



PUTTING PEOPLE at the Center of Ecosystem Restoration

Key Highlights

- A narrow focus on biophysical aspects of ecosystem restoration fails to acknowledge the centrality of people in restoration and risks inequitable and unjust restoration planning, implementation and outcomes.
- National Biodiversity Strategies and Action Plans and their implementation should integrate people-centered and rights-based approaches to ecosystem restoration to contribute to achieving Target 2 of the Kunming-Montreal Global Biodiversity Framework (KM-GBF) – ‘Restore 30% of Degraded Ecosystems’ – as well as Targets 1, 3, and most other targets.
- Putting people at the center of ecosystem restoration aligns with the goals of other global multilateral environmental agreements and relevant processes (e.g., the Sustainable Development Goals, the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification, AFR100, the Bonn Challenge, etc.), and lessons and tools from these processes can provide insights for effective integration of human dimensions in ecosystem restoration.
- Interdisciplinary and transdisciplinary collaborations that equitably include social and natural sciences and traditional knowledge can guide the implementation of Target 2 and other targets under the KM-GBF.
- Supporting the empowerment of IP & LCs contributes to equitable ecosystem restoration.
- Monitoring the outcomes of restoration should include critical measures from the human system, such as improved health, livelihoods, empowerment, food, nutrition and tenure security.

Background

Ecosystem restoration is a priority in the face of the biodiversity, climate and food security crises. With 75% of the land surface significantly altered, 66% of the oceans facing negative impacts and over 85% of wetlands lost, the very fabric of life and human resilience are at stake.¹ Over half a million (about 9% of the world’s estimated 5.9 million) terrestrial species have insufficient habitat for long-term survival, and are expected to go extinct unless their habitats are restored.² Land degradation is already negatively impacting the well-being of more than 3.2 billion people.³ In response, **Target 2 of the Kunming-Montreal Global Biodiversity Framework (KM-GBF) calls on Parties to “Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.”**⁴

Ecosystem restoration includes both biophysical and human dimensions and takes place in a social-ecological system.⁵ People depend on ecosystems for their livelihoods; countries depend on ecosystems for their economy; and Indigenous Peoples and local communities (IP & LCs) depend on ecosystems for their spiritual, cultural and overall wellbeing. Although the impacts of ecosystem degradation

1 IPBES, 2019

2 Ibid.

3 IPBES, 2018

4 [Target 2 \(cbd.int\)](#)

5 Tedesco et al., 2023

are felt across the globe, their intensity is uneven, and most acute for IP & LCs whose livelihoods are closely dependent on ecosystems.

In the context of ecosystem restoration, the term ‘human dimensions’ refers to how and why people restore (or degrade) ecosystems, what influences their decisions, and in turn, how people influence, or are affected by, ecosystem restoration (or loss). Necessarily broad, the term acknowledges that there are several elements situated in the human system that have direct impacts on the ecological system. These include, for example, drivers of ecosystem loss or gain, cultural and value systems, motivations that influence behavior towards the ecosystem, the historical, socio-cultural, institutional and political contexts, and underlying power dynamics shaping how ecosystems are managed (or mismanaged), and much more. In Australia, Benin and India, for instance, IP & LCs have conserved and restored sacred forests for generations due to their spiritual value.⁶ A recent framework recognizes five pillars of human dimensions, resting in the context, motivations, activities, influencing factors, and outcomes of restoration.⁷

Notwithstanding, to date, restoration research and practice have emphasized biophysical dimensions, such as technological practices, and species and site selection based on ecological characteristics, with much less attention paid to human dimensions.⁸ This reflects the profile of lead organizations, Ministries, agencies and experts involved in ecosystem restoration. Understanding the human dimensions that shape and are shaped by the restoration process is paramount to its success since all choices and decisions related to both ecosystem degradation and restoration are inextricably linked to people.

