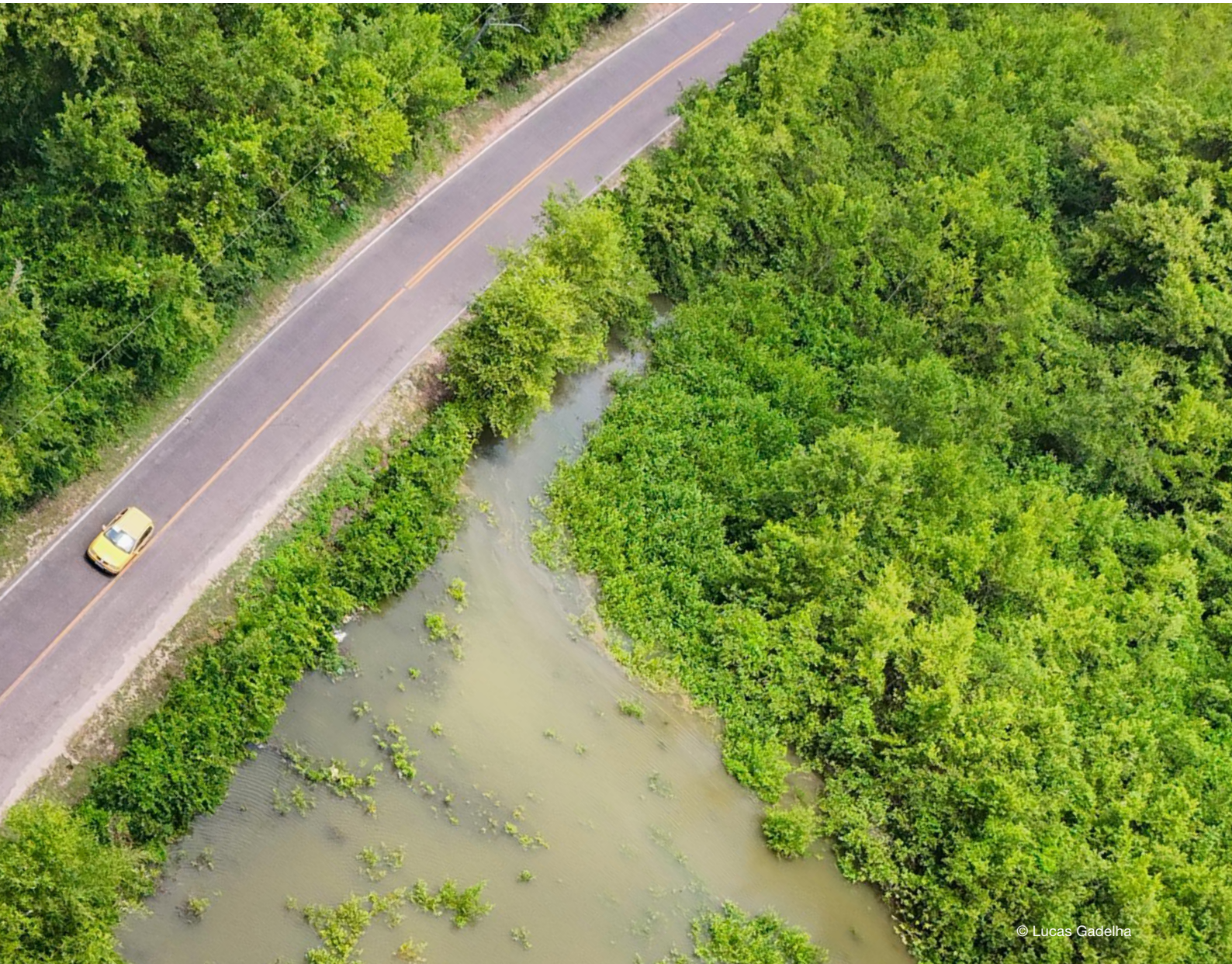
Ecosystem restoration for business

in a nature positive world



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Alcoa Foundation

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Summary: Ecosystem restoration for business

Purpose

This booklet aims to build bridges between ecosystem restoration practitioners and businesses seeking to undertake ecosystem restoration as part of their impact mitigation or nature positive goals.

Concepts

Ecosystem restoration is the process of halting and reversing degradation, resulting in improved ecosystem services and recovered biodiversity.

Mitigation is about actions to avoid, reduce, restore or compensate harmful impacts to species and ecosystems that arise from infrastructure or industrial development and land-use change.

Nature positive is a global societal goal to halt and reverse nature loss by 2030 on a 2020 baseline, and achieve full recovery by 2050.

