangrove restoration is particularly prominent among the commitments identified. Under voluntary LDN targets and actions, Indonesia has committed to rehabilitate 620 290 ha of mangroves by 2040, while Seychelles and Mauritius have commitments of 793 ha and 456 ha, respectively (UNCCD, n.d.). Mangrove restoration also appears in NDCs, including commitments by Senegal to restore 4 000 ha annually and by Costa Rica to have 2 000 ha of mangroves under restoration by 2030, at 500 ha per year, and 1 900 additional hectares by 2035 (Senegal, 2020; Costa Rica, 2025). More broadly, of the 148 NDCs submitted

“



The Mangrove and Coral Reef Breakthroughs and the Kelp Forest Challenge aim to restore 28 Mha.

by September 2023, 97 included coastal and marine nature-based solutions, encompassing the conservation and restoration of mangroves, seagrasses, salt marshes and other coastal wetlands (Lecerf *et al.*, 2023).

Overall, restoration commitments have expanded across international frameworks and national plans, demonstrating substantial and growing political ambition. However, the quantified commitments compiled in this assessment remain concentrated in terrestrial ecosystems and are dominated by forest, landscape and land-management measures. Freshwater (inland water) and marine and coastal commitments are less consistently quantified and reported, despite evidence of significant ambition through global initiatives.

Commitments also vary in scope and cannot be treated as directly equivalent simply because they are expressed in hectares. Aggregate commitment figures therefore indicate the scale of stated ambition, but not whether commitments are geographically aligned with degradation, ecologically appropriate, adequately financed or being implemented effectively. Section 2.4 examines the extent to which restoration commitments have been translated into documented action.



Community members plant young mangroves in the shallow waters of the Ciénaga de Mallorquín, helping restore habitat in the coastal wetland. Barranquilla, Colombia
© UNEP/TODD BROWN

2.4

Restoration in progress

The growth in restoration commitments indicates political ambition, but to what extent have these commitments been translated into implementation on the ground? This section synthesizes information from four major global reporting frameworks – CBD Seventh National Reports, FRA 2025, the Convention on Wetlands, and FERM – to produce a consolidated global estimate of restoration under implementation across terrestrial, freshwater (inland water) and marine and coastal ecosystems. Given that ecosystem restoration is a long-term process, the compiled data in this section include restoration activities between 1966 and 2026, with key developments reported between 2021 and 2025.

“

Restoration is underway at an unprecedented scale.

Restoration is underway at an unprecedented scale. Approximately 252 Mha worldwide are documented as being under restoration, representing the largest documented restoration effort to date and demonstrating substantial implementation during the first half of the Ecosystem Restoration Decade. Over 1 million green jobs have been created – with a potential 32 million new jobs by 2030 – and millions of people have been trained in restoration activities. Political ambition has grown – including new restoration pledges for freshwater (inland water) ecosystems, mangroves, corals and kelp forests.

Progress is variable across ecosystems and countries. Reported restoration lags far behind ambition in both freshwater (inland water) and marine and coastal ecosystems, yet these ecosystems are degrading at the highest rates, highlighting the critical need for accelerated implementation and improved data availability and reporting. On land, reported terrestrial area under restoration has reached almost half of the global restoration target, indicating engagement, investment and information, as well as the need to replicate good practices in new areas.

2.4 RESTORATION IN PROGRESS

2.4.1

The status of restoration progress

Approximately 252 Mha of ecosystems are documented as being under restoration worldwide (Figure 5), which is a quarter of the nearly 1 billion ha that countries have already committed to restore. It shows that countries need to triple implementation to meet the global restoration target of the KMGBF. This consolidated estimate, calculated using the highest reported value for each country by ecosystem across these four reporting frameworks, covers 149 countries with a combined land area of 12.1 billion ha, including approximately 1.5 billion ha of degraded land (Figure 5c).

Restoration progress is highly concentrated geographically. Asia accounts for the largest share by a wide margin, at 192.2 Mha (76.3 percent of the global total), followed by Africa with 36.3 Mha (14.4 percent), Europe with 9.1 Mha (3.6 percent), North and Central America with 5.8 Mha (2.3 percent), South America with 5.4 Mha (2.1 percent) and Oceania with 3.2 Mha (1.3 percent) (Figure 5a). The ecosystem composition of each region can be found in Figure 5b.

Breaking down by ecosystem realm, most of the reported restoration is on land, with terrestrial ecosystems accounting for approximately 232 Mha (92 percent of the total restoration area). Freshwater (inland water) ecosystems account for approximately 11 Mha (4 percent), while marine and coastal ecosystems account for approximately 5.7 Mha (2 percent). The remainder – approximately

“



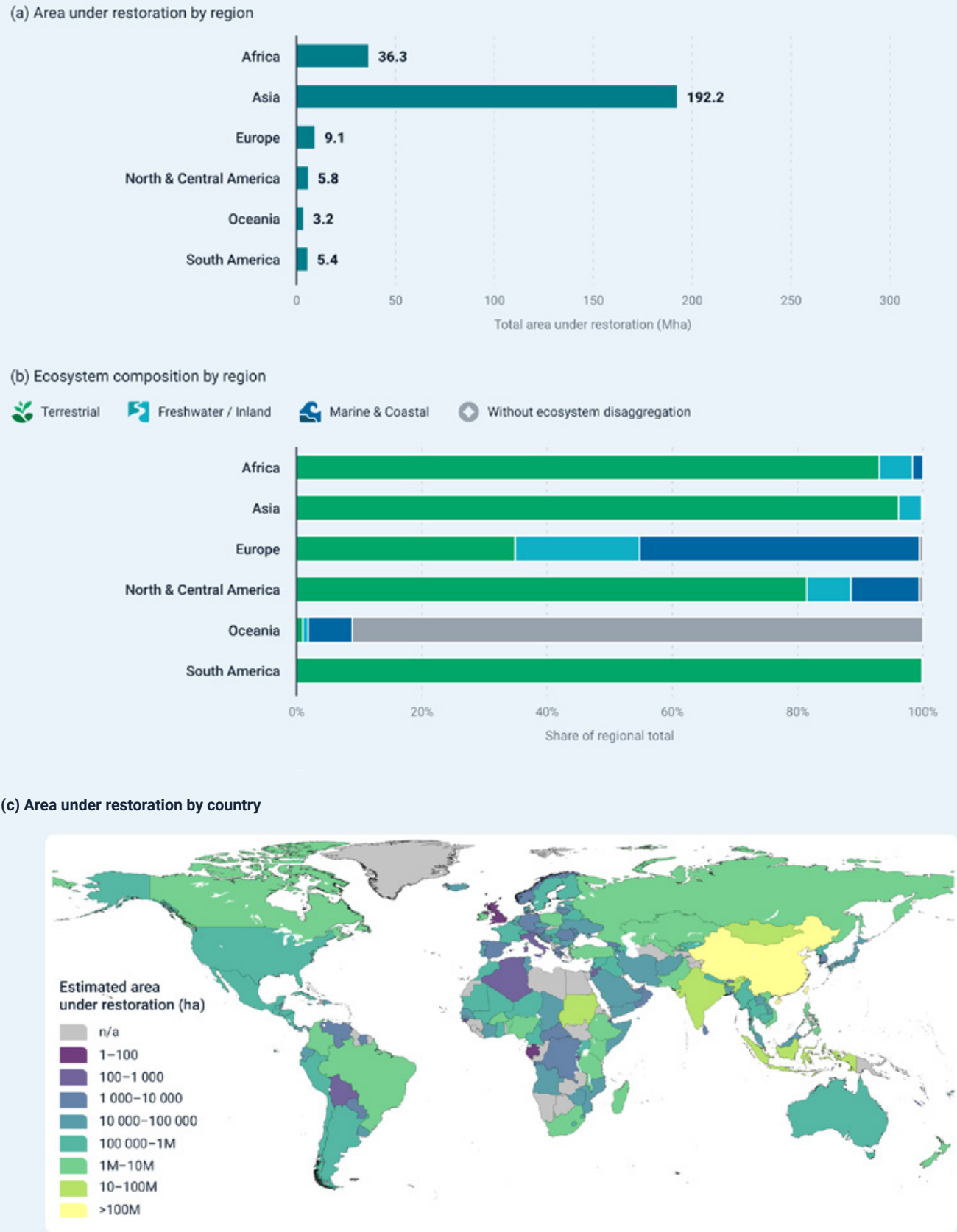
252

Mha

area under restoration

GLOBAL · ALL ECOSYSTEMS

Figure 5 Restoration progress by region, ecosystem composition and country



Refer to the disclaimer on the copyright page for the names and boundaries used in this map. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. Final status of the Abyei area is not yet determined.

Sources: Authors' own elaboration, based on data from FAO. 2025. Global Forest Resources Assessment 2025. In: FAO. [Cited 5 January 2026].; CBD. 2026. CBD Seventh National Reports. [Accessed on 18 March 2026]. <https://ort.cbd.int/national-reports/nr7>; Ramsar. 2026. Ramsar Sites Information Service. [Accessed on 31 March 2026]. <https://rsis Ramsar.org>; Convention on Wetlands. 2026. National Report Data System. [Accessed on 5 June 2026]. <https://nrds Ramsar.org>; FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: FAO. [Cited 29 April 2026]. <https://ferm.fao.org>

3.2 Mha – is reported without ecosystem disaggregation. The data reflect where restoration is occurring, but also where it is monitored and where reported efforts are concentrated. Taken together, these frameworks provide the most comprehensive picture currently available of global restoration progress. In the following sections, we explore where these areas are distributed across all major ecosystem types.

This distribution reflects both the scale of implementation and differences in monitoring and reporting. Terrestrial – and particularly forest – restoration is more consistently captured through existing national and international processes. Freshwater (inland water) and marine and coastal restoration is often less readily expressed through area-based measures or disaggregated from wider landscape and seascape initiatives. The relatively small areas reported for these ecosystems should therefore be interpreted in the context of the reporting limitations discussed in Section 2.6.2 and Section 2.6.3.

2.4 RESTORATION IN PROGRESS

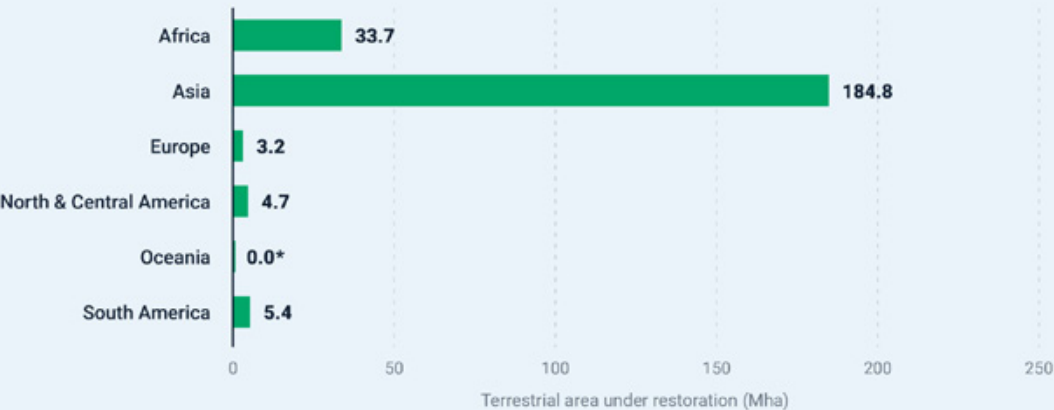
2.4.2 Restoration implementation in terrestrial ecosystems

The predominance of terrestrial ecosystems in documented restoration efforts, representing approximately 232 Mha (92 percent of the global total) reflects the scale of forest, landscape and land restoration programmes and the comparatively well-developed monitoring and reporting systems available for them.

As shown in Section 2.4.1, documented terrestrial restoration varies considerably across regions, partly reflecting differences in regional land area. Asia accounts for approximately 185 Mha (6 percent of the land area) documented as under restoration, compared with 33.7 Mha in Africa (1.5 percent) and considerably smaller reported areas in the other regions (Figure 6). Differences are also evident at country level. China reports 127.4 Mha, equivalent to approximately 13.5 percent of its total land area and 54 percent of all terrestrial restoration documented globally (Figure 7). Box 6 further explores China’s restoration efforts.

“
232 Mha
area under restoration
TERRESTRIAL ECOSYSTEMS

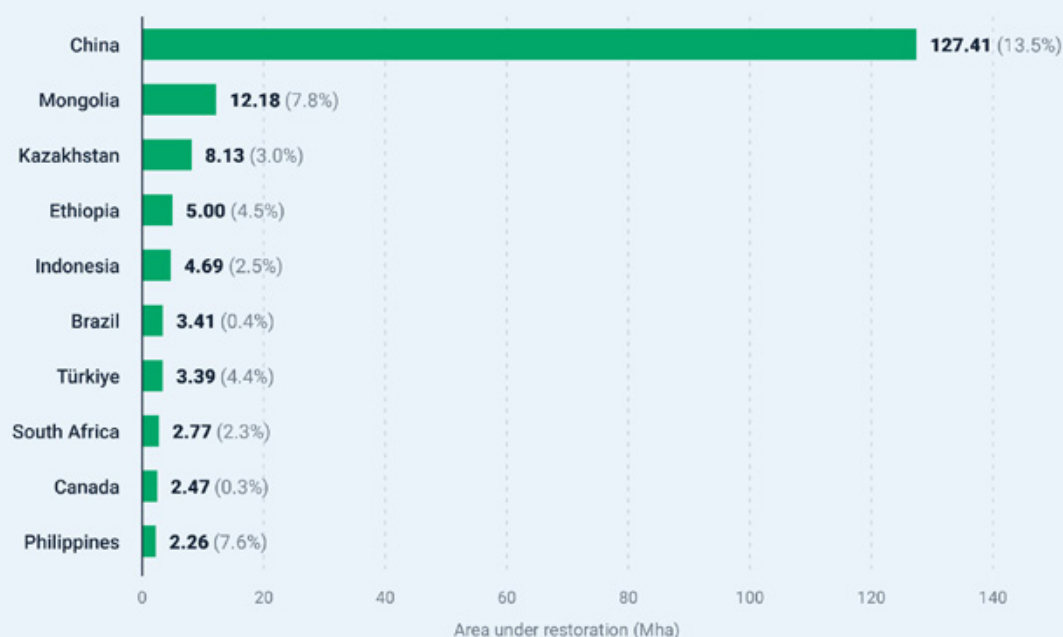
Figure 6 Terrestrial ecosystems under restoration by region



Note: * Due to rounding.
Source: Authors’ own elaboration.



Figure 7 Countries with the largest reported terrestrial area under restoration



Notes: Bars show reported area under restoration; in parentheses, the percentages show the reported area under restoration relative to total national land area. The reported restoration areas shown are for contextual comparison and should not be interpreted as a ranking of country restoration performance. Differences in absolute areas may reflect, among other factors, country land area, the scale of restoration programmes, and monitoring and reporting coverage. Percentages do not represent the proportion of degraded terrestrial ecosystems under restoration.

Sources: Authors' own elaboration, based on data from FAO. 2025. Global Forest Resources Assessment 2025. In: FAO. [Cited 5 January 2026]. <https://data.fao.org/assessments/fra/2025>; FAO. 2024. FAOSTAT: Land use. [Accessed on 28 September 2026]. <https://www.fao.org/faostat/en/#data/RL>. Licence: CC-BY-4.0; CBD. 2026. CBD Seventh National Reports. [Accessed on 18 March 2026]. <https://ort.cbd.int/national-reports/nr7>; FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: FAO. [Cited 29 April 2026]. <https://ferm.fao.org>

Forests are among the most systematically monitored ecosystems globally, supported by well-established global and national reporting processes. The Global Forest Resources Assessment 2025 provides a particularly important source of official national data on forest restoration. Through FRA 2025, 70 countries reported approximately 44 Mha of forest under restoration. Together, these countries account for about 1.75 billion ha of forest, equivalent to 42 percent of the global forest area (FAO, 2025d).

National reporting under the CBD provides a broader picture of restoration beyond forests. Restoration approaches reported by countries under Target 2 in their Seventh National Reports span a wide range of forest and landscape restoration interventions, including reforestation and afforestation, assisted natural regeneration, sustainable land management, erosion control, agroforestry, restoration of pastures and other sustainable agricultural practices (FAO, 2026a). Reporting restoration areas by activity and ecosystem type makes it possible to identify terrestrial ecosystems within the reported restoration areas; terrestrial ecosystems account for 195.7 Mha reported across 43 of the 62 countries that provided area-based data under Target 2.

This estimate differs from the 206.5 Mha of forest and landscape restoration reported in *The State of the World's Forests 2026*, because the two analyses have different objectives and scopes (FAO, 2026a). While that report estimates the total area under forest and landscape restoration, this report disaggregates reported areas by ecosystem group to assess restoration across terrestrial,

BOX 6

127 Mha

under restoration between
2019 and 2023

CHINA

309 km²

increase in wetland

CHINA

Large-scale ecosystem restoration efforts in China

Large-scale ecosystem restoration programmes in China have been underway for decades, generating substantial reported restoration activity. In its CBD Seventh National Report, China reported a total of 127 Mha under restoration between 2019 and 2023. This accounts for approximately 60 percent of the total area under restoration reported in the Seventh National Reports by 125 countries and approximately 50 percent of the aggregated global estimate of area under restoration globally.

China's large-scale restoration efforts have shifted from focusing on disaster risk reduction to restoring biodiversity and ecosystem integrity. Programmes have broadened the focus on biodiversity and ecosystem integrity (e.g. mixed species for tree planting, prioritizing natural regeneration and the use of native species). Targeted ecosystem approaches have also expanded to include aquatic and urban systems, moving beyond the forest restoration programmes that previously dominated these efforts (Li *et al.*, 2024). In the Seventh National Report, China mentioned the restoration of marine habitats and wetlands in the comments to the Target 2 headline indicator. Although the total area was not provided, the national report does mention an increase in wetland area of 309 km².

This shift is also reflected in China's massive Ecological Protection and Restoration Program, known as the Shan-shui Initiative. In 2020, the programme was expanded to include all major ecosystems, across mountains, rivers, forests, farmlands, lakes, grasslands and deserts.

Restored area is often reported as the main programme outcome in China's large-scale restoration initiatives, suggesting the need for more comprehensive monitoring metrics and indicators to assess restoration results and effectiveness.

Sources: Government of the People's Republic of China. 2026. *China's Seventh National Report to the United Nations Convention on Biological Diversity*. Ministry of Ecology and Environment, People's Republic of China/Convention on Biological Diversity; Li, B.V., Wu, S., Hua, F. and Mi, X. 2024. The past and future of ecosystem restoration in China. *Current Biology*, 34(9): R379–R387. <https://doi.org/10.1016/j.cub.2024.03.057>

freshwater (inland water) and marine and coastal ecosystems. As a result, 4.5 Mha not disaggregated by ecosystem type and 0.33 Mha of freshwater (inland water) ecosystems are reported as part of wider landscapes; these areas are not included in the terrestrial estimate presented here.

FERM provides additional evidence of forest and landscape restoration implementation (FAO, 2026a). As of April 2026, it had documented over 24 Mha under restoration through forest and landscape restoration initiatives, including data from all 35 UN World Restoration Flagships. FERM also supports reporting on socioeconomic and environmental outcomes, including beneficiaries, carbon sequestration and biodiversity indicators, although reporting remains predominantly focused on area-based metrics. The Flagships provide examples of efforts to document broader restoration outcomes and impacts on the ground (Box 7).

Restoration is also being implemented across agricultural and other production landscapes. Beyond initiatives explicitly reported as restoration, investments in sustainable land management can contribute to the conditions needed for ecosystem recovery. Since 2022, Global Environment Facility (GEF) land degradation projects have brought over 44 Mha under sustainable land management in production systems, contributing to soil fertility, reduced water use, and erosion control, while safeguarding the long-term sustainability of food production systems and ecosystems (GEF, 2024; FAO, 2025c).

BOX 7

35

UN World
Restoration Flagships

18

Mha
under restoration

1.1

million+
jobs created

1.2

million+
people trained

Flagships leading the way

The 35 UN World Restoration Flagships exemplify restoration at scale. Selected by the Ecosystem Restoration Decade, they are government-backed initiatives chosen for their ambition, their scale and their ability to be replicated. In total, the Flagships report 18 Mha under restoration through the FERM Registry. Their reporting is already feeding directly into the global picture: 12.7 Mha of the consolidated estimate, covering 28 countries, come directly from Flagship data, equivalent to about 5 percent of the 252 Mha of restoration documented worldwide. The impacts of the Flagships extend well beyond hectares:

- Over 1.1 million jobs created across Flagship landscapes.
- More than 1.2 million people trained in restoration practices.
- Species recovery, including the return of mountain gorillas in East Africa, jaguars and golden-headed lion tamarins in Brazil's Atlantic Forest, snow leopards in Kyrgyzstan, Ganges river dolphins in India, and Saiga antelope and wild horses in Kazakhstan's Altyn Dala.

Source: Authors' own elaboration, based on data from FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: FAO. [Cited 29 April 2026]. <https://ferm.fao.org>

Taken together, these efforts demonstrate substantial terrestrial restoration activity, but also highlight differences in definitions, coverage and reporting across regions and countries. These challenges become even more pronounced when assessing restoration in freshwater (inland water) and marine and coastal ecosystems, where available data remain considerably more limited.



A forest gardener watering vegetables in his forest garden in Kaffrine, Senegal
© UNEP/TODD BROWN

2.4 RESTORATION IN PROGRESS

2.4.3 Restoration implementation in freshwater (inland water) ecosystems

Approximately 11 Mha of freshwater (inland water) ecosystems are documented as being under restoration across 62 countries, accounting for about 4 percent of the total global area documented as under restoration. As shown in Figure 8, reported freshwater (inland water) restoration is distributed across regions, with the largest documented areas in Asia, with approximately 7.1 Mha, followed by Africa and Europe, with 1.9 Mha and 1.8 Mha, respectively. Smaller areas are documented in Oceania and South America (Figure 8). These regional differences describe the distribution of restoration captured by the available data; they should not be interpreted as a ranking of regional restoration performance.

Alongside these area-based estimates, available reporting indicates increasing attention to freshwater (inland water) restoration. The Wetland Restoration Progress Assessment, 2025, found that the proportion of Parties reporting implemented restoration or rehabilitation programmes had increased from 8 percent to 54 percent since COP14 (Convention on Wetlands, 2025b).

“



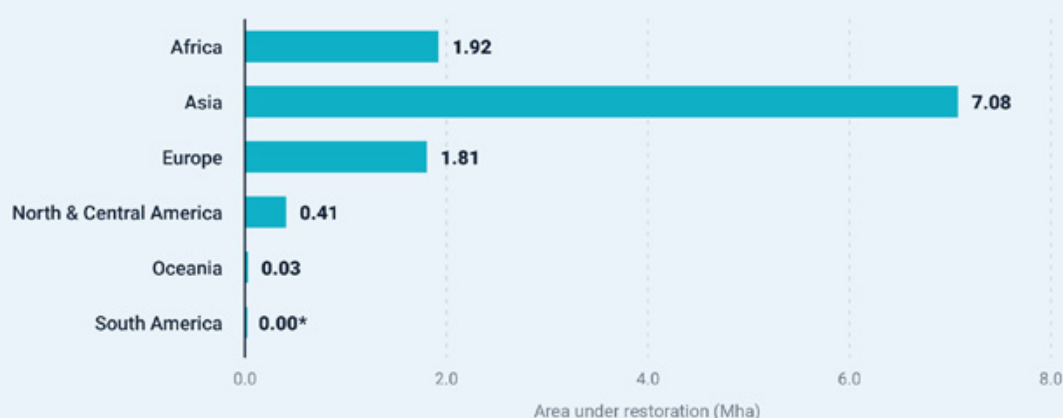
11

Mha

area under restoration

FRESHWATER (INLAND WATER)
ECOSYSTEMS

Figure 8 Freshwater (inland water) ecosystems under restoration by region



Notes: Values represent freshwater (inland water) area under restoration documented through the sources included in this assessment. Differences among regions may reflect, among other factors, freshwater (inland water) ecosystem extent, the scale and type of restoration activity, and monitoring and reporting coverage.

* Due to rounding.

