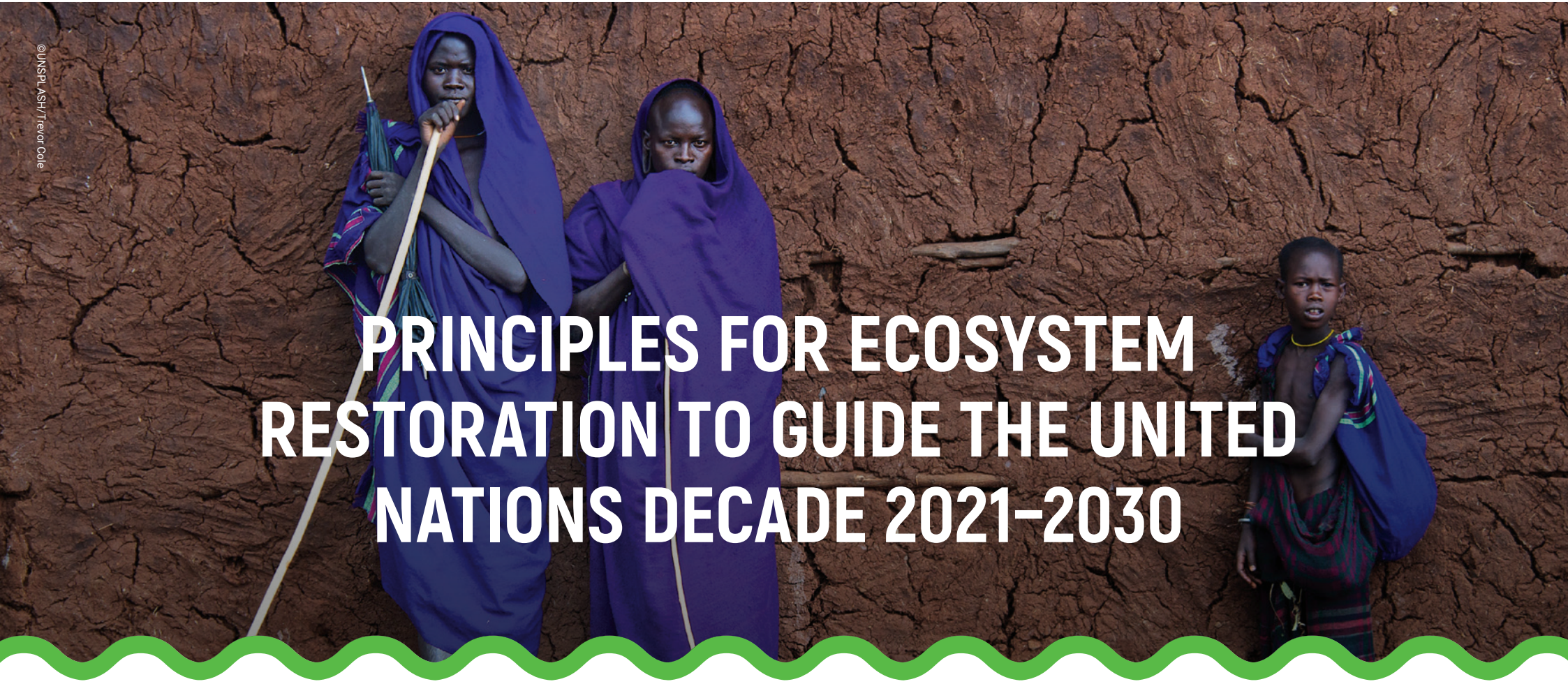
UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