Challenges

A narrow focus on biophysical aspects of ecosystem restoration fails to acknowledge the centrality of people in restoration. Despite the rhetoric around multiple objectives for ecosystem restoration, priorities for recovering biodiversity or carbon/

biomass have dominated restoration agendas.⁹ In practice, other than job creation, due consideration to the many human dimensions that intersect at all stages of a restoration process remains limited.

Ambitious socio-political and economic goals are often absent or compromised because of short term thinking in restoration programs. Although restoration is a long term process, decision-makers tend to think in terms of quick fixes and short-term project and political cycles, leading to unrealistic expectations of ‘easy wins’ with limited consideration given to local human needs. As a result, restoration objectives, targets, and their monitoring tend to focus on easily quantifiable measures, such as numbers of trees planted or jobs created, rather than less tangible socio-political aspects. A review in Colombia, for example, found that social and political change was monitored in only 5% of restoration projects.¹⁰ Longer term thinking, synchronous with long-term restoration processes, requires broadening this approach to consider medium and long term human outcomes such as improved health and livelihoods, empowerment, food, nutrition and tenure security. Such outcomes need to be integrated in restoration monitoring plans, processes and systems.

Restoration can have negative impacts on people if not carried out in a just, respectful and contextually-appropriate manner. Many restoration processes take place in contexts with insecure or unclear tenure rights, and can lead to negative impacts on human rights. For example, restoration may take place on lands that are assumed to be free but on which IP & LCs depend.¹¹ Such cases may result in land dispossessions, thereby transgressing the needs and rights of IP & LCs, and causing significant negative long-term impacts on their livelihoods and ultimately, on the sustained conservation and restoration of ecosystems.¹²

Context matters in ecosystem restoration and there can be no one size fits all. The restoration of ecosystems takes place in diverse social, economic, institutional, historical, political and cultural settings.¹³ Frequently, restoration initiatives overlook human diversity, historical context, and longstanding

6 Verschuuren et al., 2010

7 Mansourian et al., 2024

8 Elias et al., 2022

9 Erbaugh and Oldekop, 2018

10 Murcia et al., 2016

11 Rakotonarivo et al., 2023

12 Fleischman et al., 2022

13 Fleischman et al., 2022 ; Mansourian et al., 2024

social injustices.¹⁴ Yet accounting for the human context within which ecosystem restoration takes place is critical to the local relevance, acceptability, and sustainability of restoration initiatives. This complex diversity is poorly addressed in step-by-step prescriptive restoration guidelines that are devoid of context.

Opportunities

Successful integration of human dimensions in ecosystem restoration will support the achievement of several KM-GBF targets, and of the Framework as a whole. The introductory section of the KM-GBF stipulates that the “implementation of the Framework should follow a human-rights based approach”.¹⁵ The same section recognizes the “important roles and contributions of indigenous peoples and local communities as custodians of biodiversity and partners in the conservation, restoration and sustainable use”, and that “the Framework’s implementation must ensure that the rights, knowledge, including traditional knowledge associated with biodiversity, innovations, worldviews, values and practices of indigenous peoples and local communities are respected, and documented and preserved”. Moreover, the KM-GBF recognizes and considers the diverse value systems that mediate human relations with nature as an integral part of its implementation.

Concerns for gender equality, cultural values, and equitable rights to resources are reflected in Targets 22 and 23, and in the Gender Plan of Action (2022-2030)¹⁶ that accompanies the Framework. Addressing tenure insecurity, including women’s land rights, in a restoration effort contributes, among others, to Targets 2, 3 and 23. Similarly, the full, meaningful and effective participation of women in the development of restoration plans and throughout the restoration process is in line with Target 23, which recognizes women’s equal rights to participation and leadership “at all levels of action, engagement, policy and decision-making related to biodiversity.”¹⁷ **Specific provisions in National**

Biodiversity Strategies and Action Plans (NBSAPs) should be included to ensure that these human dimensions, which are transversal to the Framework, are addressed in relevant actions toward Target 2 at national and local levels, to contribute to achieving not only the restoration target, but also Targets 1, 3, 5, 9 and 21-23, among others.