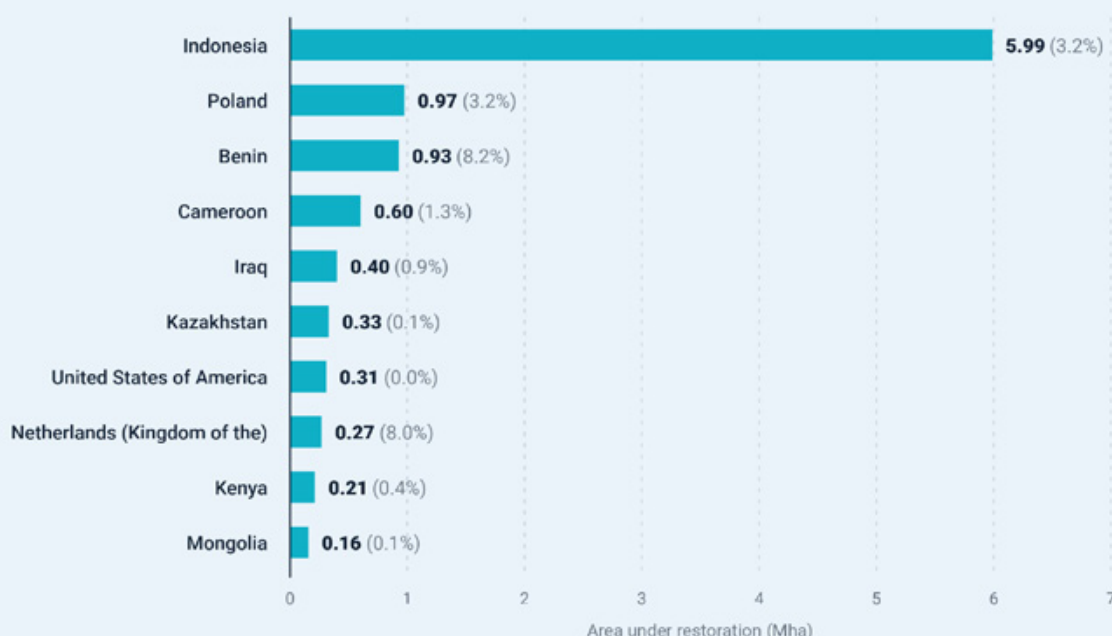
Sources: Authors' own elaboration, based on CBD. 2026. CBD Seventh National Reports [Accessed on 18 March 2026]. <https://ort.cbd.int/national-reports/nr7>; Ramsar. 2026. Ramsar Sites Information Service. [Accessed on 31 March 2026]. <https://rsis.ramsar.org>; Convention on Wetlands. n.d. National Report Data System. [Accessed on 5 June 2026]. <https://nrds.ramsar.org>

The available area-based data also provide a more detailed picture of how documented freshwater (inland water) restoration is distributed among countries. Figure 9 shows the reported freshwater (inland water) area under restoration in absolute terms (Mha), while the percentages, in parentheses, express the relative to total national land area to provide additional context. Among the selected countries with the largest documented restoration areas,⁵

⁵ The percentages provide context for assessing these absolute values across countries of different sizes; they are not measures of restoration performance and do not represent the proportion of degradation of freshwater (inland water) ecosystems.

Indonesia reports the greatest area, with around 6 Mha of peatland restoration. Poland and Benin each report close to 1 Mha under restoration, followed by Cameroon, Iraq and Kazakhstan.

Figure 9 Countries with the largest reported freshwater (inland water) area under restoration



Notes: Bars show reported freshwater (inland water) area under restoration; in parentheses, the percentages show the reported area under restoration relative to the total national land area. The figure presents reported restoration areas for contextual comparison and should not be interpreted as a ranking of country restoration performance. Differences in absolute areas may reflect, among other factors, country land area, the scale of restoration programmes, and monitoring and reporting coverage.

Sources: Authors' own elaboration, based on CBD. 2026. CBD Seventh National Reports. [Accessed on 18 March 2026]. <https://ort.cbd.int/national-reports/nr7/>; FAO. 2024. FAOSTAT: Land use. [Accessed on 28 September 2026]. <https://www.fao.org/faostat/en/#data/RL>. Licence: CC-BY-4.0; Ramsar. 2026. Ramsar Sites Information Service. [Accessed on 31 March 2026]. <https://rsis Ramsar.org>; Convention on Wetlands. n.d. National Report Data System. [Accessed on 5 June 2026]. <https://nrds Ramsar.org>

The documented freshwater (inland water) restoration encompasses a wide range of ecosystem types and interventions. Countries reported restoration areas either by ecosystem type or restoration activity, enabling freshwater (inland water) restoration interventions to be identified. Reported ecosystem types included freshwater (inland water) and wetland ecosystems, as well as the International Union for Conservation of Nature (IUCN) Global Ecosystem Typology⁶ Level 2 biomes such as rivers and streams, lakes and artificial wetlands.

Reported interventions include wetland protection and rehabilitation, peatland rewetting, restoration of riparian vegetation, reconnection of rivers and floodplains, improvement of hydrological regimes, removal of barriers, and measures to improve water quality and restore habitat.

Hectare-based reporting might miss some freshwater (inland water) restoration progress. River restoration may be reported by length rather than area, while catchment-scale initiatives frequently combine terrestrial and freshwater

“

Hectare-based reporting might miss some freshwater (inland water) restoration progress.

⁶ For details, see: <https://global-ecosystems.org>

(inland water) activities without specifying the area attributable to each ecosystem. Incomplete wetland inventories and inconsistent classification of freshwater (inland water) habitats create further challenges. Freshwater (inland water) restoration may also be reported as part of broader landscape, agricultural or water management programmes and might be classified as terrestrial activity. Clearer ecosystem disaggregation and stronger national monitoring are needed to provide a more complete assessment of restoration progress across rivers, lakes, wetlands and peatlands (Steel *et al.*, 2025).

2.4 RESTORATION IN PROGRESS

2.4.4 Restoration implementation in marine and coastal ecosystems

“

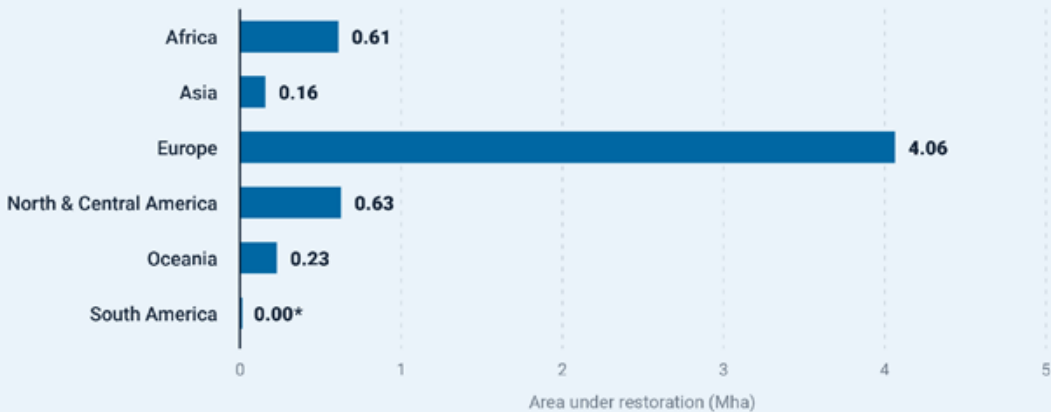
5.7 Mha

area under restoration
MARINE AND COASTAL
ECOSYSTEMS



Approximately 5.7 Mha of marine and coastal ecosystems are documented as under restoration across 46 countries, accounting for about 2 percent of the global area documented as area under restoration. The documented area is strongly concentrated geographically. Europe accounts for approximately 4.1 Mha, or around 72 percent of the total, while considerably smaller areas are documented in North and Central America, Africa, Oceania, Asia and South America (Figure 10). This regional figure is strongly influenced by the distribution of reported restoration at country level. Figure 11 provides further context on reported restoration among countries.

 **Figure 10** Marine and coastal ecosystems under restoration by region



Notes: Values represent marine and coastal areas under restoration documented through the sources included in this assessment. Differences among regions may reflect, among other factors, marine and coastal extent, the scale and type of restoration activities, and monitoring and reporting coverage. The figure should not be interpreted as a ranking of regional restoration performance.

* Due to rounding.

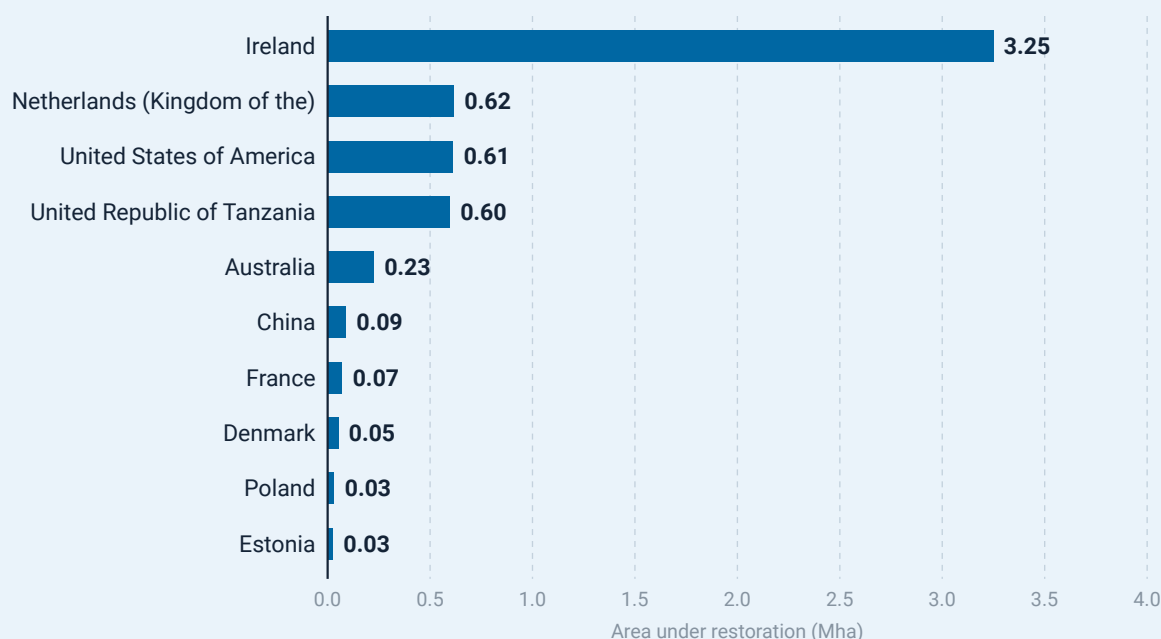
Sources: Authors' own elaboration, based on CBD. 2026. CBD Seventh National Reports. [Accessed on 18 March 2026]. <https://ort.cbd.int/national-reports/nr7/>; Ramsar. 2026. Ramsar Sites Information Service. [Accessed on 31 March 2026]. <https://rsis Ramsar.org>; Convention on Wetlands. n.d. National Report Data System. [Accessed on 5 June 2026]. <https://nrds Ramsar.org>; FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: FAO. [Cited 29 April 2026]. <https://ferm.fao.org>

At country level, Ireland reported the largest documented area under restoration for marine and coastal ecosystems; the Kingdom of the Netherlands, the United States of America and the United Republic of Tanzania follow, while other countries show considerable variation in scale and context (Figure 11). However, area alone provides only a partial measure of restoration progress, as it captures neither the type of intervention nor the ecological processes and outcomes being targeted.

Information on the nature and outcomes of marine and coastal restoration remains comparatively limited in the reporting assessed. Available sources used in this report identify activities such as coral reef restoration and improvements in fishery and aquaculture practices; but information on ecosystem-appropriate measures of recovery beyond the area under restoration is less consistent. This is particularly important in marine and coastal ecosystems, where progress may also depend on changes in habitat condition, ecological connectivity, water quality, species recovery and ecosystem functions that are not adequately represented by surface area alone. In order to improve the visibility of restoration progress, it is vital to understand and apply ecosystem-appropriate measures and forge stronger links between national reporting and specialist marine monitoring networks.



Figure 11 Countries with the largest reported marine and coastal area under restoration



Notes: Bars show reported marine and coastal areas under restoration. The figure presents the absolute area documented through the reporting sources included in this assessment; it should not be interpreted as a ranking of country restoration performance.

Sources: Authors' own elaboration, based on CBD. 2026. CBD Seventh National Reports. [Accessed on 18 March 2026]. <https://ort.cbd.int/national-reports/nr7/>; Ramsar. 2026. Ramsar Sites Information Service. [Accessed on 31 March 2026]. <https://rsis.ramsar.org/>; Convention on Wetlands. n.d. National Report Data System. [Accessed on 5 June 2026]. <https://nrds.ramsar.org/>; FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: FAO. [Cited 29 April 2026]. <https://ferm.fao.org>

2.5 Restoration finance

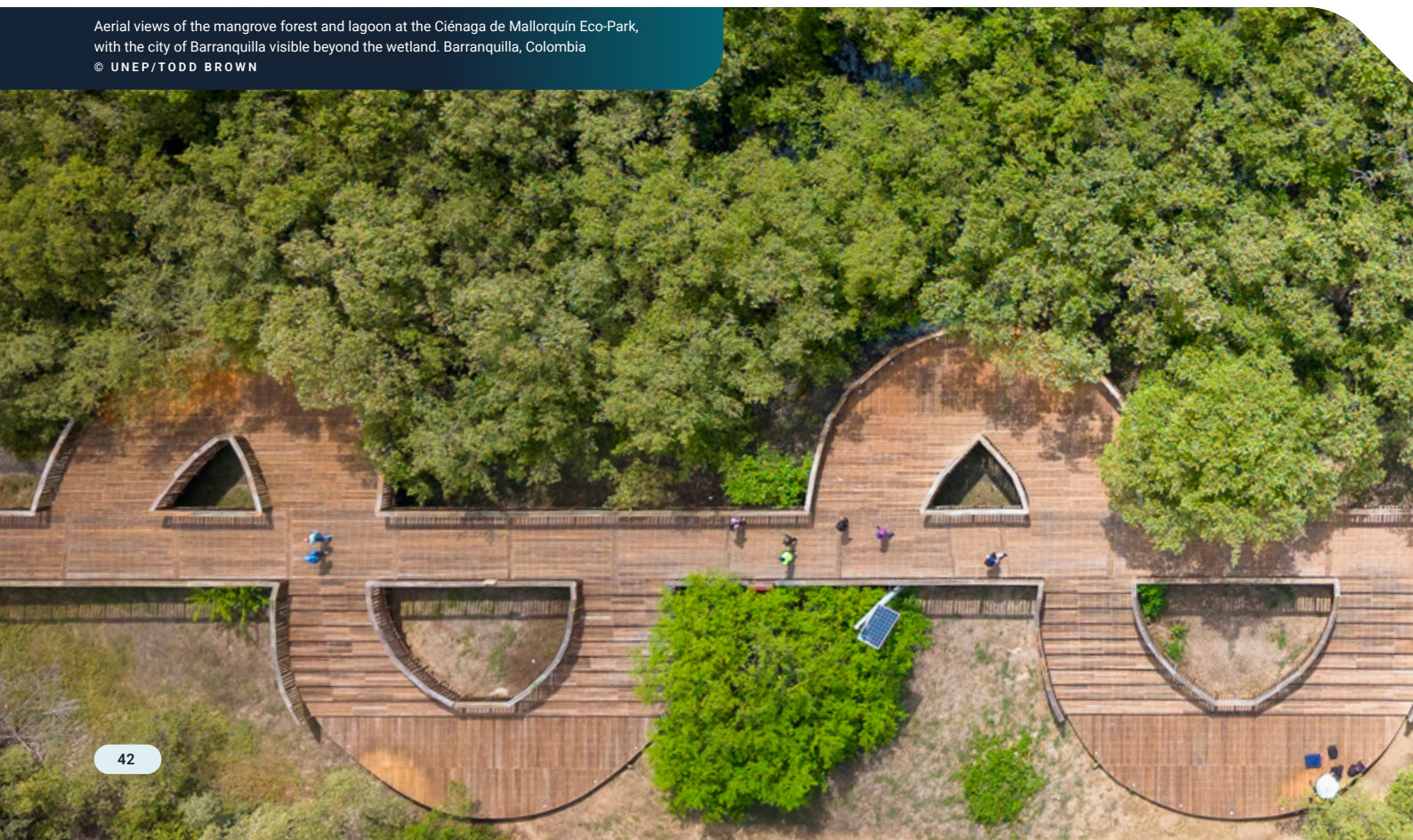
Financing is a critical determinant of whether restoration commitments can be translated into effective implementation at scale. Investment is required not only for activities on the ground, but also for planning, institutional capacity, tenure arrangements, monitoring and long-term management.

The economic case for such investment is substantial. More than half of the global domestic product in 2023 – approximately USD 58 trillion – was generated by economic activities that depend on nature to a moderate or high degree (IPBES, 2024). However, as shown in Section 2.2, many benefits of restoration – including water regulation, soil protection, pollination, carbon sequestration and reduced disaster risk – accrue over long periods and to multiple beneficiaries, rather than generating immediate financial returns. By contrast, restoration costs are incurred up front, while the wider costs of degradation are often excluded from public budgets, corporate accounts and investment decisions.

This imbalance reflects not only failures to recognize the value of ecosystem services and natural capital in economic and financial decisions, but also broader economic models that have coupled economic growth with increasing resource use and environmental pressures. Moving from linear patterns of resource extraction, production and consumption towards economic models that sustain human well-being within ecological limits is therefore an essential part of addressing the underlying drivers of degradation (UNEP, 2024a).

These structural challenges help explain why restoration remains undervalued and underfinanced despite its wider benefits. Greater transparency and more comprehensive accounting of the benefits of restoration and the costs of degradation are needed to help address this imbalance. This section presents current restoration finance flows and needs, and the shifts in investment and financial decision-making needed to support restoration at scale.

Aerial views of the mangrove forest and lagoon at the Ciénaga de Mallorquín Eco-Park, with the city of Barranquilla visible beyond the wetland. Barranquilla, Colombia
© UNEP/TODD BROWN



2.5 RESTORATION FINANCE

2.5.1

Current finance flows

“

USD

64 billiontraceable finance flows to
restoration in 2022

Traceable finance flows to restoration reached a total of approximately USD 64 billion in 2022, an increase of 23 percent from 2021 (Figure 12). While significant, it remains far below the needs to address the challenge. Public finance accounted for USD 47 billion (73 percent of the total), while private finance accounted for approximately USD 17 billion (27 percent). Within public finance, domestic government expenditure represented the largest component of public restoration finance. Approximately 88 percent of public flows were directed through domestic spending on sustainable agriculture, forestry and fishing. This spending was heavily concentrated in just five countries – China, United States of America, Canada, Japan and Türkiye – which together accounted for 76 percent of global public finance in these sectors.

International public finance represented a much smaller share. Restoration-targeted official development finance reached only USD 1.2 billion – a fraction of what is needed by developing countries, which are significantly affected by ecosystem degradation, but may face considerable constraints in mobilizing domestic public resources for restoration.

Broader finance for agriculture, forestry and other land uses, together with fisheries, registered a notable increase of around 286 percent, from USD 4.7 billion in 2018 to USD 18.2 billion in 2023 (CPI, 2025). While these sectors are not exclusively focused on restoration, these trends do include restoration activities. They therefore are an indication of growing investment, but they cannot be treated as restoration finance in their entirety.

Private finance remains modest at USD 17 billion (27 percent of the total). More than two-thirds was channelled through biodiversity offsets and credits driven by compliance schemes. Voluntary investment in restoration – philanthropy, impact investing, farmer investment in conservation agriculture and voluntary carbon markets – remains small. The private restoration finance figure is likely to be conservative. Current assessments exclude some investment in sustainable supply chains, payments for ecosystem services and private finance mobilized by development assistance, because the underlying data are insufficiently granular to isolate restoration-specific activity (Box 8).

Closing the finance gap is not only about attracting more capital: it is also about redirecting existing financial flows and improving the quality and effectiveness of investments. Restoration projects often face resource constraints for monitoring. Investors cited the cost of ecological monitoring, and of the adaptive management needed to correct poor outcomes after implementation, as a significant barrier to investment.

Figure 12 Public and private finance flows to restoration in 2022**Public finance flows, 47.1****Private finance flows, 17.1**

Unit: billion USD

Notes: ODA = overseas development assistance; NGO = non-governmental organization. The figures are adjusted for inflation in 2023 using data collected in 2022. Numbers may not sum to the totals indicated due to rounding.

Source: UNEP. 2024. *Growing the Green – Why and how restoration finance needs to quadruple by 2030*. State of Finance for Nature - Restoration Finance Report. Nairobi. <https://wedocs.unep.org/items/9b0340d2-9d97-4460-bdb3-57a140b70fd8>

BOX 8**USD 200 million**

Restore Fund

APPLE AND PARTNERS · 2021

USD 2 billion

philanthropic pledge

BEZOS EARTH FUND · 2021

Examples of emerging private sector finance for restoration

While most restoration finance still comes from the public sector, several new initiatives with an explicit focus on ecosystem restoration have emerged since the start of the Ecosystem Restoration Decade. These include corporate and philanthropic restoration funds, carbon removal companies, investment in biodiversity and carbon credits, and finance for regenerative agricultural landscapes.

Investing in restoration can make good business sense: the World Bank restoration finance stocktake report (World Bank, 2022) identifies ten distinct market-based benefits, from carbon market revenues to increased food production yields, reduced costs for water purification and increased supply chain resilience.

In 2021, Apple and partners launched a USD 200 million Restore Fund (Apple, 2021), building on the company's forestry and responsible packaging work, while the Bezos Earth Fund announced a USD 2 billion philanthropic pledge (Bezos Earth Fund, 2021) for landscape restoration and food systems transformation. Since then, many regionally or thematically focused funds have emerged: Mombak (n.d.) and Re.green are carbon removal companies operating in Brazil and have each raised hundreds of millions of dollars; in the United Kingdom, Oxygen Conservation (n.d.) is acquiring and restoring land at scale through private

BOX 8 (CONTINUED)

investors receiving biodiversity and carbon credits; in 2026, BTG Pactual – Latin America’s largest investment bank – raised USD 1.24 billion (TIG, 2026) for what the bank describes as the “largest reforestation fund to date”; in agricultural systems, the World Business Council for Sustainable Development has announced the mobilization of USD 9 billion through its members to regenerate agrifood landscapes and support 12 million farmers worldwide (WBCSD, 2025).

Sources: World Bank. 2022. *Scaling Up Ecosystem Restoration Finance: A Stocktake Report - Executive Summary (English)*. Washington, D.C. <http://documents.worldbank.org/curated/en/099955111092218230>; Apple. 2021. Apple and partners launch first-ever \$200 million Restore Fund to accelerate natural solutions to climate change. In: *Apple Newsroom*. [Cited 16 August 2026]. <https://www.apple.com/ke/newsroom/2021/04/apple-and-partners-launch-first-ever-200-million-restore-fund>; Bezos Earth Fund. 2021. Bezos Earth Fund announces \$2 billion pledge for landscape restoration and food-systems transformation, bringing overall commitment to nature to \$3 billion. In: *Bezos Earth Fund*. [Cited 16 August 2026]. <https://www.bezosearthfund.org/news-and-insights/bezos-earth-fund-announces-2-billion-pledge-for-landscape-restoration-and-food-systems-transformation-bringing-overall-commitment-to-nature-to-3-billion>; Mombak. n.d. Removing carbon for the future. In: *Mombak*. [Cited 16 August 2026]. <https://mombak.com>; Oxygen Conservation. n.d. Acquiring and restoring land at scale to protect nature, enhance biodiversity, and generate measurable value for people and planet. In: *Oxygen Conservation*. [Cited 16 August 2026]. <https://www.oxygenconservation.com>; TIG (Timberland Investment Group). 2026. BTG Pactual Timberland Investment Group raises US\$1.24 billion for largest reforestation fund to date. In: *TIG*. [Cited 16 August 2026]. <https://timberlandinvestmentgroup.com/btg-pactual-timberland-investment-group-raises-us1-24-billion-for-largest-reforestation-fund-to-date>; WBCSD (World Business Council for Sustainable Development). 2025. \$9B Mobilized to Regenerate Agrifood Landscapes and Support 12M Farmers Worldwide. In: *WBCSD*. [Cited 16 August 2026]. <https://www.wbcd.org/news/9b-mobilized-to-regenerate-agrifood-landscapes-and-support-12m-farmers-worldwide>

2.5 RESTORATION FINANCE

2.5.2

Directing restoration finance to Indigenous Peoples and other groups

Indigenous Peoples and other communities play a critical role in protecting biodiversity, maintaining healthy forests and mitigating climate change through their food and knowledge systems and territorial management practices and stewardship. Despite this recognized contribution, they continue to face significant barriers to accessing finance directly, with funding often channelled through intermediaries. Increasing direct access to finance is therefore essential to support Indigenous Peoples-led action and to better align funding with their contributions and priorities (Hatcher, Owen and Yin, 2021; UN Human Rights Council, 2023).