Restoration perspective

Restoration practitioners are focused on the adaptive process of restoration efforts. They care that restoration follows science-based standards and involves relevant stakeholders. Restoring ecosystems is complex and requires decades to recover the composition, structure, and functions of ecosystems.

→ Restoration is doable, but is a long process.

→ Restoration should complement other conservation actions.

→ Restoration is guided by standards.

→ Stakeholder engagement is an essential part of the restoration process.

→ Restoration requires adequate financing across all stages.

→ Scaling up restoration efforts should be a priority.

→ Businesses rely on the health of ecosystems.

Business perspective

Businesses increasingly see the importance of ecosystem restoration as part of their sustainability strategies. They require short-term outcomes at optimal costs to get involved in restoration. Clear communication, including targets and timeframes, are essential to bridge the gap between restoration science and business decision-making.

→ Companies engage in restoration for various reasons.

→ Business leaders need to understand the benefits of restoration.

→ Businesses require accurate and reliable cost estimations.

→ Clear communication in business language is needed.

→ Businesses require clear time-based targets and monitoring.

→ Restoration should be aligned with business needs.

Social dimensions

Ecosystem restoration involves multiple stakeholders, such as practitioners, landowners, institutions, policy-makers, local communities, and, increasingly, businesses. Including stakeholders in restoration acknowledges the connections between people and nature.

Practical application

Restoration projects involve various phases. Businesses have specific needs and contributions at each phase of a restoration project.

1. Planning: Success begins with understanding site conditions, engaging stakeholders, and defining clear, measurable targets.
2. Implementation: Restoration actions should align with socioecological principles and avoid negative side-effects.
3. Monitoring: Regular monitoring ensures progress toward goals and allows for adaptive management.

What is the **purpose of the booklet?**

The intention of this booklet is to build bridges between ecosystem restoration practitioners and businesses seeking to undertake ecosystem restoration as part of their impact mitigation or nature positive goals.

Ecosystem restoration aims to recover the biodiversity and vital services that healthy ecosystems provide, securing a sustainable future for both people and nature. Ecosystem restoration is often used as a way to address societal needs, such as improving water quality through watershed restoration or reducing coastal erosion via dune restoration. Due to the societal benefits, restoration practitioners are more accustomed to working with the public sector, where restoration is understood as a long, complex, socioecological process.

Businesses are increasingly turning to restoration not only to comply with regulatory obligations and compensate for their environmental impacts, but also to voluntarily achieve nature positive goals. Businesses can both contribute to, and benefit from, ecosystem restoration. The business sector tends to have specific needs for getting involved in restoration, such as accurate costings and rigorous reporting requirements. By better aligning restoration practices with corporate goals, practitioners can foster collaboration to scale-up restoration efforts. In turn, ecosystem restoration offers businesses a powerful opportunity to make a meaningful contribution to global sustainability goals. By adhering to established standards, involving stakeholders, and thinking ambitiously, businesses can contribute to a nature positive future.

In many instances, there is a gap between restoration practitioners, who are focused on the adaptive timelines of complex restoration processes, and business needs, which typically demand short-term results at optimal costs. Reconciling both needs will ensure that restoration initiatives deliver tangible, lasting environmental benefits. By working together, restoration practitioners and businesses can ensure their restoration efforts are impactful, transparent, and contribute to global initiatives.

Who is it for?

There are two main audiences for this booklet, and the aim is to foster stronger communication between them by explaining their different perspectives, concepts and terminology. The first audience is restoration practitioners who are active in implementing ecosystem restoration projects. They provide the scientific knowledge and practical experience of conducting restoration. The second audience is those within the business and corporate sector who have an interest in getting involved in restoration, such as a director of sustainability or environmental assessment practitioner. The business audience is primarily from those sectors that have a direct impact on the environment, like infrastructure or industrial development. These businesses are often required to undertake restoration to mitigate the impact of their activities. In other cases, restoration activities are voluntary, to align with corporate values toward nature positive goals.

How is it structured?