Human dimensions must be considered at all stages of a restoration process – from assessing to planning, implementing, analyzing, adapting, through to learning.¹⁸ Understanding the central role of people in restoration across the restoration process helps to identify strategies to collaborate with key stakeholders and rightsholders at every stage to find solutions that yield benefits for people and the ecosystem (recognizing that the two are intertwined). For example, tree ownership framed in Ghana’s 2012 Forest and Wildlife Policy provides a strong incentive for farmers to grow trees on their cropland.¹⁹ Likewise, native seed collector networks in Brazil that structure communities around a profit-making enterprise established to supply seeds to restoration projects have yielded positive impacts both for people and the environment.²⁰

The implementation of Target 2 can benefit from lessons from work in other areas, such as on protected areas, which has increasingly acknowledged the importance of participation, inclusion, equity and diversity. Whereas Target 2 falls short of specifying the importance of human dimensions of restoration, Target 3, “Conserve 30% of Land, Water and Seas”, highlights the need to respect the rights of indigenous peoples and local communities, recognize Indigenous and traditional territories, and govern such areas in an equitable manner.²¹ Targets 1, 5, 9, 21, 22, and 23 also explicitly mention human rights and can guide the way for developing language that ensures a human-, justice- and equity-centered approach to ecosystem restoration.

Addressing the human dimension in ecosystem restoration will also contribute to achieving the goals of other multilateral environmental agreements and global processes (United Nations Framework Convention on Climate Change [UNFCCC], United

¹⁴ Elias et al., 2021; 2022

¹⁵ [Introduction \(cbd.int\)](#)

¹⁶ [CBD/COP/15/L.24](#)

¹⁷ [Target 23 \(cbd.int\)](#)

¹⁸ Mansourian et al., 2024

¹⁹ Baruah, 2017 ; Tease et al., 2023

²⁰ Padovezi et al., 2024

²¹ [Target 3 \(cbd.int\)](#)

Nations Convention to Combat Desertification [UNCCD], AFR100, the Bonn Challenge, etc.). The principles of ecosystem restoration outlined under the UN Decade on Ecosystem Restoration clearly identify the importance of human dimensions, such as the promotion of “inclusive and participatory governance, social fairness and equity from the start and throughout the process and outcomes” (Principle 2), and the incorporation of “all types of knowledge and [promotion of] their exchange and integration throughout the process” (Principle 6).²² Strengthening human dimensions in Target 2 will contribute to improving restoration initiatives under these other processes.

Enablers of ecosystem restoration are situated in the human system. Enablers contribute to facilitating restoration implementation and include supportive policies and incentives, such as those that pay farmers for setting land aside for restoration or improving the institutional environment as highlighted by the CBD’s Short Term Action Plan for Ecosystem Restoration (STAPER).²³ They also include multistakeholder dialogues that bring stakeholders to the table to discuss and agree on restoration priorities and objectives, and promote collaboration throughout the restoration process. Trusted local facilitators or brokers in restoration initiatives can act as enablers, as can locally-driven innovations and solutions, grounded in traditional knowledge. The revision of NBSAPs presents an opportunity to include these enablers in restoration planning and action, to support the implementation of Target 2 of the KM-GBF and all other relevant targets.