Recent commitments indicate increased recognition of this financing gap: the Forest and Land Tenure Pledge was renewed by the Forest Tenure Funders Group at UNFCCC COP30,⁷ with a commitment of USD 1.8 billion for 2026–2030; and the Tropical Forest Forever Facility (TFFF) includes a target requiring at least 20 percent of payments to go to Indigenous Peoples and local communities (TFFF Steering Committee, 2025). Both financial instruments are designed to support ecosystem restoration efforts.

An important development has been the emergence of Indigenous Peoples-led financing models and territorial-based funds that demonstrate viable pathways for more direct, culturally grounded financing also for restoration (del Gatto *et al.*, 2022; Tenure Facility, 2023). Some of these mechanisms are engaging with larger finance initiatives, such as TFFF, with the aim of increasing the legitimacy, effectiveness and equity of forest-sector climate financing for forest mitigation and adaptation.

⁷ The Forest Tenure Funders Group comprises four donor countries (Germany, Norway, Kingdom of the Netherlands, United Kingdom of Great Britain and Northern Ireland) and over 30 private foundations and philanthropic organizations.

“

Direct access to finance for Indigenous Peoples and other rights holders also remains insufficient, despite recent commitments to increase it.

At the multilateral level, the proposed GEF-9 package sets an aspirational target to direct 20 percent of total GEF financing towards actions by Indigenous Peoples and local communities, extending an approach first piloted by the Global Biodiversity Framework Fund. Results will include disaggregated data on Indigenous Peoples and local communities, alongside women and youth. Furthermore, Indigenous Peoples' lands and territories will be formally recognized and tracked in the GEF results framework; this includes the land tenure rights of Indigenous Peoples and local communities.

Gender-responsive finance also remains limited. Women often face barriers to landownership, finance and participation in decisions concerning natural resources. Restoration-finance mechanisms should therefore incorporate gender-responsive funding arrangements, accessible procedures, and measures to support equitable participation and benefit-sharing (UN Women, n.d.; GCF, 2017; UNFCCC, 2024).

Overall, available evidence shows that restoration finance is growing, but it remains dominated by domestic public expenditure and concentrated in a small number of countries and sectors. International public finance and private investment provide important complementary resources but remain limited relative to the scale and distribution of restoration commitments. Direct access to finance for Indigenous Peoples and other rights holders also remains insufficient, despite recent commitments to increase it. Section 2.6 compares current financial flows with estimated needs, and identifies the principal financing gaps and opportunities.

2.6 Restoration gaps and opportunities

“

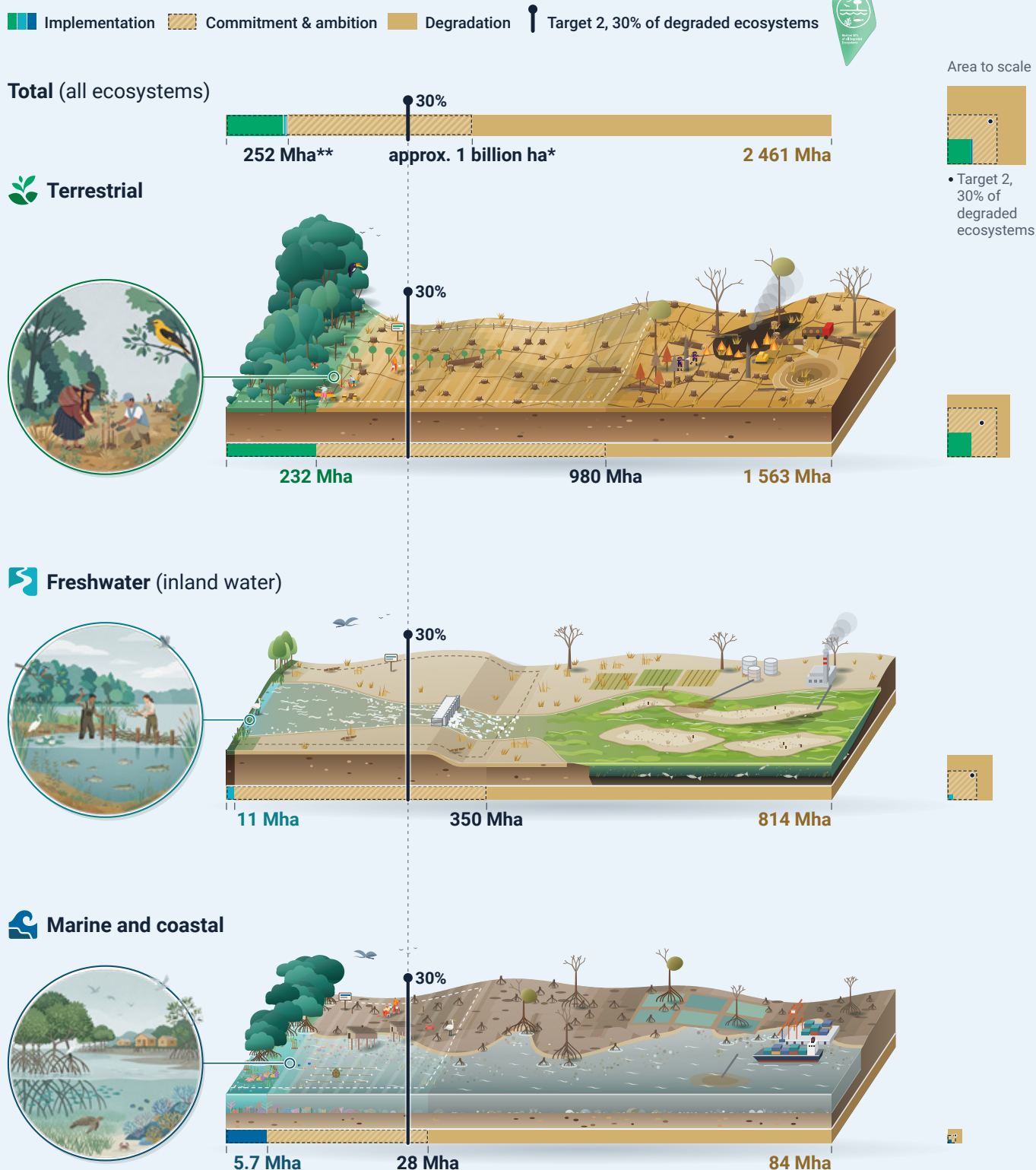
The world is nevertheless off track to meet global restoration targets and national commitments by 2030.

Ambition has increased and progress has been made. The world is nevertheless off track to meet global restoration targets and national commitments by 2030. There are persistent gaps: between commitments and implementation, between the finance available and the finance needed, and between ecosystems that are well represented in reporting and ecosystems that remain under-represented. This section brings the findings together and identifies opportunities to address these gaps. Figure 13 provides an overview of the central implementation gap identified in this report, comparing documented area under restoration with restoration commitments, estimated degradation and the indicative 30 percent global restoration target derived from the degradation estimates used in this assessment.



FIGURE 13

Restoration implementation, commitments, target and degradation by ecosystem



Notes

* Approximately 1 billion is used to represent the total commitment and ambition. Commitments and ambitions without country-level information (such as Freshwater and Kelp Forest Challenges and Mangrove and Coral Reef Breakthroughs) are not included in this aggregate figure but they are used to gauge restoration commitments for freshwater (inland water) and marine and coastal ecosystems.

** An additional 3.2 Mha is included in the total estimate that does not have ecosystem specific information and is not displayed in the figure.

Source: Authors' own elaboration, based on data presented in Sections 2.2–2.4.

2.6 RESTORATION GAPS AND OPPORTUNITIES

2.6.1

Restoration commitments indicate substantial ambition

Documented national restoration commitments cover approximately 1 billion ha, exceeding the indicative estimate of 738 Mha associated with placing 30 percent of degraded ecosystems under restoration under KMGBF Target 2, pointing to a high level of collective ambition (Figure 13). However, ambition varies significantly at country level and is distributed unequally across ecosystems. Terrestrial ecosystems make up the majority of the total national restoration commitments. Much of this ambition is expressed through land degradation neutrality targets, which encompass measures such as sustainable land management and forest and landscape restoration.

For freshwater (inland water) ecosystems, the Freshwater Challenge represents the largest global commitment, aiming to restore 350 Mha of wetlands and 300 000 km of rivers. Wetland restoration ambition is equivalent to over 140 percent of the estimated global Target 2 ambition for freshwater (inland water) ecosystems (Section 2.3.3). However, it was not included in the consolidated commitment database, because country-level allocations were unavailable, and uptake of this ambition in national commitments remains limited.

Similarly, regarding country-level disaggregation for marine and coastal ecosystems, information on national commitments is limited. The Mangrove and Coral Reef Breakthroughs and the Kelp Forest Challenge provide an indicator of global ambition to restore these ecosystems, with commitments reaching 28 Mha (Section 2.3.4), exceeding the estimated global Target 2 ambition for marine and coastal ecosystems. These commitments provide evidence of global ambition, but cannot be incorporated into the consolidated national estimate without country-level disaggregation. With only four years remaining until 2030, the immediate challenge is to convert existing ambition into funded, effective and measurable action. Planning must also extend beyond the current target date. The KMGBF calls to Protect and Restore: to maintain, enhance or restore the integrity, connectivity and resilience of all ecosystems, substantially increasing the area of natural ecosystems by 2050 (KMGBF 2050 Goal A). At the regional scale, the EU Nature Restoration Regulation mandates that by 2050 all degraded ecosystems are under restoration. As many global, regional and national frameworks look beyond 2030, ambition will need to scale up towards restoring all degraded ecosystems and preventing further degradation.

A further challenge is how to account for transitional ecosystems such as peatlands, mangroves and other coastal wetlands, which sit across the terrestrial, freshwater (inland water) and marine and coastal realms. Depending on how countries and reporting frameworks classify them, the same area may be counted under more than one realm or even omitted altogether, affecting both the degradation baselines and the total commitments. For example, some countries include forest, wetland and mangrove restoration ambition in their LDN voluntary targets and actions. Greater consistency in how these ecosystems are classified and accounted for would therefore improve comparability across datasets and help reduce the risk of double counting or omission in aggregate estimates.

“

The immediate challenge is to convert existing ambition into funded, effective and measurable action.

2.6 RESTORATION GAPS AND OPPORTUNITIES

2.6.2

Documented restoration implementation shows progress but remains below ambition

“



3

 times

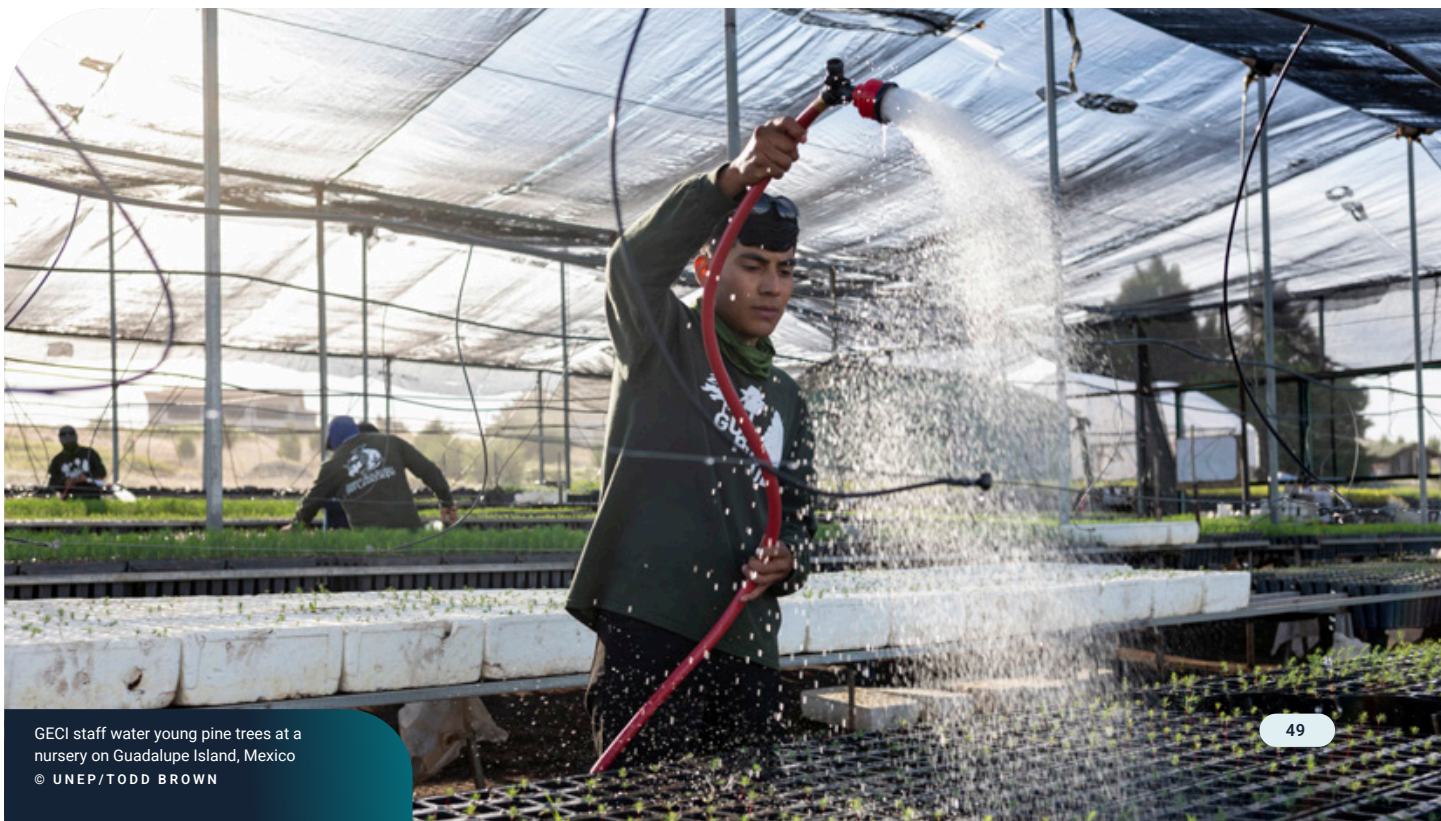
implementation is needed to meet Target 2 of the KMGBF

Documented implementation of ecosystem restoration is approximately 252 Mha across 149 countries. Countries have committed to restore approximately 1 billion hectares, but implementation needs to triple to meet Target 2 of the KMGBF. More than halfway into the Ecosystem Restoration Decade, progress is not yet on track to meet global restoration targets and commitments by 2030. If degradation continues to increase, implementation must accelerate. Avoiding the degradation of new areas must be prioritized and can be implemented through sustainable land and water management and, where appropriate, conservation measures that protect ecosystems.

Progress differs substantially among ecosystem realms (Figure 13). For terrestrial ecosystems, approximately 232 Mha are documented as under restoration, and implementation needs to double to meet Target 2, to restore 469 Mha of degraded land. This documented terrestrial restoration represents about a quarter of the approximately 980 Mha of terrestrial restoration commitments identified in this assessment.

For freshwater (inland water) ecosystems, the gap is considerably larger. Approximately 11 Mha are documented as under restoration, equivalent to about 4.5 percent of the implementation needed to achieve Target 2. Target 2, estimated at 30 percent of degraded freshwater (inland water) ecosystems, is estimated at 244 Mha. Comparisons with documented national commitments are less informative, because freshwater (inland water) measures included in NDCs, NBSAPs and LDN targets could not be fully disaggregated in this assessment.

Marine and coastal ecosystems present a similar – although less pronounced – gap between documented implementation and the scale of ambition. Approximately 5.7 Mha are documented as under restoration, equivalent to about 23 percent of Target 2 (30 percent of degraded marine and coastal ecosystems), estimated at 25 Mha. However, the estimates lack sufficient detail to determine which marine and coastal ecosystems are under restoration (Figure 13).



Spatially explicit information about where restoration takes place and which areas are targeted for future interventions is often not available. Restoration commitments and implementation are reported at an aggregated national level. When comparing degraded areas – restoration commitments and areas under restoration – there is not enough information to understand whether areas reported as under restoration are undergoing effective restoration. Effective restoration is defined as standards-based restoration underpinned by agreed principles that results in appropriately balanced sustainable net gain that benefits and enhances biodiversity, ecosystem functions and services, ecological integrity, connectivity and human well-being (FAO, SCBD and SER, 2024).

Taken together, the findings show that substantial terrestrial restoration activity is underway, but the area currently documented as under restoration remains considerably smaller than both identified commitments and the estimated extent of degradation. Importantly, this difference should not be interpreted solely as an implementation gap. Incomplete national monitoring and reporting means that restoration already underway may not yet be captured in the available global evidence. As Section 2.6.3 shows, this difference reflects not only an implementation gap, but also an information gap.

2.6 RESTORATION GAPS AND OPPORTUNITIES

2.6.3

Challenges in national reporting

About a quarter of countries (46) did not report quantitative restoration progress data under any of the frameworks analysed. Of these 46 countries, 26 have already committed a total of 53 Mha. In contrast, restoration progress was reported by 147 countries, of which 10 did not have information on ecosystem disaggregation, limiting ecosystem-level analysis.

The reporting gap is also evident in national reporting under the CBD. Of the 125 countries that had submitted Seventh National Reports by March 2026, 63 provided no quantitative data on restoration progress under Target 2. These 63 countries account for approximately 3 billion ha of land, including an estimated 345 Mha of degraded land. They are distributed across regions: 23 in Africa, 17 in Europe, 13 in Asia, 6 in Oceania, 2 in North and Central America, and 2 in South America. Of these 63 countries, 21 have NBSAPs or national target commitments covering at least 86.6 Mha.

In their Seventh National reports to the CBD, countries were asked to provide reasons for not reporting data. For Target 2 indicator area under restoration, 38 countries (60 percent) indicated they did not have national-level data on it. Fifteen countries (24 percent) reported information that could not be aggregated nationally, while 9 (14 percent) indicated that data were still being consolidated or validated. Several countries noted other reasons, such as the need for further methodological development for the indicator in the national context.

Differences in interpretation further affect comparability. Analysis of the FRA reporting on area under restoration found that countries applied differing approaches to defining and reporting forest restoration. Some reported areas associated with afforestation, reforestation or natural regeneration, while others reported the number of trees planted or planned for planting rather than an area under restoration. These differences reinforce the need for clearer definitions, greater methodological consistency and practical guidance on what should be reported as area under restoration.

“

About a quarter of countries (46) did not report quantitative restoration progress data under any of the frameworks analysed.

“

Reporting gaps are particularly pronounced for freshwater (inland water), marine and coastal ecosystems.

Reporting gaps are particularly pronounced for freshwater (inland water) and marine and coastal ecosystems. As shown in Section 2.4.3 and Section 2.4.4, these ecosystems account for only a small share of the restoration area captured in the reporting sources assessed. This should not be interpreted solely as limited restoration activity; it also reflects important monitoring and reporting constraints. For marine and coastal ecosystems, only four FERM initiatives report a specific restoration area, totalling approximately 97 600 ha. Aquatic restoration can be particularly difficult to represent consistently in area-based reporting, because interventions may span interconnected or mosaic ecosystem types, while underwater restoration can require specialized and resource-intensive monitoring.

Freshwater (inland water) restoration presents a related disaggregation challenge. FERM includes initiatives involving freshwater (inland water) restoration, but these activities are often reported as part of broader initiatives spanning terrestrial, freshwater (inland water) and marine and coastal ecosystems without specifying the area attributable to each ecosystem type. As a result, the freshwater (inland water) component cannot always be separately quantified. Together with the limited country-level information reported through separate other processes, these constraints mean that the available data likely provide an incomplete picture of restoration across aquatic ecosystems.



The Fort Folly salmon team monitors the salmon population with an electric fish stunner at a river pond near Fundy Bay in New Brunswick, Canada
© UNEP/TODD BROWN

2.6 RESTORATION GAPS AND OPPORTUNITIES

2.6.4

Finance needs and opportunities

Finance for restoration remains substantially below estimated needs. Traceable restoration finance reached approximately USD 64 billion in 2022, while annual investment is estimated to need to rise to USD 296 billion by 2030 and USD 448 billion by 2050 (UNEP, 2024b). Meeting the 2030 targets requires finance to increase to more than four times its current level. Other global assessments similarly point to restoration investment needs in the order of trillions of dollars over longer time horizons, underscoring the scale of the financing challenge (IPBES, 2024).

Closing this gap will require both additional resources and better alignment of existing financial flows. Public finance will remain essential, particularly for restoration activities and enabling conditions that do not generate direct financial returns. Well-targeted public spending can be catalytic, drawing in private capital rather than substituting for it (World Bank, 2024). Private and blended finance can complement public resources where appropriate.

Investment in national monitoring systems is one example of catalytic public expenditure. The data and credibility generated through these systems can make restoration programmes more attractive to private investors (zu Ermgassen and Löfqvist, 2024). Financing needs also vary considerably across regions and restoration activities. UNEP (2024b) estimates that Asia requires the largest absolute increase, approximately USD 102 billion annually by 2030, while the Near East and reforming economies require USD 39 billion. By activity, investment needs for agroforestry range from USD 56 billion in 2025 to USD 87 billion per year by 2030, while those for restorative reforestation (excluding timber plantation) range from USD 28 billion in 2025 to USD 52 billion per year by 2030. Peatland and seagrass restoration also require significant investment, estimated at USD 44 billion and USD 28 billion per year by 2030, respectively.

Available finance does not necessarily correspond to these needs or to restoration priorities. Despite the prominence of forests in global restoration commitments, for example, only 3 percent of an estimated USD 1.7 billion invested in forest impact in 2023 was directed to forest restoration; most was directed towards sustainable forestry (UNEP, 2025). This mismatch demonstrates the importance of better aligning financial flows with restoration needs across regions, ecosystems and activities.

Restoration can generate substantial economic and social benefits alongside ecological recovery. Studies estimate that, in some contexts, every dollar invested in restoration could generate up to USD 30 in economic benefits (Verdone and Seidl, 2017; Ding *et al.* 2018). Costs, however, vary widely according to type of restoration and context: median land restoration costs range from USD 185 per ha for forest management to USD 3 012 per ha for silvopastoral land use (Verhoeven *et al.*, 2024), and can be considerably higher for marine and coastal ecosystems (Bayraktarov *et al.*, 2016).

The investment case extends beyond direct financial returns. Restoration can support production, livelihoods and employment, improve resilience and reduce costs associated with continued ecosystem degradation. Yet many of these benefits are long term or are public in nature and remain poorly reflected in market prices, while restoration costs are often incurred up front. Recognizing these wider benefits and avoided costs can strengthen the basis for investment and help shift financial decisions towards activities that support

“

Meeting the 2030 targets requires finance to increase to more than four times its current level.

ecosystem recovery with greater attention to the effectiveness and equity of relevant investments. Specific approaches to mobilizing and aligning finance are considered in Chapter 3.

2.6 RESTORATION GAPS AND OPPORTUNITIES

2.6.5 Evidence-based knowledge and gaps

Despite the rapid growth of restoration science, a central knowledge gap remains in understanding which approaches work, under what conditions, over what time frames, at what cost and with what ecological, social and economic outcomes. In particular, restoration research often examines terrestrial, freshwater (inland water) and marine and coastal ecosystems separately, limiting the understanding of how interventions and recovery processes interact across connected landscapes, watersheds and seascapes.