UN environment programme

Food and Agriculture Organization of the United Nations

IUCN CEM

SER SOCIETY FOR ECOLOGICAL RESTORATION



PRINCIPLES FOR ECOSYSTEM RESTORATION TO GUIDE THE UNITED NATIONS DECADE 2021–2030

Aware of the critical need to halt, prevent and reverse ecosystem degradation, and to effectively restore degraded terrestrial, freshwater and marine ecosystems across the globe, through Resolution 73/284, the United Nations General Assembly declared 2021–2030 as the United Nations Decade on Ecosystem Restoration (hereafter the "UN Decade"). To support the implementation of the UN Decade and help achieve its goals, there is a need for a shared vision of ecosystem restoration, defined as *"the process of halting and reversing degradation, resulting in improved ecosystem services and recovered biodiversity. Ecosystem restoration encompasses a wide continuum of practices, depending on local conditions and societal choice"* (UNEP, 2021, p. 7).[1]

A key step in creating a shared vision of ecosystem restoration is to adopt principles that underpin the full set of ecosystem restoration activities in support of the UN Decade Strategy.[2] Although principles for specific types of restorative activities – such as ecological restoration[3] and forest and landscape restoration[4,5] already have been published, there is a need for principles to underpin all of the restorative activities that are part of the continuum of ecosystem restoration defined by the UN Decade, and which are applicable across all sectors, biomes and regions.

Towards this end, UN Decade partners engaged in a multi-stage process to develop principles for ecosystem restoration (see Annex for detailed methods). The process began with a synthesis of published principles for distinct types of restorative activities. The synthesis was then used during an expert consultation process, to identify priority themes and to inform an initial, draft set of principles. These were widely shared through an online global consultation process; feedback from the consultation informed the development of the final principles presented here. The principles are broadly based on the Ecosystem Approach[6] and the Short-Term Action Plan for Ecosystem Restoration (STAPER),[7] both adopted by the Parties to the Convention on Biological Diversity (CBD), as well as the International Union for Conservation of Nature (IUCN)'s Principles for Nature-Based Solutions,[8,9] Principles for Ecosystem-Based Approaches,[10,11,12] Principles for a Landscape Approach,[13] Principles for Forest and Landscape Restoration,[4,5] the Society for Ecological Restoration (SER)'s International Principles and Standards for the Practice of Ecological Restoration,[3] the IUCN Commission on Ecosystem Management (CEM)´s Rewilding Principles,[14] and FAO´s Principles and Approaches for Sustainable Food and Agriculture,[15] Agroecology,[16] Sustainable Land Management[17] and the Ecosystem Approach to Fisheries.[18]

The ten principles for ecosystem restoration include a first principle that orients restoration in the context of the UN Decade, followed by nine best-practice principles. These best-practice principles detail the essential tenets of ecosystem restoration that should be followed to maximize net gain for native biodiversity, ecosystem health and integrity, and human health and well-being, across all biomes, sectors and regions. The principles are complementary and should, therefore, be read and considered altogether. Regardless of the type of land ownership and the types of stakeholders engaged, these principles can improve restoration outcomes for all types of projects, programmes and initiatives.

As an overarching guideline, it is important to note that while ecosystem restoration and other nature-based solutions are essential for, *inter alia*, climate-change mitigation, biodiversity protection and land-degradation neutrality, restoration is not a substitute solution for conservation, nor for a rapid and deep decarbonization of the world's economy. As such, investments in restoration in the context of climate action must be based on sound science-based targets and a clear pathway towards net zero emissions. Ecosystem restoration and the sound stewardship of nature can only be successful, in the long term, in the context of a wider socio-economic transition towards a nature-positive economy, by decoupling economic growth from unsustainable use of natural resources, and detoxifying and decarbonizing economic activity.

TEN PRINCIPLES THAT UNDERPIN ECOSYSTEM RESTORATION

GLOBAL CONTRIBUTION

BROAD ENGAGEMENT

MANY TYPES OF ACTIVITIES

BENEFITS TO NATURE AND PEOPLE

ADDRESSES CAUSES OF DEGRADATION

KNOWLEDGE INTEGRATION

MEASURABLE GOALS

LOCAL AND LAND/ SEASCAPE CONTEXTS

MONITORING AND MANAGEMENT

POLICY INTEGRATION

GLOBAL CONTRIBUTION

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PRINCIPLE 1:

ECOSYSTEM RESTORATION CONTRIBUTES TO THE UN SUSTAINABLE DEVELOPMENT GOALS AND THE GOALS OF THE RIO CONVENTIONS

Restoration projects, programmes and initiatives at all spatial scales, from individual sites to large landscapes and seascapes, play an essential role in achieving ambitious global targets for sustaining life on Earth. Successful ecosystem restoration aims to contribute to the achievement of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), which seek to end poverty, conserve biodiversity, combat climate change and improve livelihoods for everyone, everywhere. The SDGs are unlikely to be met unless ecosystem degradation is stopped and ecosystem restoration is undertaken at cumulative scales of hundreds of millions of hectares globally. Effective restoration simultaneously supports achievement of the biodiversity, climate and land-degradation neutrality goals of the Rio Conventions – CBD, United Nations Convention to Combat Desertification (UNCCD) and United Nations Framework Convention on Climate Change (UNFCCC) – and allied global initiatives. Preventing, halting and reversing ecosystem degradation, as a contribution to global targets, is a shared responsibility among all public and private sectors and stakeholders at local, national and international levels.

BROAD ENGAGEMENT

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PRINCIPLE 2:

ECOSYSTEM RESTORATION PROMOTES INCLUSIVE AND PARTICIPATORY GOVERNANCE, SOCIAL FAIRNESS AND EQUITY FROM THE START AND THROUGHOUT THE PROCESS AND OUTCOMES

All stakeholders, right-holders, and especially under-represented groups (e.g. local communities, Indigenous peoples, ethnic minorities, women, youth and LGBTIQ+ people[i]), should be equitably and inclusively provided with opportunities to be engaged and integrated in meaningful, free and active ways. Such inclusive participation is necessary for achieving the desired outcomes of restoration over the long term, and should be promoted as much as possible throughout the process, from planning to monitoring. This participation can be achieved by securing equal and regular access to information and knowledge; recognizing and addressing social asymmetries through empowerment and capacity development of under-represented groups; seeking free, prior and informed consent;[ii] providing effective incentives and improving livelihoods, food security and opportunities for local communities; promoting co-management and ensuring a key role for local communities in decision-making; recognizing rights, needs and concerns; fostering tenure security; pursuing fair and equitable distribution of benefits and responsibilities; and building dialogue, trust and mutual respect through inclusive and transparent governance with mechanisms for impartial conflict resolution.

i Lesbian, gay, bisexual, transgender, intersex and queer

ii For more information on free, prior and informed consent, see: **http://www.fao.org/indigenous-peoples/our-pillars/fpic/en/**

MANY TYPES OF ACTIVITIES

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PRINCIPLE 3

ECOSYSTEM RESTORATION INCLUDES A CONTINUUM OF RESTORATIVE ACTIVITIES

Ecosystem restoration encompasses a wide range of activities, employed singly or collectively, which aim to repair degraded ecosystems of all kinds. To be considered ecosystem restoration, however, the activity must result in net gain for biodiversity, ecosystem health and integrity, and human well-being, including sustainable production of goods and services. Ecosystem restoration can be implemented in all types of degraded ecosystems, landscapes and seascapes, including urban, production, cultural, semi-natural and natural systems. Major categories of restorative activities include: *(1)* reduction of negative environmental and societal impacts, such as pollution and unsustainable resource use and management; *(2)* removal of contaminants, pollutants and other threats, often known as remediation; *(3)* rehabilitation of ecosystem functions and services in highly modified areas such as former mining sites and degraded production systems; and *(4)* ecological restoration, which aims to remove degradation and assists in recovering an ecosystem to the trajectory it would be on if degradation had not occurred, accounting for environmental change.