Many social sciences, and their sub-disciplines – such as environmental economics, behavioral psychology or environmental anthropology – **can contribute fundamental insights for addressing human dimensions in the implementation of Target 2.** For example, understanding stakeholders’ motivations for degrading or restoring ecosystems through the lens of behavioral psychology contributes to the design of effective and targeted restoration strategies.²⁴ **Moreover, several social science tools developed under a range of disciplines, such as rural development or agriculture, are directly relevant to**

the incorporation of human dimensions in restoration. For example, many bilateral donors and UN agencies have developed tools that support conflict resolution (e.g., SDC’s ‘Conflict analysis tool’²⁵ or UNDG’s tool for ‘Conducting a conflict and development analysis’²⁶), which can also be valuable in the implementation and negotiation of multiple, and sometimes competing, objectives for ecosystem restoration.²⁷

Interdisciplinary collaboration and the integration of diverse knowledge systems as part of a whole of society approach improves the knowledge base for restoration. Ecosystem restoration can greatly benefit from multiple skillsets, experiences and types of knowledge, which reflect the diversity of people involved and of issues to address throughout the duration of a restoration process.²⁸ Specifically, recognizing traditional knowledge, innovations, practices and technologies of Indigenous Peoples and local communities, accessed only with their free, prior and informed consent (Target 21²⁹), can improve restoration action and its local acceptability. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has raised the importance of such pluralistic approaches³⁰ that can be included in the development and implementation of NBSAPs so that achievement of multiple targets, including Target 2, can be locally-grounded.

Supporting the empowerment of women and IP & LCs contributes to equitable ecosystem restoration. A rights-based approach to ecosystem restoration requires the full and effective engagement of those whose livelihoods depend directly on the ecosystem to be restored, in particular IP & LCs. They should be involved in defining restoration objectives and implementing restoration, and should benefit equitably from the outcomes.³¹ For example, supporting the empowerment of rightsholders through the recognition of customary tenure or of locally-defined institutions provides an avenue for better long-term ecosystem management as well as ecosystem restoration.³² The Gender Plan of Action

22 FAO et al., 2021

23 CBD/COP/DEC/XIII/5

24 Mansourian, 2021

25 SDC, 2005

26 UNDG, 2016

27 Mansourian et al., 2024

28 Pascual et al., 2021

29 Target 21 (cbd.int)

30 Pascual et al., 2017

31 Reyes-Garcia et al., 2022

32 Barr & Sayer, 2012

(2022–2030)³³ provides indicative actions to ensure that this is done with due consideration to gender equality. Recognizing the roles of diverse community members allows for locally-adapted restoration, in line with Decision 15/3³⁴, which promotes the organization of “international dialogues with indigenous peoples and local communities and relevant stakeholders, including women and youth, on progress in the implementation of the Framework and the Gender Plan of Action (2023–2030).”

Integrating human dimensions in the monitoring of ecosystem restoration can prompt further action towards a people-centered ecosystem restoration practice. The participatory development of restoration objectives and plans, notably through

33 CBD/COP/15/L.24

34 CBD/COP/15/L.24

a whole of society approach, provides an opportunity to ensure that human dimensions are recognized and integrated in NBSAPs and corresponding restoration monitoring systems. Indicators disaggregated by sex and other demographic factors (e.g., age, ethnicity) can support the implementation of the KM-GBF and of relevant gender-responsive accountability and grievance mechanisms. The importance of restoration to human development can be seen in its contribution to most Sustainable Development Goals (SDGs),³⁵ and relevant SDG indicators can be used to monitor the impacts of restoration on people. Biocultural approaches to restoration also provide an opportunity to develop locally relevant indicators that reflect the priorities of IP & LCs.³⁶