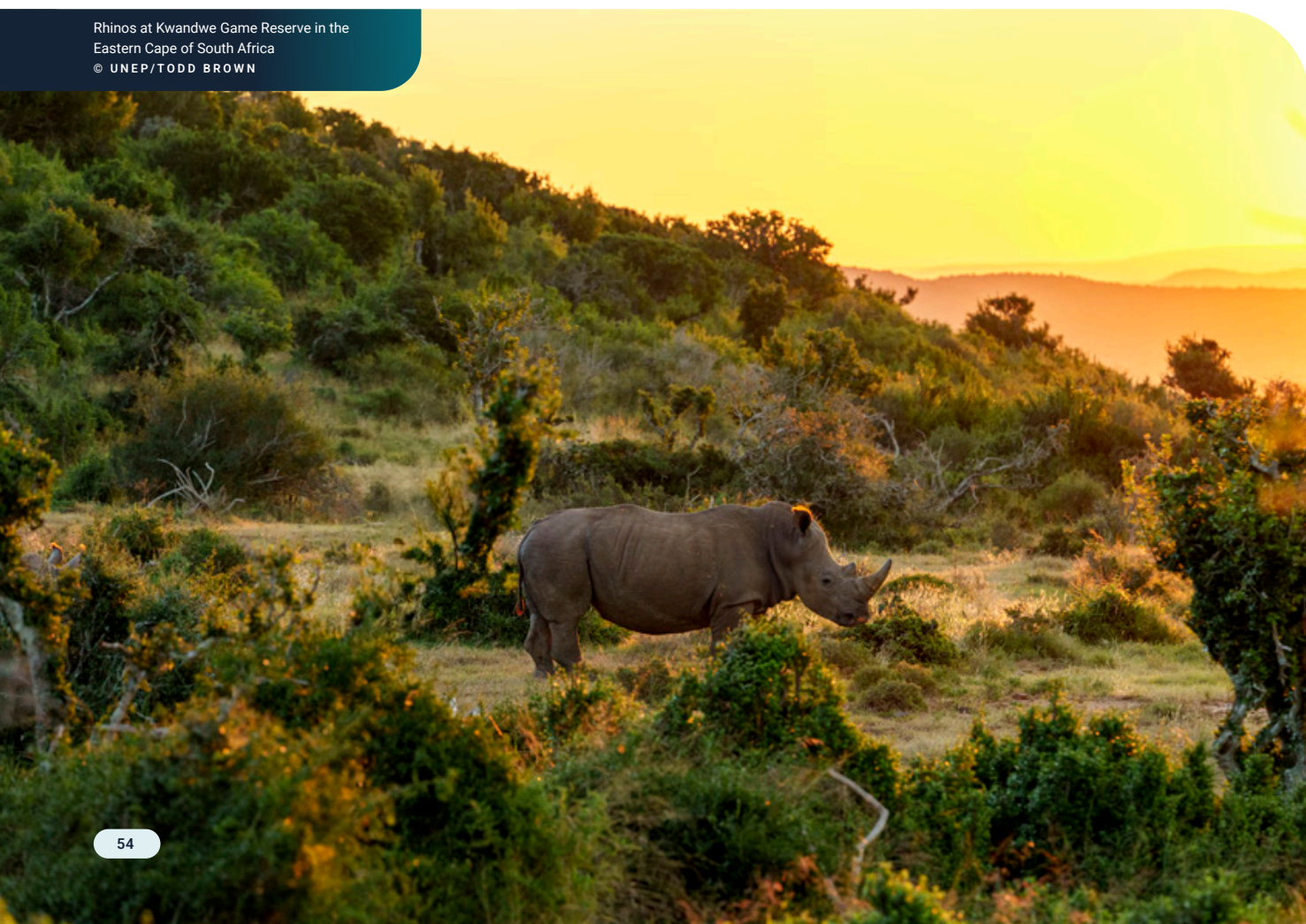
Recovery can take decades, different ecosystem attributes recover at different rates, and outcomes vary substantially over sites (Moreno-Mateos *et al.*, 2012; Brudvig *et al.*, 2017). Longer-term monitoring against clearly defined objectives and baselines is therefore important for building the evidence needed to evaluate restoration outcomes and inform future interventions (Nelson *et al.*, 2024). The systematic integration of scientific, traditional and practitioner knowledge, as well as Indigenous Peoples' food and knowledge systems, is one of the principles for ecosystem restoration (FAO, IUCN CEM and SER, 2021).



At the same time, the wider benefits of recovery are not always captured by conventional measures of restoration success. Economic studies increasingly demonstrate that functioning and restored ecosystems can reduce losses from hazardous events, protect infrastructure and livelihoods, and sustain flows of ecosystem services and natural capital. Coral reefs, for example, provide substantial flood protection globally, while mangroves can significantly reduce damage from coastal flooding (Beck *et al.*, 2018; Menéndez *et al.*, 2020). Strengthening scientific evidence on avoided losses and wider benefits alongside ecological recovery can provide a more complete picture of the outcomes and value of restoration.

Evidence from scientific literature is unevenly distributed across regions, ecosystems and dimensions of recovery. Literature reviews have identified geographical and ecosystem biases in restoration research, as well as gaps in assessments of restoration outcomes (Ntshotsho, Reyers and Esler, 2011; Gerona-Daga and Salmo III, 2022; Barbosa-Dias *et al.*, 2025). These patterns may partly reflect differences in research funding and scientific infrastructure, imbalances in international research collaboration, and the limited representation in major bibliographic databases of research published in languages other than English or disseminated through local journals, technical reports and project documentation. Publications led by institutions from African countries are comparatively under-represented despite significant restoration activity and major national and regional initiatives, including Ethiopia's Green Legacy Initiative, the Great Green Wall and AFR100. Consequently, a literature review may not fully reflect the diversity of knowledge and experience – particularly where knowledge is generated by local and national institutions – which is required to understand restoration across different ecological and social contexts.

Rhinos at Kwandwe Game Reserve in the Eastern Cape of South Africa
© UNEP/TODD BROWN



2.6 RESTORATION GAPS AND OPPORTUNITIES

2.6.6

Governance and inclusivity gaps

Secure tenure and inclusive decision-making are important enabling conditions for effective and equitable restoration and they are closely connected to the implementation of KMGBF Targets 2 and 22 (FAO, SCBD and SER, 2024). Yet tenure rights are formally documented for only about 35 percent of the world's land (FAO, ILC and CIRAD, 2026). Insecure or insufficiently recognized tenure continues to constrain the ability of many smallholders, pastoralists, women, Indigenous Peoples and other rights holders to participate in and benefit from long-term restoration (McLain *et al.*, 2020) (Box 9).

BOX 9

3.9 billion ha
of land managed or held by
Indigenous Peoples

76 percent
of initiatives involved
government-owned land
FERM REGISTRY

Land tenure and restoration

Land tenure is a critical enabling condition for ecosystem restoration. It influences who has the rights to access, manage and restore land and resources, as well as who can make decisions about restoration and benefit from its outcomes. Secure and recognized tenure can support long-term stewardship and investment in restoration, while unclear or contested tenure can create barriers to implementation and undermine the sustainability of restoration gains.

Among the 86 initiatives documented through the FERM Registry that provided information on tenure, government-owned land was involved in 76 percent of initiatives, frequently in combination with private, collective or joint initiatives (34 percent). These initiatives also account for the largest reported restoration area – approximately 22.1 Mha – indicating that large-scale restoration frequently occurs under public or mixed tenure systems.

Indigenous Peoples manage or hold tenure rights over at least 3.9 billion ha of land, representing more than a quarter of the world's land surface. These lands intersect approximately 40 percent of all terrestrial protected areas and ecologically intact landscapes. Despite the significant contribution of Indigenous Peoples and their lands and territories to ecosystem stewardship, only two countries, Brazil and Yemen, reported area under restoration in Indigenous Peoples' lands and traditional territories in their CBD Seventh National Reports.

Sources: CBD. 2026. CBD Seventh National Reports. [Accessed on 18 March 2026]. <https://ort.cbd.int/national-reports/nr7>; FAO, ILC and CIRAD. 2026. *The status of land tenure and governance*. Rome and Paris. <https://doi.org/10.4060/cd8473en>; FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: FAO. [Accessed 29 April 2026]. <https://ferm.fao.org>; Garnett, S.T., Burgess, N.D., Fa, J.E., Fernández-Llamazares, Á., Molnár, Z., Robinson, C.J., Watson, J.E.M. *et al.* 2018. A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability*, 1: 369–374. <https://doi.org/10.1038/s41893-018-0100-6>

Gender inequalities are an important dimension of this gap. Legal, customary and social barriers can limit women's ownership and control of land and natural resources, as well as their participation and leadership in restoration decision-making (FAO, n.d.; UN Women and OHCHR, 2020; Halonen, 2023). These constraints can reduce women's opportunities to contribute to and benefit from restoration and are directly relevant to the gender-responsive implementation of the KMGBF, including Target 23.

More broadly, restoration interventions that do not adequately recognize tenure and resource rights, customary governance and meaningful participation can exacerbate existing inequalities or create risks of exclusion, displacement and

land conflict. Rights-based and inclusive governance is therefore important not only for safeguarding affected communities and rights holders, but also for creating the conditions for restoration to be sustained over time. Additionally, in conflict-affected settings, where restoration is severely needed, conflict-sensitive approaches such as participatory processes and benefit-sharing mechanisms can link restoration to peacebuilding and social cohesion (FAO, 2026a).

Meaningful engagement, respect for customary practices and recognition of community rights are essential to ensuring that restoration is locally appropriate, equitable and sustainable. It is important to acknowledge that restoration and conservation initiatives can, if poorly designed, cause harm. Communities have been displaced to establish conservation areas (IIED, 2026), evicted during forest protection efforts (Human Rights Watch, 2019), and excluded from restoration projects in contexts where insecure land tenure creates risks of land grabbing (McLain *et al.*, 2020).

Restoration planning and implementation should therefore incorporate appropriate safeguards, meaningful participation, recognition of legitimate tenure and resource rights, and accessible accountability and grievance mechanisms.

A community meeting in the Khata Corridor area, Nepal
© UNEP/TODD BROWN





A farmer holds guava in the enclosure
after harvesting in Sire District, Ethiopia
© UNEP/FRANK MACHIYA



Scaling solutions to accelerate action to 2030 and beyond

This chapter turns from assessing progress and gaps to identifying priorities for action and the respective actors responsible for delivering them. It uses the three interconnected pathways of the Ecosystem Restoration Decade's strategy – building a global movement, generating political support and developing technical capacity to examine how implementation can be accelerated through 2030 and beyond. Political support is critical to reshape the policies, incentives and decisions that drive degradation, creating the conditions for economies and societies to invest in recovery. Strengthening rights and leadership at all levels, alongside the capacity to implement, monitor, learn and adapt, is essential. Restoration must become a key part of how societies plan and shape their future.

3.1

Pathway I: Building a global movement

Restoration has developed into a broad global movement involving governments, international organizations, civil society, communities, farmers, pastoralists, scientific institutions, businesses, cities, young people, Indigenous Peoples and other communities. Since the launch of the Ecosystem Restoration Decade, its partnership network has expanded to more than 300 organizations, while restoration has gained visibility across public campaigns, education, media and international policy processes.

This expanding network has helped move ecosystem restoration beyond the environmental community and into wider societal debate. Partners are implementing activities across all major ecosystem types, while knowledge networks and communities of practice are increasingly connecting local experience with regional and global learning.

The priority for the second half of the Ecosystem Restoration Decade is to convert this growing visibility into sustained engagement and implementation.

“

more than

300

organizations in the
partnership networkECOSYSTEM
RESTORATION
DECADE

A global movement becomes a mechanism for scaling restoration when it strengthens local leadership, connects actors who would otherwise work separately, expands access to knowledge and resources, and builds durable societal and political support for restoration.

3.1 PATHWAY I: BUILDING A GLOBAL MOVEMENT

3.1.1 Turning awareness into action

Awareness contributes to restoration when it leads to informed decisions, sustained participation and behaviour change. Communication and outreach during the first half of the Ecosystem Restoration Decade have increased understanding of ecosystem degradation and the benefits that healthy ecosystems provide. The next step is to connect this awareness more consistently with practical opportunities to prevent degradation, participate in restoration and support long-term stewardship. Education is particularly important because the causes and consequences of degradation extend across generations. Incorporating restoration into formal and informal education can build ecological understanding and provide learners with the knowledge and skills needed to participate in local action. Programmes should connect global restoration objectives with local ecosystems and priorities and, where appropriate, combine classroom learning with practical restoration, monitoring and citizen-science activities. The #GenerationRestoration (Box 10) initiative provides one model for linking education with locally relevant learning and action.

BOX 10

at least **500**
schools worldwide
THE GOAL

72 000
students reached
in 41 countries
LESS THAN ONE YEAR
AFTER LAUNCH

#GenerationRestoration Schools

In partnership with the Foundation for Environmental Education, the Ecosystem Restoration Decade launched #GenerationRestoration Schools, with a goal of at least 500 schools worldwide becoming #GenerationRestoration Schools, mainstreaming science-based restoration knowledge into curricula and lesson plans.

Less than one year after its launch, the initiative is already active in over 100 schools across 41 countries, reaching 72 000 students.

The initiative is centred around a series of locally relevant lesson plans and student guides. These are based on stories from the UN World Restoration Flagships, with an initial focus of rollout in schools in Small Island Developing States, the Great Green Wall region and the Central American Dry Corridor. The materials help students understand ongoing restoration efforts, their impacts, and the broader environmental context. They also challenge students to apply the lessons to their local ecosystems.

Sources: UN Decade on Ecosystem Restoration. n.d. Schools and educators for ecosystem restoration. In: *UN Decade on Ecosystem Restoration*. [Cited 30 September 2026]. <https://www.decadeonrestoration.org/schools-and-educators-ecosystem-restoration>; FEE (Foundation for Environmental Education). n.d. #GenerationRestoration Schools. In: Leaf. [Cited 30 September 2026]. <https://www.leaf.global/generation-restoration-schools>

The Ecosystem Restoration Decade's website is set up as a shared home for the global restoration movement. All approved partners can publish stories, advertise events and share publications. Attracting between 700 000 and 1 million views a year, the website offers practical restoration guidance per ecosystem, a gamified pledge tracker, the Ecosystem Restoration Hub to find and support restoration initiatives, materials for schools and educators,



Children in the Comoros, one of the implementation sites of #GenerationRestoration Schools
© UNEP/FRANK PAPUSHKA

practical guides and immersive documentaries. Through specialized campaigns, the Decade consolidates support to undervalued restoration areas (e.g. across urban spaces and cities) or policy achievements. A monthly newsletter that reaches 35 000 subscribers brings partners' successes to the fore and serves as a call to action.

The Ecosystem Restoration Decade also enhances awareness by setting models to inspire restoration action and accelerate learning. As models of large-scale restoration initiatives, the 35 UN World Restoration Flagships (see Box 7 in Section 2.4.2) demonstrate how successful restoration approaches can be replicated and adapted in different contexts to attract investment and create impact. Their wider value depends on whether lessons about enabling conditions, implementation challenges, financing strategies, and outcomes are documented and made accessible so that they can be adapted to other contexts rather than simply replicated.

Furthermore, at least 4 990 media articles covering World Restoration Flagships have been produced in 1 600 outlets across 113 countries, reaching a potential 4 billion readers. A documentary series on the Flagships has reached 32 million viewers and received recognition at international film festivals. Through the #GenerationRestoration Schools programme, the impacts of the Flagships are reaching schoolchildren worldwide (Box 10), inspiring them to become future restoration practitioners. Communication should therefore extend beyond promoting the benefits of restoration. It should also explain the time required for ecosystem recovery, the risks of poorly designed interventions and the importance of addressing the drivers of degradation. This can help build realistic expectations and strengthen public support for effective, long-term restoration, rather than focusing on short-term activities measured primarily through inputs or area.

“

Media articles on World Restoration Flagships potential reach

4

billion readers

113 COUNTRIES

3.1 PATHWAY 1: BUILDING A GLOBAL MOVEMENT

3.1.2

Expanding partnerships to engage the whole of society

Scaling restoration requires partnerships that connect actors with different mandates, resources and forms of knowledge. In this process, all groups in society are important and equally responsible for strengthening this global movement. Governments provide policy direction and public investment; Indigenous Peoples and other groups, including farmers and communities, provide place-based leadership and stewardship; research institutions contribute evidence and innovation; civil society organizations support implementation and accountability; and businesses and financial institutions help mobilize rights-based and ethical investment and transform value chains.

“

All groups in society are important and equally responsible for strengthening this global movement.

Partnerships add value when they combine these capabilities around shared restoration objectives and clearly defined responsibilities. They can connect national policy with local implementation, improve access to finance and technical assistance, and enable experience from individual projects to inform wider programmes. Effective partnerships should be inclusive, transparent and accountable, with arrangements that recognize rights, manage conflicts of interest, and ensure that costs and benefits are distributed equitably.

The Ecosystem Restoration Decade partnership network illustrates the breadth of this engagement. A 2025 reporting exercise involving several partners found restoration activities across more than 100 countries and all major ecosystem types, with particularly strong participation from young people, Indigenous Peoples, and other groups. These networks also provide channels through which local experience and innovation can inform wider restoration practice for example:

- Restoration projects are active in over 100 countries across all continents, covering remote rural landscapes and dense urban settings alike.
- Partner activities span all major ecosystem types, with forest landscapes dominating, followed by coastal and marine ecosystems and farmlands: two-thirds of partners are working in forest landscapes (66), nearly half in agricultural lands (46) and a similar number in coastal and marine ecosystems (47).
- Ecosystem restoration has helped to sequester approximately 145 million tonnes of carbon dioxide to date.
- Innovative approaches are emerging, including gamified restoration campaigns, monitoring tools, drone-based ecosystem assessments, and blended finance models such as carbon credits and community microfunds.
- Over 85 percent of partners engage youth, while more than 90 percent work with Indigenous Peoples and other communities.

These findings illustrate the scale and diversity of restoration activities undertaken through the partnership network.

As restoration efforts expand across the world, knowledge networks and communities of practice can help ensure that local experiences, innovations and lessons learned are shared across regions and ecosystems, strengthening collective capacity for implementation.

3.1 PATHWAY I: BUILDING A GLOBAL MOVEMENT

3.1.3 Using cities as platforms for collective action

Urban expansion can contribute to habitat loss, fragmentation and degradation, posing direct threats to human well-being, biodiversity and ecosystem services (Dodman *et al.*, 2022; Mori *et al.*, 2025). Restoring urban ecosystems can increase biodiversity conservation, improve health and quality of life and create employment (UNEP, 2024c).

Cities provide opportunities to integrate restoration into decisions that extend beyond the environmental sector, including spatial planning, housing, transport, water management, public health and climate adaptation. Municipal authorities are also well placed to bring together communities, researchers, businesses, utilities and young people around locally visible restoration priorities.

The Generation Restoration Cities initiative has engaged 24 municipalities in 19 countries, representing 75 million citizens, in urban restoration programmes (UNEP, 2024c). Experience from this and other urban initiatives indicates that restoration is more likely to be sustained when it is incorporated into statutory planning, infrastructure investment and municipal budgets, rather than delivered only through stand-alone greening projects. Cities can further support implementation by establishing measurable objectives, protecting restored areas from subsequent development and monitoring ecological and social outcomes over time. The wider Milan urban area provides an example of collective urban action (Box 11).

BOX 11

3 million
native trees by 2030
MILAN

Cities too can revive nature: the wider Milan urban area

Home to over 5 million people, Milan lies within one of Europe's most polluted areas and the city is also experiencing a rising number of heatwaves due to climate change. Enclosed by the Alps and the Apennine mountains, the basin traps pollutants and as heat stress intensifies, public health and urban ecosystems are negatively impacted.

In response, a metropolitan restoration initiative is advancing a grey-to-green transition. Milan is leading the way on passive cooling efforts, exemplified by its now iconic green high rises, dubbed "vertical forests". On the ground, Milan has set itself the target of growing 3 million native trees by 2030. These will increase urban canopy cover, reduce heat island effects, and enhance biodiversity and ecosystem services, such as carbon sequestration. The city is transforming paved and underused urban areas into green infrastructure supported by innovative sustainable architecture, research, and strong youth involvement and leadership. Early monitoring has already recorded an increase in the diversity of pollinators, influenced by soil characteristics and the availability of nesting resources.

Source: Forestami. n.d. *Forestami*. [Cited 29 September 2026]. <https://forestami.org/en>

3.1 PATHWAY 1: BUILDING A GLOBAL MOVEMENT

3.1.4

Enabling youth leadership

Young people are already contributing to restoration through education, advocacy, research, monitoring, entrepreneurship and locally led projects. The priority is not simply to increase youth participation, but to establish sustained pathways through which young people can influence decisions, develop technical and professional skills and lead restoration initiatives.

The Ecosystem Restoration Decade Youth Task Force and Generation Restoration network illustrate how youth-led action can be connected with policy dialogue, capacity development and implementation. Through the Generation Restoration Microgrants scheme, the Youth Task Force supported ten youth-led restoration projects. Partnerships with organizations such as the Foundation for Environmental Education have also connected the Ecosystem Restoration Decade's Education Challenge with the #GenerationRestoration Schools programme and the Ecosystem Restoration Education Framework (Box 10 and Box 12).

BOX 12

at least **45**
different countries
YOUTH-LED RESTORATION

Youth as key agents of change

Young people are working hard across the globe to restore degraded ecosystems. They are engaging with the Ecosystem Restoration Decade through policy advocacy and research as well as through the implementation and stewardship of grassroots restoration projects. From coral reefs to mountain springs, young people are leading ecosystem restoration across at least 45 different countries, using technological innovation, social entrepreneurship and community partnerships to sustain their initiatives. Despite their ingenuity and resilience, young people face systemic challenges relating to governance, funding, implementation and capacity. The Ecosystem Restoration Decade Youth Task Force published a report (Duarte Guardia *et al.*, 2026) highlighting the opportunity to enhance youth participation through: institutionalization of youth participation in decision-making processes; establishment of dedicated youth restoration finance mechanisms; and increased access to capacity development and mentorship.

Source: Duarte Guardia, A., Fidge, P., Mucha, S., Imran, S., Pramuk, N., Salazar, K. and Siddiqui, T. 2026. *Policy coherence gaps affecting youth-led ecosystem restoration: insights from multi-regional youth initiatives*. V1 May 2026. The UN Decade on Ecosystem Restoration Youth Task Force. https://drive.google.com/file/d/12_SBSNaaGPL-MckSLF_mPn5JpGx1JyY/view

Youth consultations have highlighted several priorities: meaningful participation in governance and decision-making; practical training and mentoring; stronger links between education, restoration practice, green employment and entrepreneurship; and accessible finance and professional networks. Young people also seek greater opportunities to contribute to research, data collection and monitoring. Participation should be designed to include rural youth, young women, Indigenous youth and young people from remote or marginalized communities.⁸

⁸ The priorities summarized draw on recurring issues identified through youth dialogues and consultations convened through the Near East and North Africa Youth Network for Sustainable Forestry and Rangeland Management, including discussions held in connection with International Youth Day 2026. They are presented herein as illustrative youth perspectives relevant to the broader restoration agenda rather than as findings representative of all young people or regions.

FAO initiatives, including the World Food Forum Global Youth Action Initiative and the Young Forest Champions programme under Accelerating Innovative Monitoring for Forests, provide examples of support for youth participation in policy, applied research, forest monitoring and geospatial technologies. Such programmes can contribute to wider capacity development, but their longer-term value depends on whether training and consultation lead to continuing roles, employment, access to resources and influence over restoration decisions.

Governments, funders and restoration programmes can strengthen youth leadership by including young people in governance structures, providing microgrant and early-career funding, supporting mentoring and peer networks and creating professional pathways into restoration. These measures can expand implementation capacity through 2030 while helping develop the expertise and institutions needed to sustain restoration beyond the Ecosystem Restoration Decade.



Note: Insights from multiregional youth initiatives: Support Humanity Cameroon's watershed restoration project, Cameroon (top left; photo credit: SUHUCAM); Anambas Foundation's "Guardians of the Anambas Seas" coral rehabilitation project, Indonesia (top right; photo credit: Anambas Foundation); mountain spring restoration project coordinated by Youth Action for Next Generation, Pakistan (bottom left; photo credit: YANG); cloud forest restoration by Fundación Raíces de Amor que Sanan, Ecuador (bottom right; photo credit: Fundación Raíces de Amor Que Sanan).

Source: Reproduced with permission from FAO. 2024. *Land tenure for Indigenous and Afro-descendant Peoples – An investment for the planet*. Rome. <https://openknowledge.fao.org/items/498fc48c-d138-4934-8081-dbe319f517fb>

3.2 Pathway II: Generating political support

Political commitment has grown during the first half of the Ecosystem Restoration Decade. Restoration is embedded in the KMGBF and increasingly reflected in national biodiversity strategies, land degradation neutrality processes, climate commitments and regional initiatives. Some jurisdictions are establishing legally binding restoration obligations, such as the EU Nature Restoration Regulation.

The priority is now to translate these commitments into coordinated policies, budgets, institutions and incentives that can sustain implementation at scale. This requires political support beyond environmental ministries, integrating restoration into decisions on land and water use, agriculture, fisheries, infrastructure, economic development and public finance. The following sections examine how governments can establish the enabling conditions for restoration economies, align national planning, strengthen support for under-represented ecosystems and productive landscapes, mobilize public and private finance, and reform incentives that continue to drive degradation. The priorities must be adapted to national or local contexts, considering the ecological, socioeconomic and cultural value of restoration.