BENEFITS TO NATURE AND PEOPLE

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PRINCIPLE 4:

ECOSYSTEM RESTORATION AIMS TO ACHIEVE THE HIGHEST LEVEL OF RECOVERY FOR BIODIVERSITY, ECOSYSTEM HEALTH AND INTEGRITY, AND HUMAN WELL-BEING

Ecosystem restoration aims to achieve and sustain the greatest net gain possible, given project- and programme-level goals, for biodiversity, ecosystem health and integrity, ecosystem goods and services, climate-change mitigation, and human health and well-being at local, national and global scales. It should enhance and not be a substitute for nature conservation, especially in areas with high ecological integrity and high value for ensuring ecological connectivity, as well as in other priority areas for conservation, including those within the territories of Indigenous peoples and traditional communities. Management practices intended to be restorative should support and assist natural recovery processes and not cause further degradation. The use of genetically appropriate germplasm of native species should be favoured, whereas non-native species potentially or already proven to be invasive should be avoided.

ADDRESSES CAUSES OF DEGRADATION

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PRINCIPLE 5

ECOSYSTEM RESTORATION ADDRESSES THE DIRECT AND INDIRECT CAUSES OF ECOSYSTEM DEGRADATION

All restorative activities should concurrently address the direct and indirect causes of ecosystem degradation and fragmentation, and the loss of biodiversity and ecosystem goods and services. If the causes are not addressed, restorative activities may fail over the long term. During the planning phase of restoration projects, programmes or initiatives, the degree and causes of degradation should be identified, and actions should be developed to reduce and mitigate their impacts at the appropriate scale. These actions should include eliminating incentives that directly or indirectly promote ecosystem degradation. Importantly, land uses and property regimes that promote ecosystem degradation and prevent the long-term permanence of restored ecosystems should be addressed. The adoption of sustainable practices that enhance biodiversity conservation (including in production systems), and contribute to the mitigation of and adaptation to climate change, should be promoted; along with measures that reduce the environmental impacts of urbanization, infrastructure development, extractive activities, and unsustainable production and consumption. The development and implementation of plans and policy instruments that aim to prevent, halt or reverse ecosystem degradation should incorporate ecological, cultural and socio-economic considerations, and be harmonized with other policies and actions that govern and shape land and resource use to avoid confusion and conflict.

KNOWLEDGE INTEGRATION

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PRINCIPLE 6

ECOSYSTEM RESTORATION INCORPORATES ALL TYPES OF KNOWLEDGE AND PROMOTES THEIR EXCHANGE AND INTEGRATION THROUGHOUT THE PROCESS

Ecosystem restoration should strive to integrate all types of knowledge – including, but not limited to, Indigenous, traditional, local and scientific ways of knowing – and practices in order to achieve greater kinship with nature, cooperation and effectiveness. Such integration will foster inclusive and consensual decision-making throughout the process, while enabling full participation of local stakeholders and right-holders. Likewise, capacity-development efforts should be focused on promoting mutual learning, as well as knowledge-sharing among stakeholders and communities of practice at local, national and global levels. In particular, knowledge about effective practices and innovative approaches should be systematically captured and shared to develop, adapt and replicate successful experiences, and to avoid repeating mistakes. This will also allow for the identification of knowledge gaps and strategic research and capacity-development priorities. The incorporation of Indigenous, local and traditional knowledge should comply with the principles of free, prior and informed consent. To facilitate the exchange of knowledge and information, platforms and networks for documenting, integrating and sharing that knowledge and information should be developed and made widely available through regularly updated, easily accessible, understandable and culturally appropriate communication and dissemination channels (taking into account languages and literacy levels).

MEASURABLE GOALS

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PRINCIPLE 7

ECOSYSTEM RESTORATION IS BASED ON WELL-DEFINED SHORT-, MEDIUM- AND LONG-TERM ECOLOGICAL, CULTURAL AND SOCIO-ECONOMIC OBJECTIVES AND GOALS

During the planning phase of restoration projects and programmes, realistic and achievable short-, medium- and long-term ecological, cultural and socio-economic objectives and goals should be established, based on a shared vision of desired outcomes. They should include targets and indicators that are measurable against the baseline condition, and that specify the direction (e.g. increase or decrease) and magnitude of change desired, and are time-bound, where appropriate. The inclusion of measurable objectives and goals will allow clear communication of expected results, set the basis for co-development of an implementation plan and enable monitoring, evaluation and adaptive management. Trade-offs among ecological, cultural, and socio-economic objectives and goals should be addressed and reconciled through fair and transparent negotiation, and in a manner that does not compromise ecosystem recovery.