35 Mansourian, 2018

36 Sterling et al., 2017

Recommendations

- **Adopt people-centered approaches that recognize the centrality of human dimensions and enable socially just, sustained and effective ecosystem restoration.** Ecosystem assessments should tap into the social sciences and incorporate the various historical, cultural, institutional and social dimensions that shape an ecosystem and directly impact on its restoration.
- **Include human rights, justice, and equality as integral principles in ecosystem restoration (Target 2) and throughout the NBSAPs.** The meaningful and effective participation of women, Indigenous Peoples and local communities is necessary in the development of NBSAPs and in planning and implementing activities under Target 2.
- **Establish interdisciplinary and transdisciplinary teams that bring together many social sciences (as well as natural sciences) and traditional knowledge systems to support the operationalization of ecosystem restoration.** In such pluralistic approaches, complementary disciplines and knowledge systems reflect the diversity of people involved in, and affected by, restoration and can significantly advance implementation of biodiversity conservation and ecosystem restoration.³⁷
- **Learn from other processes that better integrate human dimensions, and apply and adapt relevant tools from other areas.** Incorporating human dimensions in Target 2 can benefit from existing tools and experiences in related areas, such as protected area management (Target 3), and can also contribute to improving implementation of associated processes, such as initiatives to achieve the SDGs.
- **Monitor the outcomes of restoration paying special attention to impacts on the human system, such as improved health, livelihoods, empowerment, food, nutrition and tenure security.** Monitoring these outcomes in the context of Target 2 is also relevant for assessing progress towards other KM-GBF targets, including Target 3.

37 Reyes-Garcia et al., 2022

Bibliography

- Barr CM; Sayer JA. (2012). The political economy of reforestation and forest restoration in Asia-Pacific: Critical issues for REDD+. *Biological conservation*, 154, pp. 9-19. <https://doi.org/10.1016/j.biocon.2012.03.020>
- Baruah M. (2017). Facipulation and elite formation: Community resource management in Southwestern Ghana. *Conservation and Society*, 15(4), pp. 371-383. <https://bit.ly/3zZJaMS>
- Elias M; Joshi D; Meinzen-Dick R. (2021). Restoration for whom, by whom? A feminist political ecology of restoration. *Ecological Restoration*, 39(1-2), pp. 3-15. <https://hdl.handle.net/10568/114144>
- Elias M; Kandel M; Mansourian S; Meinzen-Dick R; Crossland M; Joshi D; Kariuki J; Lee LC; McElwee P; Sen A; Sigman E. (2022). Ten people-centered rules for socially sustainable ecosystem restoration. *Restoration Ecology*, 30(4), p.e13574. <https://doi.org/10.1111/rec.13574>
- Erbaugh JT; Oldekop JA. (2018). Forest landscape restoration for livelihoods and well-being. *Current Opinion in Environmental Sustainability*, 32, pp. 76-83. <https://bit.ly/3Y1vQ2g>
- FAO (Food and Agriculture Organization of the United Nations); IUCN (International Union for Conservation of Nature) Commission on Ecosystem Management; SER (Society for Ecological Restoration). (2021). *Principles for ecosystem restoration to guide the United Nations Decade 2021-2030*. Rome, FAO. <https://bit.ly/3NtRuaB>
- Fleischman F; Coleman E; Fischer H; Kashwan P; Pfeifer M; Ramprasad V; Rodríguez Solórzano C; Veldman, JW. (2022). Restoration prioritization must be informed by marginalized people. *Nature*, 607(7918), pp. E5-E6. <https://bit.ly/4h6f3E6>
- IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services). (2018). *The IPBES assessment report on land degradation and restoration*. Montanarella L; Scholes R; Brainich A. (eds). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn, Germany. 744 pages. <https://bit.ly/4f5WrCp>
- 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*. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn (Germany). 1148 p. <https://doi.org/10.5281/zenodo.3831673>
- Mansourian S. (2018). In the eye of the beholder: Reconciling Interpretations of Forest Landscape Restoration. *Land Degradation and Development* 29(9), pp. 2888-2898. <https://bit.ly/3A1wBD>
- Mansourian S. (2021). Disciplines, sectors, motivations and power relations in Forest Landscape Restoration. *Ecological Restoration* 39 (1&2): pp. 16-26. <https://hdl.handle.net/10568/115495>
- Mansourian S; Derkyi M; Djenontin I; Elias M; Oldekop J; Pacheco P; Burns J; Diederichsen A; Kleine M; Vallauri D; Walder B (2024). Human Dimensions of Forest Landscape Restoration. Vienna: IUFRO, 76 pages. <https://hdl.handle.net/10568/141866>
- Murcia C; Guariguata MR; Andrade Á; Andrade G; Aronson J; Escobar EM; Etter A; Moreno FH; Ramírez W; Montes E. (2016). Challenges and prospects for scaling-up ecological restoration to meet international commitments: Colombia as a case study. *Conservation Letters*, 9(3), pp. 213-220. <https://hdl.handle.net/10568/94862>
- Padovezi A; Adams C; Chazdon RL; Mendonça MA; Secco L; Campos-Filho EM; Sampaio A; Damasceno E; Albuquerque N; Santarem F; Camargo ME. (2024). Native seed collector networks in Brazil: Sowing social innovations for transformative change. *People and Nature*. <https://doi.org/10.1002/pan3.10692>
- Pascual U; Balvanera P; Díaz S; Pataki G; Roth E; Stenseke M; Watson RT; Dessane EB; Islar M; Kelemen E; Maris V. (2017). Valuing nature's contributions to people: the IPBES approach. *Current opinion in environmental sustainability*, 26, pp.7-16. <https://bit.ly/3YsUJFR>
- Pascual U; Adams WM; Díaz S; Lele S; Mace GM; Turnhout E. (2021). Biodiversity and the challenge of pluralism. *Nature Sustainability*, 4(7), pp.567-572. <https://bit.ly/3Yv9nLB>
- Rakotonarivo OS; Rakotoarisoa M; Rajaonarivelo HM; Raharijaona S; Jones JP; Hockley N. (2023). Resolving land tenure security is essential to deliver forest restoration. *Communications Earth & Environment*, 4(1), p.179. <https://bit.ly/3UAWuOX>
- Reyes-García V; Fernández-Llamazares Á; Aumeeruddy-Thomas Y; Benyei P; Bussmann RW; Diamond SK; García-Del-Amo D; Guadilla-Sáez S; Hanazaki N; Kosoy N; Lavides M. (2022). Recognizing Indigenous peoples' and local communities' rights and agency in the post-2020 Biodiversity Agenda. *Ambio*, 51(1), pp.84-92. <https://bit.ly/3U91VUX>
- SDC (Swiss Agency for Development and Cooperation). (2005). *Conflict Analysis Tools*. Bern, SDC. <https://bit.ly/3Yjv0TN>