3.2 PATHWAY II: GENERATING POLITICAL SUPPORT

3.2.1 Aligning national planning and strengthening cross-sector coordination

“

National planning and reporting often remain institutionally separated.

Restoration contributes to biodiversity, climate, land, water and development objectives, yet national planning and reporting often remain institutionally separated. This fragmentation can duplicate effort, increase reporting burdens and, more importantly, produce policies that work against one another. The priority is not to create another restoration planning process, but to align existing national processes around shared priorities, spatial information, indicators and implementation mechanisms.

Poor coordination can also weaken ecological outcomes. Restoration designed around a single objective may overlook trade-offs or opportunities for wider benefits. For example, planting fast-growing non-native trees to meet a carbon

A firefighter of the Korea Forest Service at the forest fire command centre in Ulsan, Republic of Korea
© UNEP/TODD BROWN



target may provide limited benefits for biodiversity and, in some contexts, undermine water availability or efforts to reverse land degradation. Where restoration is planned in isolation, its wider economic contributions can also be overlooked and remain difficult to measure and attribute to restoration. Greater and longer-lasting benefits can be achieved when restoration is planned from the outset to contribute to several objectives, based on jointly identified priority areas and an assessment of potential synergies and trade-offs.

For example, the UK Government recently published a national security assessment drawing from a cross-government analysis on ecosystem degradation to inform UK national security planning. The assessment describes nature as “a foundation of national security”, because societies depend on ecosystems for water, food, clean air and critical resources (Defra, 2026). As these resources become scarcer, competition between state and non-state actors will increase, raising the risk of conflict within and between countries, political instability, migration and economic insecurity. Critical ecosystems are on a pathway to collapse if current trends continue. This makes restoration a part of the UK Government’s key responsibilities to keep its citizens safe. In doing so, restoration is no longer considered solely an environmental issue, but rather a priority embedded across different sectors.

National alignment therefore requires collaboration among the institutions responsible for biodiversity, climate, land degradation, forests, agriculture, water, wetlands, and marine and coastal ecosystems. Biodiversity strategies, land degradation neutrality targets, the land-use components of climate plans, national forest programmes, and relevant water and wetland policies should be developed and implemented in ways that reinforce common restoration priorities rather than through separate, sequential processes. Cross-sector coordination mechanisms can help clarify responsibilities, align public investment and address policy trade-offs that might otherwise undermine restoration (Box 13).

BOX 13

5

institutional mechanisms generated the greatest gains from working together

RWANDA · CENTRAL ASIA

The benefits of collaboration

Research in Rwanda and the drylands of Central Asia examined the costs and benefits of coordinating restoration across the three Rio Conventions. It found that pursuing each Convention’s goals independently requires far more money than most developing countries have available. Five institutional mechanisms generated the greatest gains from working together: joint interagency coordination bodies; shared information platforms; integrated monitoring, reporting and verification systems; coordinated budgeting and funding; and collaborative research and capacity development.

Of these, establishing a single national monitoring system for restoration delivered the largest efficiency gain on its own – reducing duplication, improving data quality and allowing one set of verified data to serve several reporting cycles at once. While coordinating institutions for land, climate and biodiversity already exist in most countries, data collection and tracking remain fragmented; harmonizing these into one national system for restoration is where the biggest gains lie.

Source: Mirzabaev, A., Akramkhanov, A., Umarova, S. and Pede, V. 2025. *Methodological Guideline for Integrative Land-Biodiversity-Climate Action Analysis through Ecosystem Restoration*. Bonn, Germany, Economics of Land Degradation Initiative. https://www.eld-initiative.org/fileadmin/ELD_Filter_Tool/Methodological_Guide_Rio_Synergies/Methodological_Guideline_for_Integrative_Action.pdf

Shared spatial information and compatible indicators can support this coordination. A single marine or coastal restoration effort – for example, restoring a mangrove, seagrass meadow or coral reef – can simultaneously rebuild fish stocks and support local livelihoods and development goals, while also strengthening climate adaptation, advancing biodiversity and nutrition and health objectives. Using a shared body of underlying information can make these contributions visible across policy frameworks, reduce duplication, and enable institutions to assess whether restoration is delivering the intended outcomes, while also preserving the distinct requirements of each multilateral environmental agreement.

National systems do not need to be fully centralized. They may instead connect information held by different institutions through agreed classifications, indicators, standards and data-sharing arrangements. Existing national planning and reporting cycles provide practical opportunities to strengthen these connections and establish cross-sector coordination among the responsible institutions (Figure 14). Shared datasets, harmonized indicators and coordinated reporting can support national decision-making while reducing duplication across international processes (Box 14; Box 15).

Figure 14 Convention reporting cycles



Source: Authors' own elaboration.



BOX 14

10.6 Mha
of degraded land by 2032
KENYA

Aligning restoration planning and reporting in Kenya

Kenya launched its Landscape and Ecosystem Restoration Monitoring Framework in 2025, providing a unified system to track progress towards restoring 10.6 Mha of degraded land by 2032. Its indicators are aligned with the country's obligations under the biodiversity, climate and land degradation conventions, AFR100 and the Bonn Challenge. The framework illustrates how a shared national approach can support domestic planning while reducing duplication across international reporting processes.

Source: Ministry of Environment, Climate Change and Forestry. 2025. *Kenya Landscape and Ecosystem Restoration Monitoring Framework*. Nairobi. <https://www.landscapealliance.org/publications/pdf/reports/2025-Kenya-FLRMF-Report.pdf>

BOX 15

 **3.4** Mha
under recovery
BRAZIL

 around **200**
restoration projects
integrated into
national databases
aligned with FERM
PERU

 **Standardized
monitoring**
systems and
broad institutional
participation
CHILE, MEXICO,
COLOMBIA

 **Geospatial
data**
institutional
coordination and data
harmonization

Strengthening national restoration information systems in Latin America and the Caribbean

Countries across Latin America and the Caribbean, supported by the Humboldt Institute (the Latin America and Caribbean Technical and Scientific Cooperation Support Centre), are demonstrating how national restoration information systems can improve planning and reporting. Brazil has combined satellite imagery, restoration databases and environmental compliance systems to identify approximately 3.4 Mha under recovery. Peru has integrated around 200 restoration projects into national databases aligned with the Framework for Ecosystem Restoration Monitoring (FERM), while Chile, Mexico and Colombia have strengthened national reporting through standardized monitoring systems and broad institutional participation. These experiences illustrate a broader regional trend towards the development of national restoration information systems, standardized monitoring approaches and interoperable reporting mechanisms. They also highlight the growing importance of geospatial data, institutional coordination and data harmonization in supporting countries to track progress.

Source: Authors' own elaboration.

3.2 PATHWAY II: GENERATING POLITICAL SUPPORT

3.2.2

Enhancing policy support for under-represented ecosystems

Chapter 2 shows that restoration commitments, implementation and reporting are concentrated in terrestrial ecosystems, particularly forests. Freshwater (inland water) and marine and coastal ecosystems are much less visible in national targets and monitoring, while degraded agricultural land, grasslands and other terrestrial ecosystems require greater attention.

Addressing this imbalance requires national targets, policies, finance and monitoring systems that reflect the ecological characteristics and governance arrangements of different ecosystems. Terrestrial ecosystems are still an important focus for restoration, and priorities should align with ecological and societal needs along with the economic resources available. In addition,

governments need to act on the connections among terrestrial, freshwater (inland water) and marine and coastal systems. Rivers, wetlands, peatlands, grasslands, mangroves, seagrasses and coral reefs cannot be restored effectively through isolated sectoral interventions. Upstream land use affects water quality and coastal ecosystems, while agriculture, water management, fisheries and infrastructure policies shape restoration opportunities across ecosystem boundaries.

As countries refine national restoration targets and implementation plans, greater ecosystem-level specificity can help ensure that restoration effort reflects the distribution and severity of degradation – rather than being concentrated where implementation and monitoring are already the easiest. Spatial assessments combining information on ecosystem condition, degradation, connectivity, climate risk, tenure and restoration feasibility can help identify priority areas and anticipate trade-offs (Box 16).

BOX 16

Spatial planning: planning effective restoration interventions

Target 1 of the KMGBF sets spatial planning as a key measure for bringing the loss of areas of high biodiversity importance close to zero. Planning where and when different activities take place across landscapes and seascapes allows countries to: weigh social, ecological and economic needs together; mainstream nature into development and economic policy; and identify priority areas for restoration, food production, conservation and sustainable use. FAO's guidelines on integrated land use planning (ILUP)ⁱ provide a practical, participatory and multidisciplinary framework for translating spatial information and analysis into agreed land-use decisions and restoration priorities, while managing trade-offs among biodiversity, food production, livelihoods, climate resilience and other land-use objectives. By bringing diverse stakeholders and knowledge systems together, FAO's ILUP approach provides an inclusive and integrated framework for mainstreaming biodiversity considerations into land-use decisions and aligning them with national development priorities and relevant global commitments and policy frameworks.

Additionally, a growing set of tools support spatial prioritization for restoration such as Earth Map,ⁱⁱ UN Biodiversity Lab,ⁱⁱⁱ WePlan Forests^{iv} and se.plan.^v These tools focus on terrestrial ecosystems and largely tree-based restoration, highlighting the need for additional solutions in aquatic ecosystems and terrestrial ecosystems, beyond forests and trees.

Notes:

ⁱ For further details, see: <https://openknowledge.fao.org/server/api/core/bitstreams/7b05555f-be05-4383-91b9-1116b52842a8/content>

ⁱⁱ For further details, see: <https://earthmap.org>

ⁱⁱⁱ For further details, see: <https://unbiodiversitylab.org/en>

^{iv} For further details, see: <https://www.weplan-forests.org>

^v For further details, see: <https://www.fao.org/in-action/sepal/activities/seplan/en>

Source: Authors' own elaboration.

Alongside stronger support for under-represented ecosystems, restoration must be integrated into the sectors and productive landscapes that both depend on and influence ecosystem condition. Agricultural landscapes require particular attention because they are both extensively degraded and central to global food systems underpinning food security and rural livelihoods.

Restoration in agricultural areas should therefore relate to efforts to avoid and reduce further degradation, restore soil functions, improve biodiversity and strengthen the resilience of production systems.

Recent work under UNCCD and FAO provides an opportunity to better integrate land degradation neutrality, sustainable land management and restoration within agricultural policy (Box 17). Approaches such as agroecology, agroforestry, integrated crop–livestock systems, sustainable rangeland management and improved soil management can contribute to restorative outcomes where they address degradation and result in measurable improvement in ecosystem condition.

BOX 17

Integrating agricultural land and soil restoration into land degradation neutrality, biodiversity and climate action: FAO–UNCCD guidance

In response to Decision 19/COP.16, the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Convention to Combat Desertification (UNCCD) jointly developed *Living soils, productive lands, resilient landscapes*, a practical guide to support countries in avoiding, reducing and reversing land and soil degradation in agricultural lands. The guidance is organized around three mutually reinforcing domains.

First, integrated land-use planning and sustainable land-use systems provide a framework for embedding LDN assessment, planning and monitoring into national processes and informing land-allocation decisions. Second, integrated, diversified and resilient production systems promote approaches such as agroecology, agroforestry, integrated crop–livestock systems and sustainable rangeland management to restore soil functions, enhance biodiversity, strengthen food security and build climate resilience. Third, an enabling environment addresses the governance, secure tenure rights – including those of women, traditional communities, pastoralists and Indigenous Peoples – policy coherence, institutional capacity, markets and finance needed to sustain implementation at scale. Together, these domains help countries advance LDN while generating co-benefits for biodiversity, climate and food security, supporting more integrated implementation across the Rio Conventions.

The guidance is complemented by a digital companion on ATIO – FAO’s artificial intelligence-enabled global platform for agrifood technologies and innovations – which translates its recommendations into a searchable, regularly updated menu of tools, field-tested practices and linked databases, filterable by user profile and scale of action.

Sources: UNCCD. 2024. *Avoiding, reducing and reversing land and soil degradation of agricultural lands*. Decision 19/COP.16. Adopted 13 December 2024. <https://www.unccd.int/official-documents/cop-16-riyadh-saudi-arabia-2024/documents/19cop16>; FAO and UNCCD. 2026. *Living soils, productive lands, resilient landscapes – Guidance on avoiding, reducing and reversing agricultural land and soil degradation*. Rome and Bonn, Germany. <https://doi.org/10.4060/ce1094en>

Freshwater (inland water) and marine and coastal ecosystems require greater attention within restoration policy and monitoring. Their restoration frequently involves multiple jurisdictions, sectors and users and may depend on addressing pressures well beyond the restoration site itself. For freshwater (inland water), river basin and catchment approaches can connect restoration with water management, agriculture, land-use planning and wetland conservation. Peatland restoration is an example of how biodiversity, water

and climate can all benefit significantly when policies are aligned across these agendas. Marine and coastal restoration similarly needs to be embedded in wider seascape and coastal planning. Mangroves, seagrasses, coral reefs and other coastal ecosystems are affected by land-based pollution, fisheries, coastal development and climate change, requiring coordination beyond individual restoration projects.

These ecosystems also offer some of the greatest opportunities for integrated restoration across international agreements. Freshwater (inland water) ecosystems are strategic for all three Rio Conventions, and the Convention on Wetlands serves as an important partner. Coordinating around freshwater (inland water) restoration, using shared spatial data and aligned indicators, could raise both the ecological impact of investment and the efficiency of reporting.

Peatlands – carbon-rich freshwater (inland water) ecosystems – make a disproportionately large contribution to climate change mitigation relative to their extent; despite this, only around 15 percent of Parties have included them in their NDCs (FAO, 2022). Peatland-rich countries are therefore encouraged to integrate peatland conservation, restoration and sustainable management explicitly into their NDCs, NBSAPs and LDN targets, supported by better mapping of peat extent and condition (UNEP, 2022). Marine and coastal ecosystems present a distinct but equally significant opportunity, as the international framework for ocean governance expands. At the UNFCCC COP 30 in 2025, seventeen countries joined the Blue NDC Challenge to integrate ocean-climate solutions into their national climate plans, while the One Ocean Partnership committed to catalysing USD 20 billion for regenerative seascapes by 2030. Ensuring that the integrated national systems being built are designed from the outset to capture inland water and marine and coastal data would extend the benefits of integration to the ecosystems that need them most.

Agricultural land restoration remains the most underfinanced category with annual private finance totalling just USD 1.4–1.6 billion, concentrated in three countries: United States of America, Australia and Argentina. Agriculture-based voluntary carbon market credits also generated only USD 30.6 million in 2023, representing about 5 percent of the total voluntary carbon market value (Wollenberg *et al.*, 2025). Reversing just 10 percent of human-induced degradation on current croplands could produce food sufficient for 154 million people annually; restoring abandoned croplands could potentially feed between 292 million and 476 million additional people (FAO, 2025e). Current investment levels remain far below the scale implied by these potential returns. Climate finance for carbon removals is also gaining momentum. Restoration and rehabilitation are among the practices that deliver those removals, by rebuilding vegetation cover and soil organic carbon. This opens a further avenue for mobilizing investment in the sector. Unlocking these flows at scale also depends on connecting restoration to the food systems agenda. Action Track 3 of the 2021 UN Food Systems Summit targets the levers that hold back restoration finance in agriculture, including repurposing agricultural subsidies and public support towards a just transition, payment for environmental services and the market failures that deter private investment (United Nations, 2020). Anchoring soil and agricultural land restoration in these pathways combines public support, value chain investment and carbon revenue.

“

around **15** percent
of Parties have included
peatlands in their NDCs

“

USD
1.4–1.6
billion
annual private finance
AGRICULTURAL LAND
RESTORATION

3.2 PATHWAY II: GENERATING POLITICAL SUPPORT

3.2.3

Recognizing land tenure, rights, knowledge and leadership of Indigenous Peoples and other communities

“

Indigenous Peoples and other communities should be recognized, not only as beneficiaries or participants, but also as knowledge holders and active stewards of ecosystems.

Secure tenure, recognition of rights and inclusive governance are essential to effective and equitable restoration. Indigenous Peoples and other communities should be recognized, not only as beneficiaries or participants, but also as knowledge holders and active stewards of ecosystems (FAO and UNEP, 2020; FAO, 2024a). Their priorities, practices and forms of collective governance can contribute to the design, implementation and long-term sustainability of restoration actions. Meaningful engagement, respect for customary practices and recognition of relevant collective rights and decision-making processes are essential to ensuring that restoration is locally appropriate, socially equitable and sustained over time.

The full and effective participation of Indigenous Peoples throughout the restoration process is key to socially equitable and sustainable outcomes (Nelson *et al.*, 2024). Strengthening capacities and leadership can help ensure that recovery continues beyond individual projects and funding cycles. New finance models targeted at local levels and territories of Indigenous Peoples promise to enable restoration from the ground up.

The Ecosystem Restoration Decade standards of practice include guidance developed by Indigenous Peoples, including best practice recommendations (Nelson *et al.*, 2024). The guidance highlights the importance of respecting the contributions of the food and knowledge systems of Indigenous Peoples and upholding their collective rights, including the right to self-determination and to free, prior and informed consent (FPIC) (Box 18), in alignment with the UN Declaration on the Rights of Indigenous Peoples. These principles should be applied from the earliest stages of planning and should extend throughout implementation, monitoring and evaluation, through to decisions about the use of restoration data.

National monitoring systems should provide appropriate mechanisms through which Indigenous Peoples can contribute data, indicators and knowledge according to their own priorities, FPIC, data sovereignty and governance arrangements. Greater visibility of restoration within Indigenous Peoples' lands and territories can help address important information gaps, but disaggregation should respect data sovereignty and should not require disclosure of culturally sensitive knowledge or locations.



BOX 18

Free, prior and informed consent

A foundational requirement for restoration work affecting Indigenous Peoples, their lands, territories and resources, or their food and knowledge systems, is the right to free, prior and informed consent (FPIC), in alignment with the United Nations Declaration on the Rights of Indigenous Peoples. Free, prior and informed consent is a right of Indigenous Peoples that enables them to provide or withhold consent at any point in projects that affect them or their territories, and to engage in the inception, design, implementation, monitoring and evaluation of the projects, programmes or interventions that draw on or disseminate their knowledge and restorative practices. A thorough and well-conducted FPIC process helps guarantee the right to self-determination; it can be considered both a right and a principle to ensure the effective participation of Indigenous Peoples in projects. Respecting this right strengthens the quality and durability of restoration outcomes while upholding the rights of those on whose lands, territories, resources, culture and knowledge such contributions depend. Ensuring that restoration contributes to, rather than undermines, the rights and well-being of Indigenous Peoples requires not only meaningful FPIC implementation as a process, but secure land tenure recognition, transparent benefit-sharing arrangements and accountability mechanisms that are accessible and rights-based.

Source: FAO. 2024. *Land tenure for Indigenous and Afro-descendant Peoples – An investment for the planet*. Rome. <https://openknowledge.fao.org/items/498fc48c-d138-4934-8081-dbe319f517fb>

FAO's Global Programme on Indigenous Peoples' Biocentric Restoration provides one example of an approach grounded in the relationships among people, biodiversity, food systems and territories. Its participatory monitoring platform connects Indigenous Peoples-led information with FERM while seeking to support reporting towards KMGBF Target 2. Such connections can increase recognition of Indigenous Peoples' contributions, provided that international reporting does not override community governance or reduce diverse food and knowledge systems to standardized indicators.

The KMGBF provides a wider policy basis for rights-based restoration. Target 22 calls for the full, equitable, inclusive, effective and gender-responsive participation of Indigenous Peoples and local communities in biodiversity-related decision-making and for respect for their cultures and rights over lands, territories, resources and traditional knowledge. Target 23 addresses gender equality and the participation and leadership of women and girls. Article 8(j) of the Convention on Biological Diversity decision 6/4 adopted the programme of work on Article 8(j), which includes a dedicated element on conservation and restoration aimed at promoting and supporting the conservation, protection and restoration of biodiversity led by Indigenous Peoples and local communities. The programme of work also calls on Parties to respect and maintain the knowledge, innovations and practices of Indigenous Peoples and local communities relevant to biodiversity conservation and sustainable use.

Implementation of these commitments can be supported by practical institutional measures as appropriate. Governments and restoration programmes should clarify and recognize legitimate tenure and resource rights, embed FPIC in decision-making, provide accessible grievance and accountability mechanisms, and direct finance and technical support to Indigenous Peoples-led and locally led initiatives.

3.2 PATHWAY II: GENERATING POLITICAL SUPPORT

3.2.4

Transitioning from restoration projects to restoration economies

“

Scaling restoration requires an enabling economic environment, in which maintaining and recovering ecosystems becomes a viable and durable investment rather than a temporary project cost.

Individual restoration projects are essential for restoring degraded ecosystems, but they cannot by themselves transform the economic conditions that drive degradation or determine whether restored ecosystems remain healthy. Scaling restoration requires an enabling economic environment, in which maintaining and recovering ecosystems becomes a viable and durable investment rather than a temporary project cost. A central challenge is the mismatch between the timing and distribution of restoration costs and benefits. Many restoration benefits – such as flood regulation, biodiversity, carbon storage, water security, health benefits and cultural values – are public goods or accrue over long time horizons, while the costs are often borne immediately by landholders, communities or project implementers. This mismatch weakens incentives for investing in restoration and helps explain why successful projects do not automatically develop into self-sustaining restoration economies.

Economic valuation and true-cost accounting can help make the wider benefits of restoration – and the costs of continued degradation – more visible in public and private decision-making. By strengthening the evidence base for policy, investment and business decisions, these approaches can help build the case for public investment and identify where mechanisms such as payments for ecosystem services, blended finance or other incentives may be appropriate. Finance and investment must reach where restoration is implemented, at local levels and in territories of Indigenous Peoples.

Governments have a central role in creating the conditions for restoration economies. Priorities include:

- integrating ecosystem values and degradation risks into national development planning, budgeting and public investment appraisal;
- aligning public expenditure, taxation and subsidies with restoration objectives;
- strengthening tenure and resource rights;
- reducing regulatory and financial barriers to restoration-compatible enterprises;
- supporting sustainable value chains and markets;
- using public and concessional finance to address risks and benefits that markets do not adequately value; and
- establishing safeguards and standards to ensure that investment delivers credible and equitable restoration outcomes.

Some countries are beginning to incorporate restoration into wider economic transitions rather than treating it as a stand-alone environmental objective. This approach positions healthy ecosystems as productive natural infrastructure that underpins livelihoods, food security, climate resilience and long-term economic prosperity. Studies have also shown the potential of ecosystem restoration – a labour-intensive activity – in creating jobs. Investing in nature-based solutions and ecosystem restoration can generate up to 32 million new jobs globally by 2030 (ILO and IUCN, 2024).

Forests offer a clear example of how restoration can become part of the wider economy. Combining forest and landscape restoration with sustainable forest management could generate USD 165 billion in additional annual revenue by 2030, while global demand for sustainable wood is expected to double or

triple by 2050. Markets can reinforce this link, for example Forest Stewardship Council-certified roundwood earns an extra USD 1.80 per m³ through price premiums and efficiency gains, underlining how demand for sustainable products can raise the value of standing forests and create incentives for restoration (FAO, 2026a).

The Sustainable Blue Economy transition framework used by the Small Island Developing States Ecosystem Restoration Flagship, for example, helps countries assess governance, finance, institutional capacity, data and partnerships, and identify priority reforms and investment opportunities. It has informed national transition processes in Comoros, Saint Lucia and Vanuatu. In Comoros, the process supported the development of a national Sustainable Blue Economy Policy and a transition pathway connecting ecosystem restoration, ocean governance and economic development.

Complementary approaches such as ecosystem service valuation and the System of Environmental-Economic Accounting–Ecosystem Accounting (SEEA EA) can further support this transition by making the contributions of ecosystems more visible in public policy and investment decisions. Their value depends on whether the resulting information influences budgets, regulations, incentives and investment priorities.

Moving from individual projects to restoration economies therefore requires governments to address the policies and financial signals that shape how ecosystems are valued and managed. This transition can create the conditions for restoration to expand beyond time-bound projects and become an enduring component of economic development and public investment.