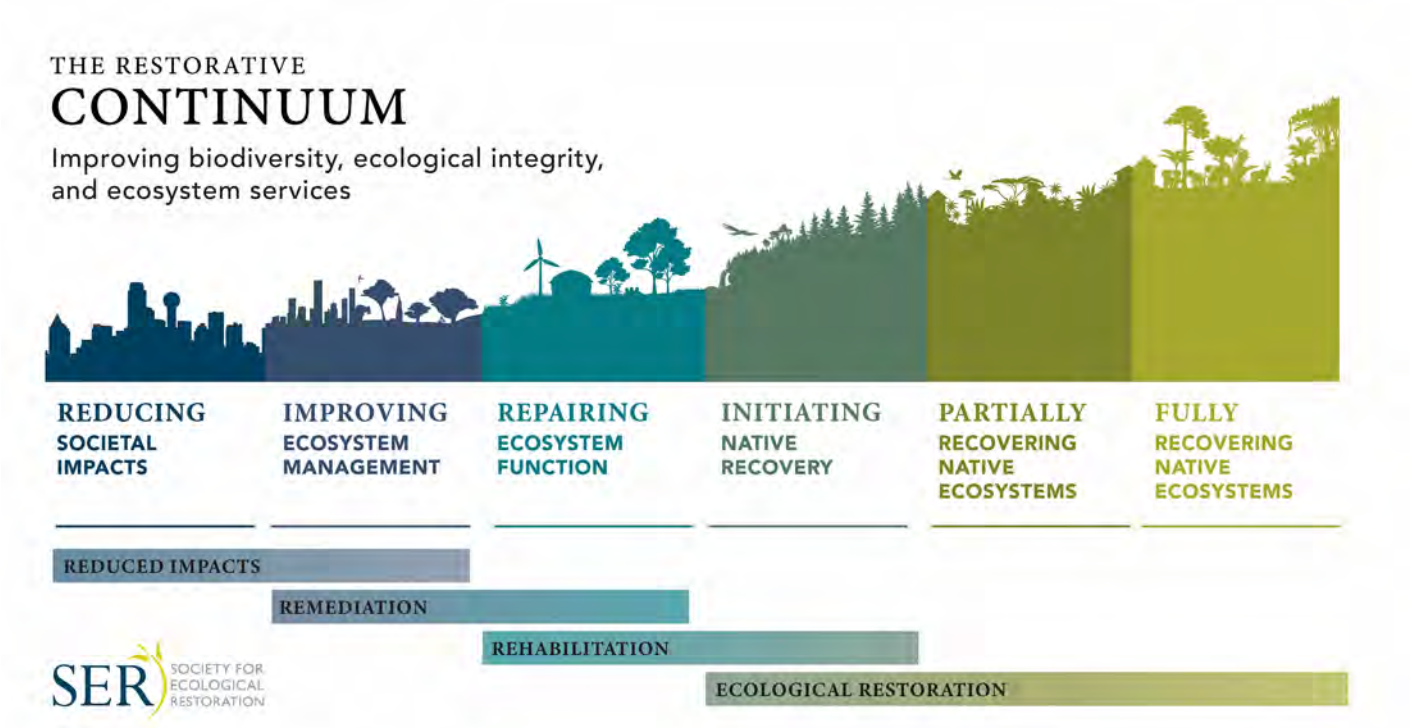
Key concepts	gives important background information on restoration, the mitigation hierarchy and the nature positive goals to ensure that everyone understands the relevant contexts and terminology
Perspectives	explains the different views of restoration practitioners and business actors, including the important information they would like each other to know
Social dimensions	emphasises the importance of engaging stakeholders and considering the social dimensions of a restoration project
Practical application	moves through the various stages of a restoration project from planning to implementation and monitoring, considering the aspects relevant to restoration practitioners and business at each stage

What are the **key concepts in restoration?**

Ecosystem restoration is a cornerstone of the global conservation agenda. Ambitious global initiatives for ecosystem restoration, such as the UN Decade on Ecosystem Restoration, offer an unprecedented opportunity to reverse ecosystem degradation, and improve ecosystem integrity, contributing to human health and well-being.

What is restoration?

Ecosystem restoration is defined as "*the process of halting and reversing degradation, resulting in improved ecosystem services and recovered biodiversity.*" The UN Decade on Ecosystem Restoration applies this term to a wide range of actions, from taking steps to reduce impacts on ecosystems, to fully recovering native ecosystems through ecological restoration. The range of actions is often referred to as the 'restoration continuum'. Most restoration actions need to involve more than just planting trees. They should also address ecosystem functioning, like energy and water flows, and nutrient cycling. These are particularly important for the delivery of ecosystem services, like clean water, soil fertility and climate regulation.



The restoration continuum includes a wide range of actions to restore ecosystems.
Society for Ecological Restoration.

What is ecosystem integrity?

Ecosystem integrity is the ability of an ecosystem to sustain its characteristic functions and biodiversity. Sometimes referred to as ecosystem condition, it can be measured by the degree to which an ecosystem's composition, structure and function have been degraded. To make this determination, restoration practitioners compare it to a reference state, which is a high-integrity ecosystem in the absence of any degradation. The aim of restoration practitioners is to recover ecosystem composition, structure, and function to match the reference ecosystem.