Sterling EJ; Filardi C; Toomey A; Sigouin A; Betley E; Gazit N; Newell J; Albert S; Alvira D; Bergamini N; Blair M. (2017). Biocultural approaches to well-being and sustainability indicators across scales. *Nature ecology & evolution*, 1(12), pp.1798-1806. <https://bit.ly/4e038sU>

Tease F; Johnson Gaither C; Yembilah R; Tsiboe-Darko A; Mensah P; Adams B. (2023). "When Will the Tree Grow for Me to Benefit from It?": Tree Tenure Reform to Counter Mining in Southwestern Ghana. *Society & Natural Resources*, 36(3), pp.269-287. <https://doi.org/10.1080/08941920.2022.2161028>

Tedesco AM; López-Cubillos S; Chazdon R; Rhodes JR; Archibald CL; Pérez-Hämmerle KV; Brancalión PH; Wilson KA; Oliveira M; Correa DF; Ota L. (2023). Beyond ecology: ecosystem restoration as a process for social-ecological transformation. *Trends in Ecology & Evolution*, 38(7), pp.643-653. <https://doi.org/10.1016/j.tree.2023.02.007>

UNDG (United Nations Development Group). (2016). Conducting a conflict and development analysis. New York, UNDG. <https://bit.ly/48lb0zY>

Verschuuren B; Wild R; McNeely J; Oviedo G (eds.). (2010). Sacred natural sites: conserving nature and culture. London and Washington DC: Routledge. <https://bit.ly/403ncDe>

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The Alliance is part of CGIAR, a global research partnership for a food-secure future dedicated to transforming food, land and water systems in a climate crisis.