3.2 PATHWAY II: GENERATING POLITICAL SUPPORT

3.2.5

Scaling private and blended finance

Private and blended finance can complement public resources where restoration generates identifiable revenue streams or where public and philanthropic funding can reduce risks sufficiently to mobilize additional investment. The challenge is therefore not simply to attract private capital, but to direct finance towards interventions that are ecologically credible, socially equitable and appropriate to the time horizons of ecosystem recovery. Where carbon, biodiversity or other environmental markets are used, robust standards, additionality, safeguards, transparent monitoring and credible claims are essential to ensure that finance supports genuine restoration outcomes.

Credible and cost-effective monitoring is also an important enabling condition for investment. By reducing uncertainty, strengthening accountability and providing evidence of results, robust monitoring can help lower investment risk and support results-based financing. Its value, however, depends on the rigour of the governance and measurement systems behind them (zu Ermgassen and Löfqvist, 2024). Financing arrangements should therefore cover the costs of assessing baselines, long-term monitoring and adaptive management, rather than directing resources only to initial implementation.

Regenerative agricultural finance provides one example. Farmers often bear the costs and risks of transition to regenerative practices before benefits materialize, making longer-term purchasing commitments, guarantees, preferential lending, insurance and blended capital potentially important for supporting changes in management. Marine restoration presents similar challenges. The Global Fund for Coral Reefs illustrates how grants, technical assistance and investment capital can be combined to support reef-positive economic activities while addressing pressures on coral ecosystems.

Momentum is building. For example, by November 2025, the UNFCCC COP28 Action Agenda on Regenerative Landscapes⁹ had brought together more than 40 stakeholders reporting over USD 9 billion in investment commitments. The World Economic Forum's 100 Million Farmers initiative mobilizes support for farmers who are transitioning to regenerative farming models (WEF, 2024). Carbon finance represents another potential source of private and blended finance for restoration, where interventions generate additional, measurable and durable removals. The distinction between existing carbon sinks and the additional mitigation attributable to restoration is therefore critical to understanding this opportunity (Box 19).

At the sovereign level, the Tropical Forest Forever Facility¹⁰ uses an approach where returns on sponsor capital are intended to fund payments to tropical forest countries for maintaining standing and restored forests. More than USD 6.7 billion had been announced by the close of COP30, against an initial sponsor-capital goal of USD 25 billion and a full capitalization target of USD 125 billion. The facility is now structuring the institutional set-up under a board co-chaired by Brazil and Norway.

Expanding private finance must also strengthen, rather than weaken, the rights and leadership of Indigenous Peoples and other rights holders. Through the

“

USD

9 billion

more than 40 stakeholders

investment commitments

UNFCCC COP28

⁹ The COP28 Action Agenda on Regenerative Landscapes is an initiative to catalyse a transformative shift towards regenerative and agroecological practices across global landscapes, aiming to establish resilient, sustainable food systems that benefit both nature and people. For further details, see: https://climateaction.unfccc.int/Initiatives?id=COP28_Action_Agenda_on_Regenerative_Landscapes

¹⁰ For more information, see: <https://tfff.earth>

BOX 19

6.5 Gt**CO₂ / year**current annual removals
STANDING FORESTS**Restoration mitigation potential: the role of removals**

Restoration can contribute to climate change mitigation by increasing the removal and storage of atmospheric carbon dioxide (CO₂) in vegetation and soils, creating opportunities to connect restoration with climate finance. Forests already provide a major carbon sink, but existing removals are not the same as the additional mitigation that can be achieved through restoration or improved management. Forests account for an estimated 90 percent of the land sink, with most removals occurring in standing forests and a smaller share – around 15 percent – associated with newly established forests (Grassi *et al.*, 2022).

The potential to increase removals through human action, however, presents a different picture. Standing forests currently account for much larger annual removals, while afforestation and reforestation offer substantially greater technical potential for additional mitigation.

Forest-based removals	Current annual removals (i.e. average flux 2001–2023)	Estimated cost-effective mitigation potential (i.e. potential increase in flux for the period 2020–2050)
Standing forests/improved forest management	6.5 Gt CO ₂ /year	0.9 Gt CO ₂ /year
Afforestation/reforestation	1.1 Gt CO ₂ /year	1.2 Gt CO ₂ /year

Notes: Gt = gigatonne = 1 billion tonnes. Land-based measures to mitigate climate change: cost-effective mitigation potential means it is deemed feasible at a cost of USD 100/t CO₂ removal; technical potential is what is deemed possible with available technology, regardless of the cost. The technical potential for improved management is 1.8 Gt CO₂/year, while the technical potential for afforestation/reforestation is assessed as high as 8.5 Gt CO₂/year (Roe *et al.*, 2021) or even as high as 10 Gt CO₂/year (Kübler and Günter, 2024).

Sources: Authors own elaboration based on: for annual removals Grassi, G., Conchedda, G., Federici, S., Abad Viñas, R., Korosuo, A., Melo, J., Rossi, S. *et al.*, 2022. Carbon fluxes from land 2000–2020: bringing clarity to countries' reporting. *Earth System Science Data*, 14(10): 44643–4666. <https://doi.org/10.5194/essd-14-4643-2022>; Melo, J., Rossi, S., Achard, F., Alkama, R., Canadell, J.G., Federici, S., Friedlingstein, P. *et al.*, 2026. The LULUCF Data Hub: translating global land use emissions estimates into the national GHG inventory framework. *Earth System Science Data*, In review. <https://doi.org/10.5194/essd-2025-631>; for mitigation potential Roe, S., Streck, C., Beach, R., Busch, J., Chapman, M., Daioglou, V., Deppermann, A. *et al.*, 2021. Land-based measures to mitigate climate change: Potential and feasibility by country. *Global Change Biology*, 27(23): 6025–6058. <https://doi.org/10.1111/gcb.15873>; Kübler, D. and Günter, S. 2024. Forest restoration for climate change mitigation and adaptation. In: *Restoring Forests and Trees for Sustainable Development: Policies, Practices, Impacts, and Ways Forward*, pp.135–159. Oxford, UK, Oxford Academic. <https://doi.org/10.1093/9780197683958.003.0006>.

FPIC Donor Task Force, FAO is advancing work on private sector engagement, FPIC and ethical investment in dialogue with the UN Working Group on Business and Human Rights, UN agencies, multilateral and bilateral donors, and the UN mechanisms on the rights of Indigenous Peoples. These principles should be incorporated throughout project design, investment decisions, implementation and monitoring.

Private and blended finance can therefore make an important contribution to closing the restoration finance gap, but it is not appropriate for every intervention. Governments and development partners should match financing instruments to the types of benefits produced, use public resources strategically, and ensure that investment supports effective, equitable and lasting restoration (Box 20).

International recognition and technical support can help restoration initiatives develop credible investment pipelines and connect with potential funders. The UN World Restoration Flagships provide examples of how international recognition, technical support and investor engagement can help move initiatives from demonstration towards larger-scale financing (Box 21).

BOX 20

USD **2.4** billion
in grants
GEF-7 AND GEF-8

USD **18.2** billion
in co-financing
GEF-7 AND GEF-8

Scaling blended finance through GEF-9

Restoration-related investments financed by the Global Environment Facility (GEF) provide an important source of international public finance supporting implementation across recipient countries. Across GEF-7 and GEF-8, approximately USD 2.4 billion in grants and USD 18.2 billion in co-financing were attributable to restoration-related activities. However, most co-financing has come from governments, GEF agencies and donor institutions, with private sector contributions representing only around one-eighth of the total. GEF-9 places greater emphasis on mobilizing private capital through blended finance mechanisms and collaboration with investors, including an aspirational target to allocate approximately 25 percent of its resources to mechanisms that mobilize private investment. This approach could expand the resources available for restoration, provided that investment is supported by robust environmental and social safeguards and delivers measurable restoration outcomes (GEF IEO, 2025; GEF, 2026).

Sources: Authors' own elaboration, based on data from GEF. 2026. Project. [Accessed on 20 May 2026]. <https://www.thegef.org/projects-operations/database>; and on GEF. 2025. *Work Program and Budget of the Independent Evaluation Office, FY 2026*. Washington, D.C. https://www.thegef.org/sites/default/files/documents/2025-05/EN_GEF_IEO_work_program_and_budget_FY_26.pdf



BOX 21

more than
 **300**
 organizations
 restoring
 the landscape
 ATLANTIC FOREST

nearly
 **1** Mha
 of thicket
 being restored
 SOUTH AFRICA

USD
 **120** million
 Spekboom
 Restoration
 Outcome Bond
 WORLD BANK

more than
 **35** million
 tonnes
 of CO₂ equivalent
 in carbon removals
 over 40 years

From recognition to investment: connecting World Restoration Flagships with finance

The UN World Restoration Flagships give initiatives global visibility, resulting in increased interest from private sector companies and philanthropic organizations. New Flagships include restoration of the Atlantic Forest in Latin America and the revival of the thicket ecosystem in South Africa.

The Atlantic Forest, which once stretched across Brazil, Paraguay and Argentina, has been reduced to fragments by centuries of deforestation, agricultural expansion and urbanization. Today, through the Trinational Atlantic Forest Pact,ⁱ more than 300 organizations are restoring the landscape, creating wildlife corridors for endangered species – like the jaguar and the golden-headed lion tamarin – securing water supplies for cities including Sao Paulo, building resilience to climate change, and creating thousands of jobs.

Recognition as a UN World Restoration Flagship has helped raise the initiative's profile and facilitated the development of relationships with private sector partners through the Ecosystem Restoration Decade's Advisory Board. Partnerships have been established with restoration enterprises such as Courageous Land,ⁱⁱ and funding has been secured from Salesforce (Salesforce, 2023).

Declared a UN World Restoration Flagship at the seventh UN Environment Assembly, the Thicket Restoration Movement in South Africaⁱⁱⁱ is restoring nearly 1 Mha of the country's most biodiverse yet severely neglected ecosystems. Thicket improves soil health, stores carbon and provides drought-resilient fodder for large livestock and other large mammals – a high priority for a region that experienced its worst drought in 100 years in 2023/24. It also provides a safe habitat for various native browser species, including black rhinos and African elephants, responding to long-term threats.

The World Bank announced a 14-year, USD 120 million Spekboom Restoration Outcome Bond to mobilize private sector investment in thicket restoration (World Bank, 2026). In addition, the initiative has attracted private sector investors, including Amazon (with a commitment to purchase carbon removal units generated by the project) and Imperative (investing in the restoration of 50 000 ha). Together, these investments are expected to support the restoration of South Africa's thicket ecosystem while generating more than 35 million tonnes of CO₂ equivalent in carbon removals over 40 years (ESG News Editorial Team, 2026).

Notes: ⁱ See: <https://www.decadeonrestoration.org/trinational-atlantic-forest-pact>. ⁱⁱ See: <https://www.courageousland.com>. ⁱⁱⁱ See: <https://www.decadeonrestoration.org/thicket-restoration-south-africa>.

Sources: Salesforce. 2023. Salesforce Unveils Climate Finance Playbook; Grants \$8.3M to Climate Justice and Nature Nonprofits. In: *Salesforce*. [Cited 8 June 2026]. <https://www.salesforce.com/news/stories/climate-week-investments-climate-finance-playbook>; World Bank. 2026. World Bank Prices 14-Year Spekboom Restoration Outcome Bond in South Africa. In: *World Bank*. [Cited 8 June 2026]. <https://www.worldbank.org/en/news/press-release/2026/04/23/world-bank-prices-14-year-spekboom-restoration-outcome-bond-in-south-africa>; ESG News Editorial Team. 2026. Imperative Secures \$91 Million To Scale South Africa Ecosystem Restoration Project. In: *ESG Newsletter*. [Cited 8 June 2026]. <https://esgnews.com/imperative-secures-91-million-to-scale-south-africa-ecosystem-restoration-project>

3.2 PATHWAY II: GENERATING POLITICAL SUPPORT

3.2.6 Redirecting harmful subsidies

Mobilizing additional restoration finance will have limited effect if much larger public and private financial flows continue to drive ecosystem degradation. Governments therefore need to address not only the amount invested in restoration, but also the policies, subsidies and incentives that shape land use, production, pollution and resource extraction. Target 18 of the KMGBF calls for environmentally harmful incentives to be identified and then eliminated,

phased out or reformed; the goal is to substantially and progressively reduce them by at least USD 500 billion per year by 2030.

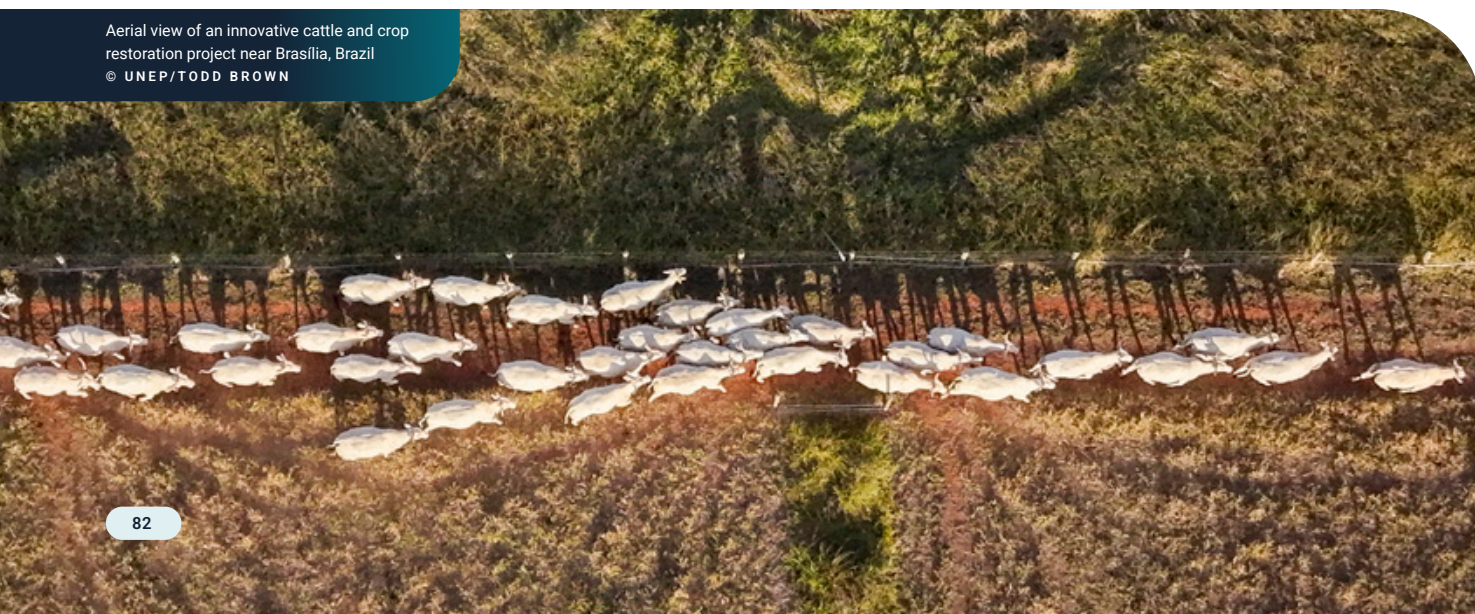
The scale of the misalignment is substantial. In 2023, governments provided an estimated USD 2.4 trillion in environmentally harmful subsidies, mainly for fossil fuels (USD 1.1 trillion), agriculture and water (both USD 0.4 trillion). When private investment in activities that directly harm nature is included, total nature-negative finance reached an estimated USD 7.3 trillion, more than 30 times the USD 220 billion invested in nature-based solutions, including restoration (UNEP, 2026).

While these figures cover financial flows affecting nature more broadly, they also have direct implications for restoration. Public resources used to restore ecosystems can be undermined when substantially larger financial subsidies and investments continue to incentivize unsustainable land use, resource extraction or production practices. Reforming harmful incentives can therefore not only reduce pressures on ecosystems, but free public resources and create stronger incentives for restorative management.

Reform should begin with transparent national assessments that identify which subsidies and incentives are harmful; who benefits from them; and how they affect ecosystems and livelihoods. Governments can then prioritize measures that produce clear environmental benefits while taking into account food security, affordability, employment and other development objectives. Options include redesigning eligibility criteria, introducing environmental conditions, redirecting support towards sustainable practices, and phasing out incentives for activities that cause the greatest damage. Subsidy reform is politically and socially complex. Changes should be designed so as to avoid shifting costs into groups in vulnerable circumstances; they should be accompanied, where appropriate, by positive incentives and transitional support for producers and communities, including training and dedicated credit lines. Reformed incentives need to be designed to reach smallholders, including women farmers, and their land rights must be recognized; channelling payments through cooperatives or producer organizations can help (Ding *et al.*, 2021). Redirecting or repurposing public support towards sustainable management and restoration can help align economic incentives with the goals and targets of the KMGBF, including Targets 2 and 18.

Generating political support for restoration therefore requires action on both sides of the financial equation: increasing and improving investment in ecosystem recovery, while progressively reforming the much larger flows that continue to degrade nature.

Aerial view of an innovative cattle and crop restoration project near Brasília, Brazil
© UNEP/TODD BROWN



3.3 Pathway III: Developing technical capacity

Halfway through the Ecosystem Restoration Decade, the technical foundations for ecosystem restoration are stronger. Global principles and standards now provide clearer guidance for restoration practice. FERM provides a platform for compiling and sharing information; methodologies and guidance for monitoring KMGBF Target 2 continue to be developed; and training programmes, knowledge platforms and ecosystem-specific tools are also expanding. In Africa, for example, FAO works with the African Union Development Agency–New Partnership for Africa’s Development, supporting countries’ restoration monitoring through the AFR100 initiative; and with the Great Green Wall Accelerator, to help achieve its goals.

The priority is now to translate these resources into sustained institutional and practical capacity: technical guidance and data platforms will improve restoration only if practitioners can apply them. National institutions can adopt tools to sustain monitoring systems and use the evidence gathered to adapt implementation and inform decisions. Beyond the UN and global research institutes, subregional technical and scientific cooperation centres – selected and coordinated by the Secretariat of the Convention on Biological Diversity¹¹ – play a key role in regional capacity development by providing localized expertise and facilitating knowledge exchange among neighbouring countries. Their proximity allows them to offer tailored support that reflects regional realities, making capacity development more effective and sustainable.

Capacity development must therefore extend beyond individual training to include institutions, data systems, long-term monitoring, applied research and knowledge exchange.

These capabilities are needed throughout the restoration cycle: to assess degradation, identify priorities, design appropriate interventions, implement them effectively, monitor ecological and socioeconomic outcomes, and adjust management as conditions change. The following sections examine how wider application of restoration standards, stronger national monitoring capacity and closer links between data, knowledge and decision-making can improve the effectiveness and durability of restoration.

3.3 PATHWAY III: DEVELOPING TECHNICAL CAPACITY

3.3.1 Applying restoration standards

Standards of practice provide guidance to demonstrate ecological recovery or equitable social outcomes by providing a common framework for planning, implementing, monitoring and adapting restoration over time. They can also provide governments, funders and practitioners with a clearer basis for determining whether proposed activities are likely to contribute to effective restoration. The UN Decade *Standards of practice to guide ecosystem restoration* translate the Ecosystem Restoration Decade principles into practical guidance covering assessment, planning and design, implementation, ongoing management, and monitoring and evaluation (Nelson *et al.*, 2024) (Figure 15).

¹¹ At COP15, CBD Parties adopted a technical and scientific cooperation mechanism comprising a network of regional and/or subregional support centres to be coordinated by a global coordination entity (CBD COP DEC 15/8) to promote and facilitate, on a demand-driven basis, technical and scientific cooperation and technology transfer among Parties to support the implementation of the KMGBF.

“

Capacities are needed throughout the restoration cycle.

BOX 22

**228** kmof rivers and streams
where restoration has
been initiated**6** of **7**sites where
salmon returns
have increased

Respectful returns: Restoring resilience to endemic salmon ecosystems in Canada in partnership with Indigenous Peoples

Salmon are in peril in Canada and their loss has wide-reaching ecological, cultural and economic impacts. The World Restoration Flagship Respectful Returns: Restoring Resilience to Salmon Ecosystems in Canada¹ is fostering partnerships with Indigenous Peoples and non-Indigenous communities to heal broken ecological and cultural relationships. This initiative takes place within and beyond watersheds in seven sites administered by Parks Canada on the Pacific and Atlantic coasts. Drawing on the knowledge and leadership of Indigenous Peoples, together with academic expertise in aquatic restoration, the initiative supports the return of resilient salmon ecosystems and relationships.

The mosaic of restoration strategies addresses degradation caused by logging, climate-related stresses, and threats in the marine environment. It has tested innovative marine-rearing techniques, restored hydrological processes and critical spawning habitats, and reduced illegal fishing through collaborative stewardship. As a result, salmon returns have increased in six of the seven sites. The Flagship has initiated restoration in 228 km of rivers and streams, generated over 100 new jobs and 300 media stories, and supported 40 research projects to add to the evidence base for salmon recovery. It has also demonstrated that shared stewardship and restoring community trust can be more effective and enduring than conventional strategies such as closing fisheries to recover salmon populations. While these approaches are place-based and context-specific, all maintain ethical space where Indigenous Peoples' knowledge and scientific knowledge are valued equally and respectfully.

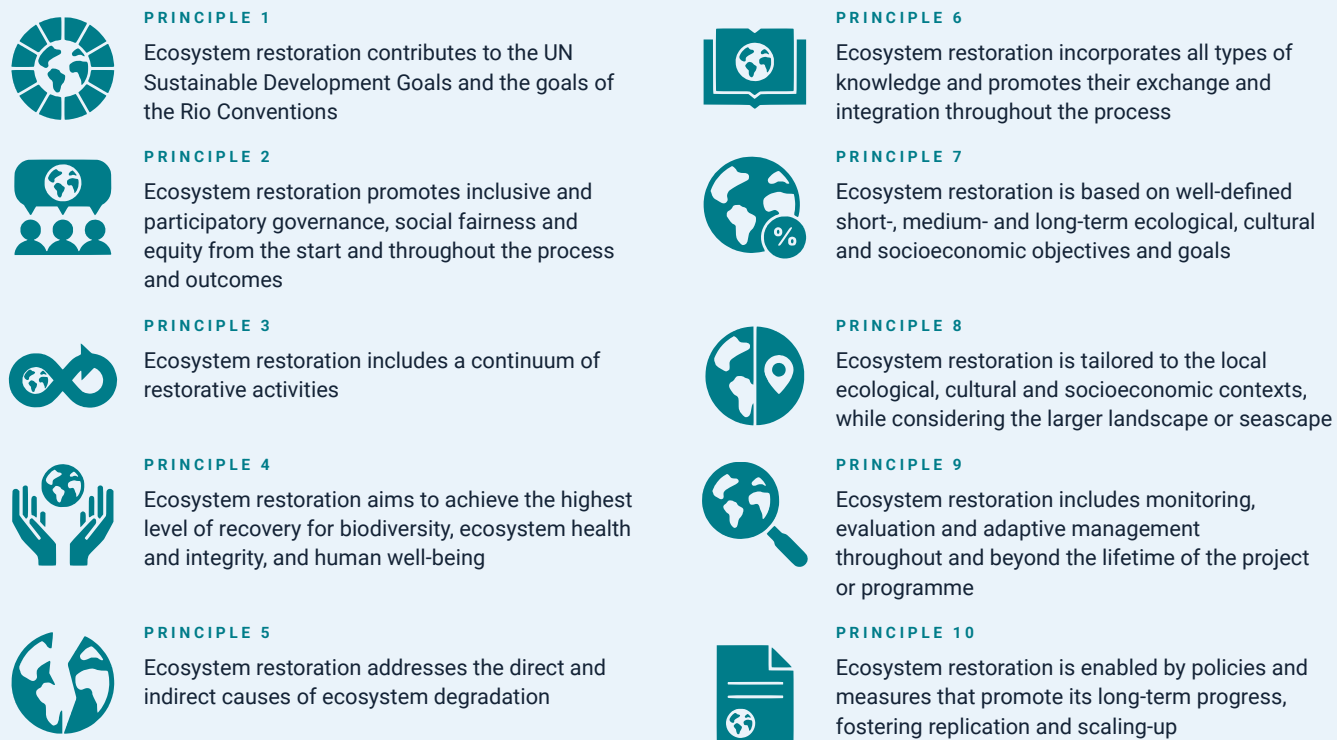
Despite the positive results, salmon populations are still far from their historic abundance. However, with a growing community of 32 partners, this work will continue to scale to revive relationships between salmon, ecosystems and people.