LOCAL AND LAND/SEASCAPE CONTEXTS

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PRINCIPLE 8

ECOSYSTEM RESTORATION IS TAILORED TO THE LOCAL ECOLOGICAL, CULTURAL AND SOCIO-ECONOMIC CONTEXTS, WHILE CONSIDERING THE LARGER LANDSCAPE OR SEASCAPE

Although ecosystem restoration can be undertaken at any spatial scale, from areas of less than a hectare to large landscapes or seascapes, the ecological, cultural and socio-economic contexts, at both the local and larger landscape or seascape scale, should be taken into account throughout the process. Consideration of the local context facilitates alignment of project objectives and goals with local needs. Additionally, successful restoration depends on adequately addressing land- and seascape-level factors, including threats from the larger landscape or seascape, exchanges of energy and organisms across ecosystem boundaries, ecological and hydrological connectivity, and transboundary effects. The use of spatial planning processes will facilitate the tailoring of projects, programmes and initiatives to the larger landscape, seascape or ecoregion in order to maximize net gain for biodiversity, ecosystem health and integrity, and human well-being, including sustainable production of goods and services.

MONITORING AND MANAGEMENT

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PRINCIPLE 9

ECOSYSTEM RESTORATION INCLUDES MONITORING, EVALUATION AND ADAPTIVE MANAGEMENT THROUGHOUT AND BEYOND THE LIFETIME OF THE PROJECT OR PROGRAMME

The monitoring of biodiversity, ecosystem health and integrity, and human well-being responses to restoration should be undertaken to determine whether objectives and goals are being met. For monitoring to be effective, it should begin at the inception of the project, programme or initiative, to allow baseline measurements of relevant site- and landscape- or seascape-level indicators to be taken and the assessment of the direction and magnitude of change over time. Different methodological approaches (from statistically rigorous to less formal) can be valuable for understanding patterns and processes of change. The engagement of stakeholders in monitoring can promote social learning, capacity development and communication among stakeholder groups and communities of practice, at local, national and global scales. Because restoration is a long-term endeavour and, therefore, changing conditions are inevitable, adaptive management – the iterative process of monitoring, evaluating, reflecting and adapting activities and approaches as needed – allows identification of unanticipated (positive and negative) outcomes and improvement of future actions. Monitoring should continue beyond the lifetime of the project, programme or initiative to capture medium- and longer-term impacts.

POLICY INTEGRATION

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PRINCIPLE 10

ECOSYSTEM RESTORATION IS ENABLED BY POLICIES AND MEASURES THAT PROMOTE ITS LONG-TERM PROGRESS, FOSTERING REPLICATION AND SCALING-UP

Ensuring an enabling policy environment, including through intersectoral policy coordination, is important for achieving restoration objectives and goals over the long term. To this end, all relevant governance instruments (laws, regulations, policies, strategies and plans) should be mapped, adapted where appropriate, and integrated in the planning and implementation of projects, programmes and initiatives. In addition, maximizing long-term net gain from restorative activities requires: coordinating actions among institutions, sectors and stakeholders, through a well-functioning governance system; fostering local, national and international political commitment and transboundary agreements; providing capacity-development opportunities to empower the people, organizations, institutions and networks involved in restoration; mainstreaming effective practices to have broad influence and allow replication; identifying, mobilizing and maintaining adequate funding (from government, the private sector, international organizations, or other sources) to complete all phases of the process; developing income mechanisms (e.g. through sustainable production, ecotourism, payment for ecosystem services and other sustainable uses of natural resources) that do not compromise the integrity of the restoration process and support its financial viability; and protecting the security of stakeholders and right-holders, especially in areas of political conflict or conflict over natural resources. Likewise, promoting and replicating successful ecosystem restoration activities and approaches will facilitate and influence the design of laws, policies and measures – at local, national and global levels – to help prevent, halt and reverse ecosystem degradation.