Note: ¹ For further details, see: <https://ferm.fao.org/en/search/initiatives/fjRoHw3CwWKfyoe3CFHhttps://ferm.fao.org/en/search/initiatives/fjRoHw3CwWKfyoe3CFH>

Sources: Contributed by the Parks Canada Agency, drawing on Parks Canada. n.d. Salmon Soaring at Parks Canada. In: *Parks Canada*. [Cited 29 September 2026]. <https://parks.canada.ca/nature/science/especes-species/saumon-salmon>; UN Decade on Ecosystem Restoration. n.d. Respectful Returns in Canada. In: *UN Decade on Ecosystem Restoration*. [Cited 29 September 2026]. <https://decadeonrestoration.org/respectful-returns-canada>

They apply across the broad continuum of restorative activities and emphasize ecological integrity, stakeholder and rights holder engagement, long-term management and learning (Box 22). The Society for Ecological Restoration's *International principles and standards for the practice of ecological restoration* provide complementary guidance focused specifically on ecological restoration, including the use of reference models and tools for assessing ecological recovery and social benefits (Gann *et al.*, 2026).

Examples of good restoration practices include how to address immediate impacts of disturbances and long-term actions to reduce their recurrence and impacts. Integrated fire management addresses fire “long before, during, and long after a fire”, including the restoration of burnt areas. To this end, the Global Fire Management Hub, launched by FAO and UNEP in 2023, supports countries with policies, fire risk assessment, early warning, data sharing, capacity development and fostering of wildfire-resilient communities (FAO, 2024b). While large single-species plantations can increase fire risk (FAO, 2026a), appropriate and carefully planned post-fire restoration can reduce future fire risk by stabilizing soils, restoring native vegetation in collaboration with local communities, and favouring species and genetic diversity to strengthen the capacity of restored systems to adapt to a changing climate.

Figure 15 Principles that underpin the United Nations Decade on Ecosystem Restoration

Sources: FAO, IUCN CEM and SER. 2021. *Principles for ecosystem restoration to guide the United Nations Decade 2021–2030*. Rome, FAO. <https://openknowledge.fao.org/bitstreams/b234f058-9f77-4481-b870-a7fa2e7ad5f8/download>; and FAO, SCBD and SER. 2024. *Delivering restoration outcomes for biodiversity and human well-being – Resource guide to Target 2 of the Kunming-Montreal Global Biodiversity Framework*. Rome, Montreal, Canada and Washington, D.C. <https://openknowledge.fao.org/handle/20.500.14283/cd2925en>

“

The priority for the second half of the Decade is not to develop additional high-level principles, but to increase the consistent application of those already available.

The priority for the second half of the Decade is not to develop additional high-level principles, but to increase the consistent application of those already available. This means integrating standards into project design, public and international financing criteria, national guidance, procurement, and professional training and monitoring, and ensuring that practitioners have the capacity to adapt to ecological and social contexts. Simple self-assessment tools and practical guidance can further help project developers, funders and practitioners assess alignment with the standards throughout the restoration cycle.

Existing capacity development initiatives can support wider uptake. The Taskforce on Best Practices Ecosystem Restoration Decade Capacity, Knowledge and Learning Action Plan¹² provides a framework for addressing restoration capacity needs, while e-learning resources and interactive tools currently under development aim to make the standards of practice more accessible to practitioners and institutions.

Standards can also help reduce financial risk. The restoration insurance developed by SCOR SE, for example, requires restoration projects to demonstrate consistency and alignment with restoration standards or an equivalent certification as a condition for coverage (Box 23).

¹² For further details, see: <https://doi.org/10.4060/cc6592en>

BOX 23

SCOR SE: Using insurance to de-risk restoration

An innovative method to scale restoration is de-risking investment in restoration. In 2022, Société Commerciale de Réassurance, Societas Europaea (SCOR SE), a global reinsurance company, began exploring how insurance could support biodiversity, reducing the financial risk of funding and delivering ecological restoration. In 2024, Nature, Restoration and Conservation (NatReCo) was released; this scheme covers risks during the implementation phase of ecological restoration and supports initiatives' long-term management. Other products are being developed to cover more activities across the wider restoration and conservation spectrum.

Ecosystems are dynamic and uncertain, and restoration projects can face unexpected events. For example, a fire, unexpected frost or drought could occur after planting, destroying the seedlings, and replanting may be too expensive for the project. SCOR's insurance covers specified risks and provides funding to restore or adapt following such an event, reducing the financial risks associated with restoration investment.

To ensure ecological quality, SCOR requires projects to undergo an independent ecological due diligence process before insurance is issued. Projects are reviewed and graded by the Society for Ecological Restoration against the SCOR Ecological Restoration Insurance Standards. Only projects that meet these standards are eligible for coverage.

Sources: SCOR. 2024. Nature Restoration & Conservation Insurance Initiative. In: SCOR. [Cited 29 September 2026]. <https://www.scor.com/en/nature-restoration-conservation-insurance-initiative>; SCOR. 2024. Launch of a new insurance product. In: SCOR. [Cited 29 September 2026]. <https://www.scor.com/en/news/scor-launches-new-insurance-product-support-ecological-restoration-restore-product>

3.3 PATHWAY III: DEVELOPING TECHNICAL CAPACITY

3.3.2

Strengthening monitoring and reporting capacity

Significant progress has been made in establishing a framework for monitoring restoration (Box 24).

The KMGBF Target 2 Roadmap provides a collaborative framework for improving restoration monitoring and reporting. Coordinated by FAO with the CBD Secretariat and other partners, it brings together countries, international organizations, scientific institutions, Indigenous Peoples and other restoration actors to advance methodologies and indicators, strengthen national capacity, improve data availability and interoperability and promote technical cooperation. A resource guide has been developed to help countries turn restoration commitments into plans; the guide encourages them to monitor not only area under restoration but also gains in biodiversity, ecosystem functions and services, and ecological integrity and connectivity (FAO, SCBD and SER, 2024). As guidance for monitoring restoration has evolved, the CBD Secretariat has assessed Indicator 2.1 at the highest level of methodological maturity, reflecting the availability of an operational database, refined guidance and support for Parties (CBD, 2026b).

Countries require the institutional and technical capacity to establish baselines, define monitoring objectives, select appropriate indicators, collect and validate data and interpret results over time – all in the ecological and national context. National systems should build on existing institutions and data, incorporating information generated by subnational governments, Indigenous Peoples,

communities, research organizations and restoration practitioners. Where appropriate, interoperable systems can allow the same underlying information to support both national planning and international reporting processes, reducing duplication while maintaining their distinct requirements.

Important gaps remain in ecosystem coverage. Freshwater (inland water) and marine and coastal ecosystems restoration can be difficult to monitor because of ecosystem connectivity, gaps in spatial information and the cost and complexity of aquatic observations. Collaboration with the Convention on Wetlands and interoperability between FERM and the Kelp Forest Alliance have increased the visibility of aquatic restoration, but further partnerships with ecosystem-specific monitoring networks are needed (Box 25). The UN Decade of Ocean Science for Sustainable Development also provides an important scientific framework: the challenge is to protect and restore ecosystems and biodiversity, with the aim of strengthening understanding, management and recovery of marine ecosystems (IOC-UNESCO, 2021).

“

Monitoring must move beyond recording only hectare-based area under restoration.

Monitoring must move beyond recording only hectare-based area under restoration. Indicator 2.1 provides essential information on the extent of restoration activity, but area alone does not show whether biodiversity is recovering, ecosystem functions and connectivity are improving, or people are benefiting. Monitoring should therefore combine both quantitative and qualitative measures with ecological, socioeconomic and cultural indicators suited to the ecosystem, to restoration objectives and to the national or local context (FAO and WRI, 2019).

It should assess the degree of recovery and the effects, both positive and negative, of restoration interventions (Nelson *et al.*, 2024).

Gender-responsive monitoring also remains limited, particularly the collection of sex-disaggregated information on participation, employment, leadership, tenure and the distribution of benefits (FAO, 2023). Addressing this gap, while recognizing Indigenous Peoples' rights, knowledge and data sovereignty, is essential to assess whether restoration is equitable as well as ecologically effective.

Strengthening monitoring capacity enables governments and practitioners to identify where implementation is falling short, direct finance more effectively and adapt management as ecosystems recover or conditions change.



A staff member of the Nature Reserve Affairs Center reviews Chinese white dolphin monitoring data at the AI dolphin monitoring control centre in Xiamen, China
© UNEP/TODD BROWN

BOX 24

1 015restoration initiatives
across 135 countriesFERM REGISTRY
APRIL 2026

Framework for Ecosystem Restoration Monitoring

The Framework for Ecosystem Restoration Monitoring (FERM) supports the compilation and use of ecosystem restoration information and data from national and international reporting processes, building on existing institutional arrangements rather than establishing parallel systems. As custodian of KMGBF headline Indicator 2.1, FAO developed FERM to support countries in monitoring and reporting the area under restoration towards Target 2.

FERM is a voluntary initiative-level framework and data platform that enables the monitoring and reporting of information across ecological and socioeconomic dimensions, including biodiversity, climate, soil, water, tenure, culture and traditional communities. The indicators can contribute to a more complete assessment of restoration, but their use depends on national and subnational capacity to generate, manage and interpret the underlying data.

As of April 2026, the FERM Registry and interoperable partner platforms documented 1 015 restoration initiatives across 135 countries, covering approximately 30 Mha. Spatially explicit information was available for 78 percent of this area. Connections with partner databases have increased the integration and visibility of restoration information.

Source: FERM. 2026. FERM Framework for Ecosystem Restoration Monitoring. In: FAO. [Cited 29 April 2026]. <https://ferm.fao.org>

3.3 PATHWAY III: DEVELOPING TECHNICAL CAPACITY

3.3.3

Turning restoration data into knowledge and action

Monitoring contributes to effective restoration when results are interpreted against agreed objectives and used to adapt implementation. This is particularly important because ecosystem recovery can be non-linear; outcomes may take years to become visible, and approaches that work in one ecological or social context may not work in another.

Monitoring systems should therefore be linked to mechanisms for learning (Box 25). Periodic assessment can show whether interventions are progressing as expected, identify emerging risks and indicate where management approaches need to change. At the national level, the resulting evidence can inform priorities, budgets and policy rather than serving international reporting alone.

Countries and restoration programmes can strengthen this learning function by linking monitoring systems with communities of practice, research institutions, practitioner networks and Indigenous Peoples. Targeted research can help address persistent knowledge gaps, test restoration approaches, and improve understanding of ecological and socioeconomic outcomes across different ecosystems and contexts.

Knowledge platforms and professional networks can help make this evidence accessible across regions and ecosystem types. Clear documentation of what worked, what did not, under which conditions and at what cost can reduce repeated trial and error while avoiding the direct transfer of interventions between contexts where ecological or social conditions differ.

“

The objective is to create a cycle in which monitoring informs learning, learning informs decisions and decisions improve restoration practice.

The framework for collecting and disseminating good restoration practices is an exemplary knowledge platform that connects practitioners with documented restoration experience through FERM and other knowledge platforms.¹³ Its value lies in making practical experience easier to find and compare, and thus relevant for local contexts.

The objective is to create a cycle in which monitoring informs learning, learning informs decisions and decisions improve restoration practice. Together with wider application of restoration standards and stronger national monitoring capacity, this can help countries move from measuring the extent of restoration activity to demonstrating and improving its effectiveness.

BOX 25

Saint Lucia: Building a national restoration monitoring system through the Small Island Developing States Restoration Flagship

Under the Small Island Developing States World Restoration Flagship, Saint Lucia is strengthening its national ecosystem restoration monitoring system by integrating restoration data across institutions through the Framework for Ecosystem Restoration Monitoring (FERM). Led by the Department of Sustainable Development with support from FAO and UNEP, the Flagship brings together agencies responsible for forestry, fisheries, water resources, biodiversity and restoration to establish a coordinated approach to monitoring and reporting aligned with Target 2 of the Kunming-Montreal Global Biodiversity Framework.

A national assessment identified the enabling environment as the principal constraint to scaling restoration and highlighted priorities including stronger institutional coordination, improved monitoring systems, sustainable financing, knowledge management and community engagement. Stakeholders also mapped existing restoration datasets and found that information on restoration remains fragmented across agencies and projects. In response, they proposed establishing a national restoration monitoring working group, strengthening data-sharing arrangements and developing a shared national restoration information repository supported through FERM.

The next phase focuses on designating national restoration monitoring focal points, developing a baseline restoration database, and developing a customized national FERM dashboard to support reporting and decision-making. The Saint Lucia experience demonstrates how Flagships can help countries move from fragmented project monitoring towards integrated national restoration information systems that support both domestic planning and international reporting.

Source: UN Decade on Ecosystem Restoration. 2026. Saint Lucia strengthens restoration monitoring under the SIDS Restoration Flagship. In: *UN Decade on Ecosystem Restoration*. [Cited 30 September 2026]. <https://www.decadeonrestoration.org/saint-lucia-strengthens-restoration-monitoring-under-sids-restoration-flagship>

¹³ See more here: <https://ferm.fao.org/search/good-practices>



From restoration ambition to lasting recovery

This report shows that the central challenge for the second half of the Ecosystem Restoration Decade is no longer to establish the importance of ecosystem restoration, but to translate growing ambition into effective and lasting implementation at scale.

Progress is being made, but it varies across ecosystems and regions and remains insufficient to meet global targets and national commitments. Accelerating action will require governments and their partners to close implementation gaps, correct imbalances across ecosystems and establish the conditions needed to sustain recovery beyond 2030.

Success cannot be measured in hectares alone. While information on the area under restoration is essential for tracking implementation, it does not show whether biodiversity is recovering, ecosystem functions and connectivity are improving, or benefits are being shared equitably. Ecological and socioeconomic indicators – including gender-responsive indicators and sex-disaggregated data where relevant – are needed to assess restoration effectiveness. The Target 2 Roadmap and the FERM platform can support countries to strengthen their capacity to select relevant indicators, monitor outcomes and adapt restoration approaches as evidence develops.

Lasting recovery also depends on addressing the drivers of degradation. Restoration cannot succeed as a collection of isolated interventions if policies, incentives and economic activities continue to damage ecosystems. Restoration must be embedded in the decisions that shape how land, water and natural resources are governed, used and financed. Planning across connected landscapes, watersheds and seascapes can help align restoration with biodiversity, climate, land, water and development objectives while reducing conflicts among them.

A systematic approach to restoration is therefore needed. Effective and lasting restoration requires addressing the interconnected ecological, social, economic, governance and institutional factors that drive degradation, rather than focusing on individual sites. Integrated landscape and seascape-scale solutions can tackle root causes, strengthen policies and institutions, engage stakeholders, secure rights and livelihoods, mobilize finance and apply adaptive management. By linking restoration with biodiversity conservation, climate action, food security and sustainable development, a systematic

“

Lasting recovery depends on addressing drivers of degradation.

approach supports long-term recovery, permanence of ecosystems and human well-being through coordinated, whole-of-society action.

People, rights and local leadership are integral to this transition. Indigenous Peoples and traditional communities have long sustained knowledge systems, practices and forms of stewardship grounded in enduring relationships with ecosystems. Their experience demonstrates that ecosystems cannot be considered separately from the people that inhabit, use, govern and care for them. Secure and recognized land tenure, meaningful participation and respect for rights and knowledge systems can support long-term stewardship and reduce the risks of exclusion, displacement and conflict. Effective restoration should therefore strengthen relationships of responsibility and care that continue beyond individual projects and funding cycles.

However, despite its wider benefits, restoration remains undervalued and underfinanced. Greater transparency and more comprehensive accounting of the benefits of restoration and the costs of degradation are needed to help address this imbalance.

Finance must likewise support long-term recovery rather than short-term activity. Annual investment needs to more than quadruple from current levels by 2030. This requires greater and better-targeted public expenditure, reform of harmful subsidies and financial flows, and appropriate use of private and blended investment. The longer-term opportunity is to move beyond financing individual projects towards restoration economies that facilitate ecological recovery, benefiting livelihoods and generating lasting benefits. The three pathways of the Ecosystem Restoration Decade – building a global movement, generating political support and developing technical capacity – provide a framework for bringing together the conditions needed to support this transition and sustain restoration over the long term. The 2030 targets are critical milestones, but they cannot mark the end of the restoration journey. Further degradation must be prevented; restoration must continue wherever ecosystems remain degraded; the approach must be sustained long enough to restore ecosystem functions, biodiversity and benefits for people. The legacy of the Ecosystem Restoration Decade should therefore be measured not only by the area brought under restoration by 2030, but by whether the world is better equipped to keep ecosystems healthy and sustain their recovery for generations to come.

Beyond targets, hectares and timelines, restoration requires renewed attention to the relationship between societies and the living systems on which they depend. Ecosystem degradation erodes the foundations of livelihoods, well-being and economic resilience; recovery can help rebuild them. The task ahead is to create the conditions in which ecosystems can regenerate, and people can continue to thrive alongside them. Each ecosystem placed on a sustained path to recovery contributes to this wider transformation. This is the promise of restoration and the foundation for Nature's comeback.

“

The 2030 targets are critical milestones, but they cannot mark the end of the restoration journey.



A forest department scientist performs a gastropod survey at the mangrove restoration site in Pubudugama, Sri Lanka
© UNEP/TODD BROWN

References

- Barbosa-Dias, L.G., Silveira, F.A.O., de Marco Júnior, P. and Padilha, D.L. 2025. Open ecosystems restoration: a global review shows biases and mismatches between theory and practice. *Restoration Ecology*, 33(1): e14307. <https://doi.org/10.1111/rec.14307>
- Bayraktarov, E., Saunders, M.I., Abdullah, S., Mills, M., Beher, J., Possingham, H.P., Mumby, P.J. and Lovelock, C.E. 2016. The cost and feasibility of marine coastal restoration. *Ecological Applications*, 26(4): 1055–1074. <https://doi.org/10.1890/15-1077>
- Beck, M.W., Losada, I.J., Menéndez, P., Reguero, B.G., Díaz-Simal, P. and Fernández, F. 2018. The global flood protection savings provided by coral reefs. *Nature Communications*, 9: 2186. <https://doi.org/10.1038/s41467-018-04568-z>
- Brudvig, L.A., Barak, R.S., Bauer, J.T., Caughlin, T.T., Laughlin, D.C., Larios, L., Matthews, J.W., Stuble, K.L., Turley, N.E. and Zirbel, C.R. 2017. Interpreting variation to advance predictive restoration science. *Journal of Applied Ecology*, 54(4): 1018–1027. <https://doi.org/10.1111/1365-2664.12938>
- Campagne, C.S., Roy, L.A., Langridge, J., Claudet, J., Mongruel, R., Beillouin, D. and Thiébaud, É. 2023. Existing evidence on the impact of changes in marine ecosystem structure and functioning on ecosystem service delivery: a systematic map. *Environmental Evidence*, 12: 13. <https://doi.org/10.1186/s13750-023-00306-1>
- CBD (Convention on Biological Diversity). 2010. *The Strategic Plan for Biodiversity 2011–2020*. UNEP/CBD/COP/DEC/X/2. <https://www.cbd.int/doc/decisions/cop-10/cop-10-dec-02-en.pdf>
- CBD. 2026a. *Draft global report on collective progress in the implementation of the Kunming-Montreal Global Biodiversity Framework*. CBD/SBSTTA/28/2/Add.1/Rev.1. Montreal, Canada, Secretariat of the Convention on Biological Diversity. <https://www.cbd.int/doc/c/5611/c35f/aa96bdcd816f5952d586a777/sbstta-28-02-add1-rev1-en.pdf>
- CBD. 2026b. *Updated metadata for the headline indicators for the Kunming-Montreal Global Biodiversity Framework*. CBD/SBSTTA/28/INF/4. Nairobi. <https://www.cbd.int/doc/c/8f2f/6c26/b6416adf45ed77c1a58137dd/sbstta-28-inf-04-en.pdf>
- Convention on Wetlands. 2025a. *Global Wetland Outlook 2025*. Gland, Switzerland. <https://doi.org/10.69556/GWO-2025-eng>
- Convention on Wetlands. 2025b. *Report of the Secretariat on assessment of progress on wetland restoration: Full assessment report*. COP15 Inf.3. https://www.ramsar.org/sites/default/files/2025-05/COP15_inf_3_full_restoration_assessment_report_e.pdf
- Convention on Wetlands. 2026. National Report Data System. [Accessed on 5 June 2026]. <https://nrds.ramsar.org>. Licence: CC-BY-4.0.
- Costa Rica. 2025. *Contribución Nacionalmente Determinada de Costa Rica, CND 2025–2035*. Nationally Determined Contribution submitted to the UNFCCC, 14 November 2025. San José, Ministerio de Ambiente y Energía (MINAE), Dirección de Cambio Climático. <https://unfccc.int/documents/497449>
- CPI (Climate Policy Initiative). 2025. *Global Landscape of Climate Finance 2025*. [Cited 26 June 2026]. https://www.climatepolicyinitiative.org/wp-content/uploads/2000/06/compressed_Global-Landscape-of-Climate-Finance-2025.pdf
- Crumpler, K., Wybieralska, A., Roffredi, L., Tanganelli, E., Angioni, C., Prosperi, P., Umulisa, V. et al. 2024. *Agrifood systems in nationally determined contributions: Global analysis – Key findings*. Rome, FAO. <https://doi.org/10.4060/cd3210en>
- Defra (Department for Environment, Food and Rural Affairs). 2026. *Nature security assessment on global biodiversity loss, ecosystem collapse and national security*. London, UK Government. <https://www.gov.uk/government/publications/nature-security-assessment-on-global-biodiversity-loss-ecosystem-collapse-and-national-security>
- del Gatto, F., Carino, J., Cunningham, M. and Rugadya, M. 2022. *Widening the Path: An Overview of Philanthropy's Role in Supporting Indigenous Peoples*. Caribbean Central American Research Council and Ford Foundation. <https://entrepovos.org/en/widening-the-path-an-overview-of-philanthropys-role-in-supporting-indigenous-peoples/>

- Ding, H., Faruqi, S., Wu, A., Altamirano, J.C., Anchondo Ortega, A., Zamora Cristales, R., Chazdon, R., Vergara, W. and Verdone, M. 2018. *Roots of Prosperity: The Economics and Finance of Restoring Land*. Washington, D.C., World Resources Institute. <https://www.wri.org/research/roots-prosperity-economics-and-finance-restoring-land>
- Ding, H., Markandya, A., Barbieri, R., Calmon, M., Cervera, M., Duraisami, R., Singh, R., Warman, J. and Anderson, W. 2021. Repurposing Agricultural Subsidies to Restore Degraded Farmland and Grow Rural Prosperity. Washington, D.C., World Resources Institute. <https://doi.org/10.46830/wri.rpt.20.00013>
- Dodman, D., Hayward, B., Pelling, M., Castan Broto, V., Chow, W., Chu, E., Dawson, R. et al. 2022. Cities, Settlements and Key Infrastructure. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, pp. 907–1040. Cambridge, UK and New York, USA, Cambridge University Press. <https://doi.org/10.1017/9781009325844.008>
- Dudgeon, D., Arthington, A.H., Gessner, M.O., Kawabata, Z.-I., Knowler, D.J., Lévêque, C., Naiman, R.J. et al. 2006. Freshwater biodiversity: importance, threats, status and conservation challenges. *Biological Reviews*, 81(2): 163–182. <https://doi.org/10.1017/S1464793105006950>
- Eger, A., Aguirre, J.D., Altamirano, M., Arafeh-Dalmau, N., Arroyo, N.L., Bauer-Civiello, A.M., Beas-Luna, R. et al. 2024. The Kelp Forest Challenge: A collaborative global movement to protect and restore 4 million hectares of kelp forests. *Journal of Applied Phycology*, 36: 951–964. <https://doi.org/10.1007/s10811-023-03103-y>
- FAO (Food and Agriculture Organization of the United Nations). n.d. Indicator 5.a.2. In: *SDG Indicators Portal*. [Cited 05 June 2026]. Rome. <https://www.fao.org/sustainable-development-goals-data-portal/data/indicators/5a2-women-s-equal-rights-to-land-ownership/en>
- FAO. 2008. *Fisheries management. 2. The ecosystem approach to fisheries. 2.1 Best practices in ecosystem modelling for informing an ecosystem approach to fisheries*. FAO Technical Guidelines for Responsible Fisheries, No. 4, Suppl. 2, Add. 2. Rome. <https://openknowledge.fao.org/items/e8644bf4-c258-455b-89b2-8006f4c8d014>
- FAO. 2022. *Peatlands and climate planning – Part 1: Peatlands and climate commitments*. Rome. <https://doi.org/10.4060/cc2895en>
- FAO. 2023. *Monitoring gender equality and social inclusion in forest and landscape restoration programs*. Rome. <https://openknowledge.fao.org/handle/20.500.14283/cc7649en>
- FAO. 2024a. *Land tenure for Indigenous and Afro-descendant Peoples – An investment for the planet*. Rome. <https://openknowledge.fao.org/items/498fc48c-d138-4934-8081-dbe319f517fb>
- FAO. 2024b. *Integrated fire management voluntary guidelines – Principles and strategic actions*. Second edition. Forestry Working Paper, No. 41. Rome. <https://doi.org/10.4060/cd1090en>
- FAO. 2025a. *Framework for Ecosystem Restoration Monitoring, FERM – A global platform to track and accelerate global ecosystem restoration efforts*. Rome. <https://openknowledge.fao.org/items/a06218bc-4a11-4ca2-a616-321e6c0b08f3>
- FAO. 2025b. *Achieving global restoration targets through the Kunming-Montreal Global Biodiversity Framework – Target 2 Roadmap*. Rome. <https://openknowledge.fao.org/server/api/core/bitstreams/49a1b65b-945a-4b49-8cab-a0ad2c9d30aa/content>
- FAO. 2025c. *The State of the World's Land and Water Resources for Food and Agriculture 2025 – The potential to produce more and better*. Rome. <https://doi.org/10.4060/cd7488en>
- FAO. 2025d. *Global Forest Resources Assessment*. Rome. <https://doi.org/10.4060/cd6709en>
- FAO. 2025e. *The State of Food and Agriculture 2025 – Addressing land degradation across landholding scales*. Rome. <https://doi.org/10.4060/cd7067en>
- FAO. 2026a. *The State of the World's Forests 2026 – Restoring forests and landscapes: the way forward for a sustainable future*. Rome. <https://doi.org/10.4060/ce0633en>
- FAO. 2026b. *The State of World Fisheries and Aquaculture 2026 – Blue Transformation: turning vision into impact*. Rome. <https://doi.org/10.4060/cd8357en>
- FAO, ILC (International Land Coalition) and CIRAD (French Agricultural Research Centre for International Development). 2026. *The status of land tenure and governance*. Rome and Paris. <https://doi.org/10.4060/cd8473en>
- FAO, IUCN CEM (International Union for Conservation of Nature Commission on Ecosystem Management) and SER (Society for Ecological Restoration). 2021. *Principles for ecosystem restoration to guide the United Nations Decade 2021–2030*. Rome, FAO. <https://openknowledge.fao.org/bitstreams/b234f058-9f77-4481-b870-a7fa2e7ad5f8/download>
- FAO, SCBD (Secretariat of the Convention on Biological Diversity) and SER. 2024. *Delivering restoration outcomes for biodiversity and human well-being – Resource guide to Target 2 of the Kunming-Montreal Global Biodiversity Framework*. Rome, Montreal, Canada and Washington, D.C. <https://openknowledge.fao.org/handle/20.500.14283/cd2925en>

- FAO and UNEP (United Nations Environment Programme). 2020. *The State of the World's Forests 2020 – Forests, biodiversity and people*. Rome. <https://doi.org/10.4060/ca8642en>
- FAO and WRI (World Resources Institute). 2019. *The road to restoration: A guide to identifying priorities and indicators for monitoring forest and landscape restoration*. Rome and Washington, D.C. <https://openknowledge.fao.org/handle/20.500.14283/ca6927en>
- FERM (Framework for Ecosystem Restoration Monitoring). 2026. *FERM Registry*. In: FAO. [Cited 29 April 2026]. <https://ferm.fao.org>
- Fluet-Chouinard, E., Stocker, B.D., Zhang, Z., Malhotra, A., Melton, J.R., Poulter, B., Kaplan, J.O. et al. 2023. Extensive global wetland loss over the past three centuries. *Nature*, 614: 281–286. <https://doi.org/10.1038/s41586-022-05572-6>
- Friedlingstein, P., Jones, M.W., O'Sullivan, M., Andrew, R.M., Bakker, D.C.E., Hauck, J., Le Quéré, C. et al. 2022. Global Carbon Budget 2021. *Earth System Science Data*, 14(4): 1917–2005. <https://doi.org/10.5194/essd-14-1917-2022>
- Gann, G.D., McDonald, T., Walder, B., Aronson, J., Nelson, C.R., Jonson, J., Hallett, J.G. et al. 2019. International principles and standards for the practice of ecological restoration. Second edition. *Restoration Ecology*, 27(S1): S1–S46. <https://doi.org/10.1111/rec.13035>
- Gann, G.D., McDonald, T., Walder, B., Aronson, J., Nelson, C.R., Hallett, J.G., Guariguata, M.R. et al. 2026. International principles and standards for the practice of ecological restoration. Third edition. *Restoration Ecology*, 34(S2): e70441. <https://doi.org/10.1111/rec.70441>
- GCF (Green Climate Fund). 2017. *Mainstreaming gender in Green Climate Fund projects*. Incheon, Republic of Korea. <https://www.greenclimate.fund/document/mainstreaming-gender-green-climate-fund-projects>
- GEF. 2024. Land Degradation. In: *The Global Environment Facility (GEF)*. Washington, D.C. [Accessed on 20 May 2026]. <https://www.thegef.org/what-we-do/topics/land-degradation>
- GEF (Global Environment Facility). 2025. *Work Program and Budget of the Independent Evaluation Office, FY26*. Washington, D.C. https://www.thegef.org/sites/default/files/documents/2025-05/EN_GEF_IEO_work_program_and_budget_FY_26.pdf
- Gerona-Daga, M.E.B. and Salmo III, S.G. 2022. A systematic review of mangrove restoration studies in Southeast Asia: Challenges and opportunities for the United Nations' Decade on Ecosystem Restoration. *Frontiers in Marine Science*, 9: 987737. <https://doi.org/10.3389/fmars.2022.987737>
- Guannel, G., Arkema, K., Ruggiero, P. and Verutes, G. 2016. The Power of Three: Coral Reefs, Seagrasses and Mangroves Protect Coastal Regions and Increase Their Resilience. *PLoS ONE*, 11(7): e0158094. <https://doi.org/10.1371/journal.pone.0158094>
- Halonen, T. 2023. Securing women's land rights for increased gender equality, food security and economic empowerment. In: *UN Chronicle*. [Cited 05 June 2026]. <https://www.un.org/en/un-chronicle/securing-women%E2%80%99s-land-rights-increased-gender-equality-food-security-and-economic>
- Halpern, B.S., Frazier, M., Afflerbach, J., Lowndes, J.S., Micheli, F., O'Hara, C., Scarborough, C. and Selkoe, K.A. 2019. Recent pace of change in human impact on the world's ocean. *Scientific Reports*, 9: 11609. <https://doi.org/10.1038/s41598-019-47201-9>
- Halpern, B.S., Walbridge, S., Selkoe, K.A., Kappel, C.V., Micheli, F., D'Agrosa, C., Bruno, J.F. et al. 2008. A Global Map of Human Impact on Marine Ecosystems. *Science*, 319(5865): 948–952. <https://doi.org/10.1126/science.1149345>
- Hatcher, J., Owen, M. and Yin, D. 2021. *Falling short – Donor funding for Indigenous Peoples and local communities to secure tenure rights and manage forests in tropical countries (2011–2020)*. Oslo, Rainforest Foundation Norway. https://dv719tqmsuwvb.cloudfront.net/documents/Publikasjoner/Andre-rapporter/RFN_Falling_short_2021.pdf
- Human Rights Watch. 2019. Kenya: Abusive Evictions in Mau Forest. In: *Human Rights Watch*. [Cited 26 June 2026]. <https://www.hrw.org/news/2019/09/20/kenya-abusive-evictions-mau-forest>
- ICRI (International Coral Reef Initiative). 2023. The Coral Reef Breakthrough. In: ICRI. [Cited 26 September 2026]. <https://icriforum.org/documents/coral-breakthrough/>
- IIED (International Institute for Environment and Development). 2026. DRC: "Today, our forest is now called a park". In: *IIED*. [Cited 26 June 2026]. <https://www.iied.org/drc-today-our-forest-called-park>
- ILO (International Labour Organization) and IUCN. 2024. *Decent Work in Nature-Based Solutions 2024: Unlocking jobs through investment in skills and nature-based infrastructure*. Geneva, Switzerland. https://www.ilo.org/sites/default/files/2024-12/Decent%20work%20NbS%202024_EN_0.pdf
- IOC-UNESCO (Intergovernmental Oceanographic Commission). 2021. *The United Nations Decade of Ocean Science for Sustainable Development (2021–2030): Implementation Plan*. IOC Ocean Decade Series, No. 20. Paris, UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000377082>
- IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services). 2018. *The IPBES assessment report on land degradation and restoration*. Bonn, Germany. <https://www.ipbes.net/assessment-reports/ldr>

- IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services). 2019. *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Version 1)*. <https://doi.org/10.5281/zenodo.3831673>
- IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services). 2024. *Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Bonn, Germany. <https://doi.org/10.5281/zenodo.11382215>
- IPCC (Intergovernmental Panel on Climate Change). 2019. *Climate Change and Land –Special Report*. Geneva, Switzerland. <https://www.ipcc.ch/srccl>
- Krenak, A. 2019. *Ideias para adiar o fim do mundo*. São Paulo, Brazil, Companhia das Letras.
- Lecerf, M., Herr, D., Elverum, C., Delrieu, E. and Picourt, L. 2023. *Coastal and marine ecosystems as Nature-based Solutions in new or updated Nationally Determined Contributions*. Ocean and Climate Platform, Conservation International, IUCN, Rare, The Nature Conservancy, Wetlands International and WWF. https://ocean-climate.org/wp-content/uploads/2023/10/NDC_Analysis_2023.pdf
- Li, B.V., Wu, S., Hua, F. and Mi, X. 2024. The past and future of ecosystem restoration in China. *Current Biology*, 34(9): R379–R387. <https://doi.org/10.1016/j.cub.2024.03.057>
- Mangrove Breakthrough. n.d. *Mangrove Breakthrough*. [Cited 26 September 2026]. <https://www.mangrovebreakthrough.com/about>
- Mariappan, M. and Rodríguez Zumbado, A. 2024. *Global Restoration Commitments and Pledges: 2024 Report – An Overview of Global Restoration Commitments: Gaps, Opportunities, and Pathways Forward*. Gland, Switzerland, IUCN. https://grih.info/wp-content/uploads/2024/11/Global-restoration-database-2.0-Final-19_11_2024.pdf
- McCracken, M. and Wolf, A.T. 2019. Updating the Register of International River Basins of the world. *International Journal of Water Resources Development*, 35(5): 732–782. <https://doi.org/10.1080/07900627.2019.1572497>
- McLain, R., Ranjatson, P., Lawry, S., Rakotonirina, J.M., Randrianasolo, R. and Razafimbelo, N.T. 2020. *Tenure challenges to implementing forest landscape restoration in northwestern Madagascar*. Bogor, Center for International Forestry Research (CIFOR). <https://www.landscapalliance.org/knowledge/publication/7492>
- Menéndez, P., Losada, I.J., Torres-Ortega, S., Narayan, S. and Beck, M.W. 2020. The Global Flood Protection Benefits of Mangroves. *Scientific Reports*, 10: 4404. <https://doi.org/10.1038/s41598-020-61136-6>
- MGI (Middle East Green Initiative). 2026. About the Initiative. In: *Middle East Green Initiative*. [Cited 29 September 2026]. <https://themgi.org/abouthttps://cgspace.cgjar.org/items/467d3e31-3fd7-46ef-8ac3-441e85d10b9b>
- Moreno-Mateos, D., Power, M.E., Comín, F.A. and Yockteng, R. 2012. Structural and Functional Loss in Restored Wetland Ecosystems. *PLOS Biology*, 10(1): e1001247. <https://doi.org/10.1371/journal.pbio.1001247>
- Mori, E., di Lorenzo, T., Viviano, A., Jakovljević, T., Marra, E., Moura, B.B., Garosi, C. et al. 2025. Under Pressure: Environmental Stressors in Urban Ecosystems and Their Ecological and Social Consequences on Biodiversity and Human Well-Being. *Stresses*, 5(4): 66. <https://doi.org/10.3390/stresses5040066>
- Nelson, C.R., Hallett, J.G., Romero Montoya, A.E., Andrade, A., Besacier, C., Boerger, V., Bouazza, K. et al. 2024. *Standards of practice to guide ecosystem restoration – A contribution to the United Nations Decade on Ecosystem Restoration 2021–2030*. Rome, FAO, Washington, D.C., SER and Gland, Switzerland, IUCN CEM. <https://doi.org/10.4060/cc9106en>
- NOAA (National Oceanic and Atmospheric Administration). 2026. World's Fourth Mass Coral Bleaching Event Likely Ended in 2025. In: *National Environmental Satellite, Data, and Information Service*. [Cited 29 September 2026]. <https://www.nesdis.noaa.gov/news/worlds-fourth-mass-coral-bleaching-event-likely-ended-2025>
- Ntshotsho, P., Reyers, B. and Esler, K.J. 2011. Assessing the Evidence Base for Restoration in South Africa. *Restoration Ecology*, 19(5): 578–586. <https://doi.org/10.1111/j.1526-100X.2010.00753.x>
- Obura, D.O., Katerere, Y., Mayet, M., Kaelo, D., Msweli, S., Mather, K., Harris, J. et al. 2021. Integrate biodiversity targets from local to global levels. *Science*, 373(6556): 746–748. <https://doi.org/10.1126/science.abh2234>
- Orr, B.J., Cowie, A.L., Castillo Sanchez, V.M., Chasek, P., Crossman, N.D., Erlewein, A., Louwagie, G. et al. 2017. *Scientific conceptual framework for Land Degradation Neutrality. A report of the Science-Policy Interface*. Bonn, Germany, UNCCD. https://www.unccd.int/sites/default/files/2018-09/LDN_CF_report_web-english.pdf
- Perricone, V., Motalipassi, M., Mele, A., Buono, M., Vicinanza, D. and Contestabile, P. 2023. Nature-based and bioinspired solutions for coastal protection: an overview among key ecosystems and a promising pathway for new functional and sustainable designs. *ICES Journal of Marine Science*, 80(5): 1218–1239. <https://doi.org/10.1093/icesjms/fsad080>
- Reid, A.J., Carlson, A.K., Creed, I.F., Eliason, E.J., Gell, P.A., Johnson, P.T.J., Kidd, K.A. et al. 2019. Emerging threats and persistent conservation challenges for freshwater biodiversity. *Biological Reviews*, 94(3): 849–873. <https://doi.org/10.1111/brev.12480>

- Senegal. 2020. *Contribution déterminée au niveau national du Sénégal*. Nationally Determined Contribution submitted to the UNFCCC, 29 December 2020. Dakar, Ministère de l'Environnement et du Développement Durable. <https://unfccc.int/documents/497877>
- Sewell, A., van der Esch, S. and Löwenhardt, H. 2020. *Goals and commitments for the restoration decade: A global overview of countries' restoration commitments under the Rio Conventions and other pledges*. Policy Brief. The Hague, Kingdom of the Netherlands, PBL Netherlands Environmental Assessment Agency. <https://www.pbl.nl/uploads/default/downloads/pbl-2020-goals-and-commitments-for-the-restoration-decade-3906.pdf>
- Simonson, W.D., Miller, E., Jones, A., Garcia-Rangel, S., Thornton, H. and McOwen, C. 2021. Enhancing climate change resilience of ecological restoration – A framework for action. *Perspectives in Ecology and Conservation*, 19(3): 300–310. <https://doi.org/10.1016/j.pecon.2021.05.002>
- Simpson, N.P., Mach, K.J., Constable, A., Hess, J., Hogarth, R., Howden, M., Lawrence, J. et al. 2021. A framework for complex climate change risk assessment. *One Earth*, 4(4): 489–501. <https://doi.org/10.1016/j.oneear.2021.03.005>
- Spady, B.L., Skirving, W.J., De La Cour, J.L., Geiger, E.F., Liu, G., Hoegh-Guldberg, O., Norrie, A. et al. 2026. The 4th global coral bleaching event: ushering in an era of near-annual bleaching. *Coral Reefs*. <https://doi.org/10.1007/s00338-025-02810-x>
- Steel, E.A., Obiang Ndong, G., Adelola, T., Aggestam, F., Akwany, L., Bezerra, M., Casallas Ramirez, S. et al. 2025. *Enabling consistent reporting and monitoring for freshwater (inland waters) restoration under Target 2 of the Kunming-Montreal Global Biodiversity Framework*. Rome, FAO. <https://doi.org/10.4060/cd5046en>
- Strassburg, B.B.N., Iribarrem, A., Beyer, H.L., Cordeiro, C.L., Crouzeilles, R., Jakovac, C.C., Braga Junqueira, A. et al. 2020. Global priority areas for ecosystem restoration. *Nature*, 586: 724–729. <https://doi.org/10.1038/s41586-020-2784-9>
- Tenure Facility. 2023. *Blossoms of hope in turbulent times – Annual Report 2023*. Stockholm. <https://view.publitas.com/the-tenure-facility/annual-report-2023-tenure-facility-7e471z9pbjb8/page/1>
- TFFF (Tropical Forest Forever Facility) Steering Committee. 2025. *An innovative financing mechanism to incentivize long-term forest conservation at scale*. Concept Note 3.1. Brasília, Government of Brazil. <https://tfff.earth/concept-note>
- Tickner, D., Opperman, J.J., Abell, R., Acreman, M., Arthington, A.H., Bunn, S.E., Cooke, S.J. et al. 2020. Bending the Curve of Global Freshwater Biodiversity Loss: An Emergency Recovery Plan. *BioScience*, 70(4): 330–342. <https://doi.org/10.1093/biosci/biaa002>
- UNCCD (United Nations Convention to Combat Desertification). n.d. Land Degradation Neutrality. In: UNCCD. [Cited 16 June 2026]. <https://www.unccd.int/land-and-life/land-degradation-neutrality/overview>
- UNCCD. 2019. UNCCD Data Dashboard: Sustainable Development Goal (SDG) Indicator 15.3.1. [Accessed on 27 March 2026]. <https://data.unccd.int/land-degradation?grouping=SDG>
- UNCCD. 2022. *Global Land Outlook: Land Restoration for Recovery and Resilience*. Second edition. Bonn, Germany. <https://digitallibrary.un.org/record/3972338>
- UNEP. 2021a. *Becoming #GenerationRestoration: Ecosystem restoration for people, nature and climate*. Nairobi. <https://wedocs.unep.org/rest/api/core/bitstreams/46a4fa7c-9e80-4ac8-a8dc-9eec85095bf9/content>
- UNEP. 2021b. *From Pollution to Solution: A global assessment of marine litter and plastic pollution*. Nairobi. <https://wedocs.unep.org/handle/20.500.11822/36963>
- UNEP. 2021c. *Launching #GenerationRestoration: World Environment Day 2021 and Start of the UN Decade on Ecosystem Restoration*. Nairobi. <https://wedocs.unep.org/rest/api/core/bitstreams/d03fca67-3d3c-4e96-ace9-51538da2893c/content>
- UNEP. 2022. *Global Peatlands Assessment – The State of the World's Peatlands: Evidence for Action toward the Conservation, Restoration, and Sustainable Management of Peatlands*. Nairobi. <https://doi.org/10.59117/20.500.11822/41222>
- UNEP. 2024a. *Bend the trend – Pathways to a liveable planet as resource use spikes*. Global Resources Outlook 2024. Nairobi. <https://www.unep.org/resources/Global-Resource-Outlook-2024>
- UNEP. 2024b. *Growing the Green – How and why restoration finance needs to quadruple by 2030*. State of Finance for Nature - Restoration Finance Report. Nairobi. <https://doi.org/10.59117/20.500.11822/46730>
- UNEP. 2024c. *From Grey to Green: Better Data to Finance Nature in Cities*. State of Finance for Nature in Cities 2024. Nairobi <https://wedocs.unep.org/20.500.11822/46453>
- UNEP. 2025. *Unlock. Unleash. Realizing forest potential requires tripling investments in forests by 2030*. State of Finance for Forests 2025. Nairobi. <https://wedocs.unep.org/20.500.11822/48718>
- UNEP. 2026. *Nature in the Red - Powering the Trillion Dollar Nature Transition Economy*. State of Finance for Nature 2026. Nairobi. <https://doi.org/10.59117/20.500.11822/49119>

- UNEP and FAO. 2020. *The United Nations Decade on Ecosystem Restoration – Strategy*. Nairobi and Rome, United Nations Environment Programme and Food and Agriculture Organization of the United Nations. <https://wedocs.unep.org/handle/20.500.11822/31813>
- UNFCCC (United Nations Framework Convention on Climate Change). 2024. *Gender-responsive finance for climate action and resilience*. Bonn, Germany. <https://unfccc.int/news/gender-responsive-finance-for-climate-action-and-resilience>
- UNFCCC. 2025. *Nationally determined contributions under the Paris Agreement: Synthesis report by the secretariat*. Bonn, Germany. <https://unfccc.int/documents/650664>
- United Nations. 2020. *Action Track 3: Boost nature-positive food production at scale*. Ideas Paper – Draft. New York, USA. https://www.un.org/sites/un2.un.org/files/2021/04/unfss_at3_synthesis_propositions_round1.pdf
- UN Human Rights Council. 2023. *Green Financing – A Just Transition to Protect the Rights of Indigenous Peoples*. A/HRC/54/31. Geneva, Switzerland. <https://docs.un.org/en/A/HRC/54/31>
- UN Women. n.d. *Gender-responsive climate action in East and Southern Africa*. In: *UN Women Africa*. [Cited 05 June 2026]. https://africa.unwomen.org/en/what-we-do/economic-empowerment_africa/gender-responsive-climate-action-in-east-and-southern-africa
- UN Women and OHCHR (Office of the United Nations High Commissioner for Human Rights). 2020. *Realizing women's rights to land and other productive resources*. Second edition. New York, USA and Geneva, Switzerland. <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2020/Realizing-womens-rights-to-land-and-other-productive-resources-2nd-edition-en.pdf>
- Verdone, M. and Seidl, A. 2017. Time, space, place, and the Bonn Challenge global forest restoration target. *Restoration Ecology*, 25(6): 903–911. <https://doi.org/10.1111/rec.12512>
- Verhoeven, D., Berkhout, E., Sewell, A. and van der Esch, S. 2024. The global cost of international commitments on land restoration. *Land Degradation and Development*, 35(16): 4864–4874. <https://doi.org/10.1002/ldr.5263>
- WMO (World Meteorological Organization). 2024. *El Niño/La Niña Update (February 2024)*. El Niño/La Niña Updates. Geneva, Switzerland. <https://wmo.int/resources/publication-series/el-ninola-nina-updates/el-ninola-nina-update-february-2024>
- Wollenberg, E., Dittmer, K.M., Shelton, S., Tennigkeit, T., Costa Jr., C., Bernoux, M. and Agostini, A. 2025. *Agrifood systems in the voluntary carbon market: status and prospects*. Directions in Investment, No. 14. Rome, FAO. <https://doi.org/10.4060/cd5192en>
- World Bank. 2024. *Blueprints for Private Investment in Ecosystem Restoration: Lessons from Case Studies*. In: *World Bank*. [Cited 05 June 2026]. <http://documents.worldbank.org/curated/en/099031424202517999>
- WEF (World Economic Forum). 2024. *100 Million Farmers: Breakthrough Models for Financing a Sustainability Transition*. Geneva, Switzerland. <https://www.weforum.org/publications/100-million-farmers-breakthrough-models-for-financing-a-sustainability-transition>
- WWN (World Wetland Network). 2025. *State of the World's Wetlands: 2024 Participatory Survey*. https://worldwetland.network/wp-content/uploads/2025/06/En_WorldWetlandsSurvey_2025_web.pdf
- WWF (World Wide Fund for Nature). 2024. *Living Planet Report 2024 – A System in Peril*. Gland, Switzerland. <https://www.wwf.org.uk/sites/default/files/2024-10/living-planet-report-2024.pdf>
- zu Ermgassen, S. and Löfqvist, S. 2024. Financing ecosystem restoration. *Current Biology*, 34(9): R412–R417. <https://doi.org/10.1016/j.cub.2024.02.031>

RESTORATION PROGRESS REPORT

Nature's comeback

Scaling ecosystem
restoration for
people and planet



ISBN 978-92-5-141087-5



9 789251 410875

CE2114EN/1/10.26