ANNEX

BACKGROUND

To support the implementation of the UN Decade on Ecosystem Restoration, an FAO-led Best Practices Task Force was established to assist with shaping the UN Decade's knowledge component. The Task Force started the development of principles for ecosystem restoration to define criteria for qualifying good restoration practices and create a shared vision of ecosystem restoration. At the same time, the International Union for Conservation of Nature's Commission on Ecosystem Management (IUCN CEM) and the Society for Ecological Restoration (SER) were initiating a global consultation at the 3rd Global Forum on Ecological Restoration in order to develop principles for restorative activities. The Best Practices Task Force thus partnered with IUCN CEM and SER to jointly develop principles for the full set of restorative activities under the Decade's definition of ecosystem restoration.

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ANNEX

PROCESS AND METHODS

A group of members of the Best Practices Task Force identified published principles for restorative activities that: 1) represent the range of ecosystem restoration approaches; and 2) are applicable at the global scale (i.e. not limited to a single country or region) and across biomes and ecosystem types. The principles in all publications were clustered by topic to develop a set of headline principles. During the 3rd Global Forum on Ecological Restoration in 2021, two online workshops were held to receive feedback on the initial draft of the headline principles. After that, a small group of Forum participants from leading global organizations, including the Center for International Forestry Research (CIFOR), EcoHealth Network, and the World Wide Fund For Nature (WWF), together with FAO, IUCN CEM and SER as lead organizations, revised the principles according to the feedback received and developed brief descriptions of each. The principles and descriptions were then subjected to a second round of feedback from internal and external partners and subsequent revision. The resulting working principles were published in the UN Decade Launch Report: "*Becoming #GenerationRestoration: Ecosystem restoration for people, nature and climate*."

After the launch of the UN Decade, the draft principles for ecosystem restoration were subjected to an open global consultation published on the UN Decade website. The global consultation took place between 15 June and 19 July 2021. A total of 338 responses were received from 57 countries and 243 organizations including governments, non-governmental organizations, international organizations, networks, initiatives, research and academia, the private sector, Indigenous peoples organizations, community organizations, and faith-based organizations and other entities from the global restoration community. All comments were considered in the final revision process, and responses to each were tracked.

WRITING TEAM

LEAD AUTHORS

Cara R. Nelson, Professor, Department of Ecosystem and Conservation Sciences, University of Montana; and Lead, Ecosystem Restoration Thematic Group, IUCN CEM.
Andrea E. Romero, Junior Consultant, Forest and Landscape Restoration Mechanism, Forestry Division, FAO.
James G. Hallett, Chair, SER; Affiliate Professor, Department of Ecosystem and Conservation Sciences, University of Montana.
James Aronson, Restoration Ecologist and Co-founder, EcoHealth Network.
Emmanuelle Cohen-Shacham, Lead, Nature-based Solutions Thematic Group, IUCN CEM.
Anita Diederichsen, Global Lead, Forest Landscape Restoration, WWF.
Manuel R. Guariguata, Principal Scientist, CIFOR and World Agroforestry Centre.

CONTRIBUTING AUTHORS

Christophe Besacier, Forestry Officer, Forest and Landscape Restoration Mechanism, Forestry Division, FAO.
Vera Boerger, Senior Land and Water Officer, Land and Water Division, FAO.
Faustine Zoveda, Forestry Officer, Forest and Landscape Restoration Mechanism, Forestry Division, FAO.
Angela Andrade, Chair, IUCN CEM.
Liette Vasseur, Professor, Brock University; and Lead, Ecosystem Governance Thematic Group, IUCN CEM.
George Gann, International Policy Lead, SER.
Bethanie Walder, Executive Director, SER.
Tim Christophersen, Head, Nature for Climate Branch, Ecosystems Division, United Nations Environment Programme (UNEP).

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