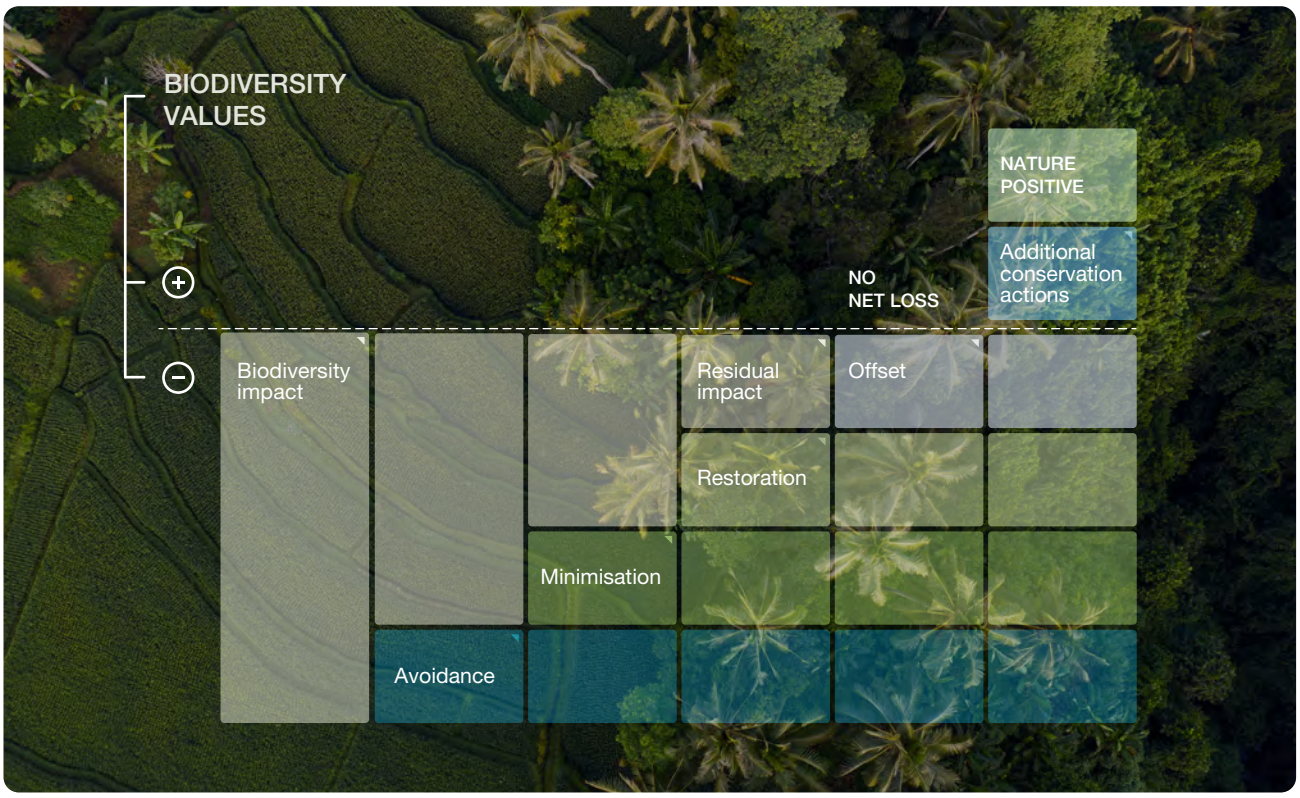
What are the **key concepts in impact mitigation?**

In the context of biodiversity, impact mitigation is about actions to avoid, reduce, restore or compensate for harmful impacts to species and ecosystems that arise from infrastructure or industrial development and land-use change. These mitigation actions are essential for reducing the loss of biodiversity across the globe.

What is the mitigation hierarchy?

The mitigation hierarchy is a framework used to reduce the negative impacts of development projects on the environment, particularly biodiversity. It outlines a sequence of actions, prioritised in order, to mitigate harm:

1. **Avoid:** The first step is to completely avoid adverse impacts on biodiversity. It may involve altering project designs, relocating or scheduling activities to prevent harm.
2. **Minimise:** When avoidance is not feasible, efforts shift to minimising impacts through measures that reduce their intensity, extent, or duration.
3. **Restore:** Impacts that persist after avoidance and minimisation should be addressed by restoring the affected ecosystems and habitats on-site.
4. **Offset:** As a last resort, the losses caused by the residual impacts should be compensated through biodiversity offsets, which must provide measurable conservation benefits elsewhere.



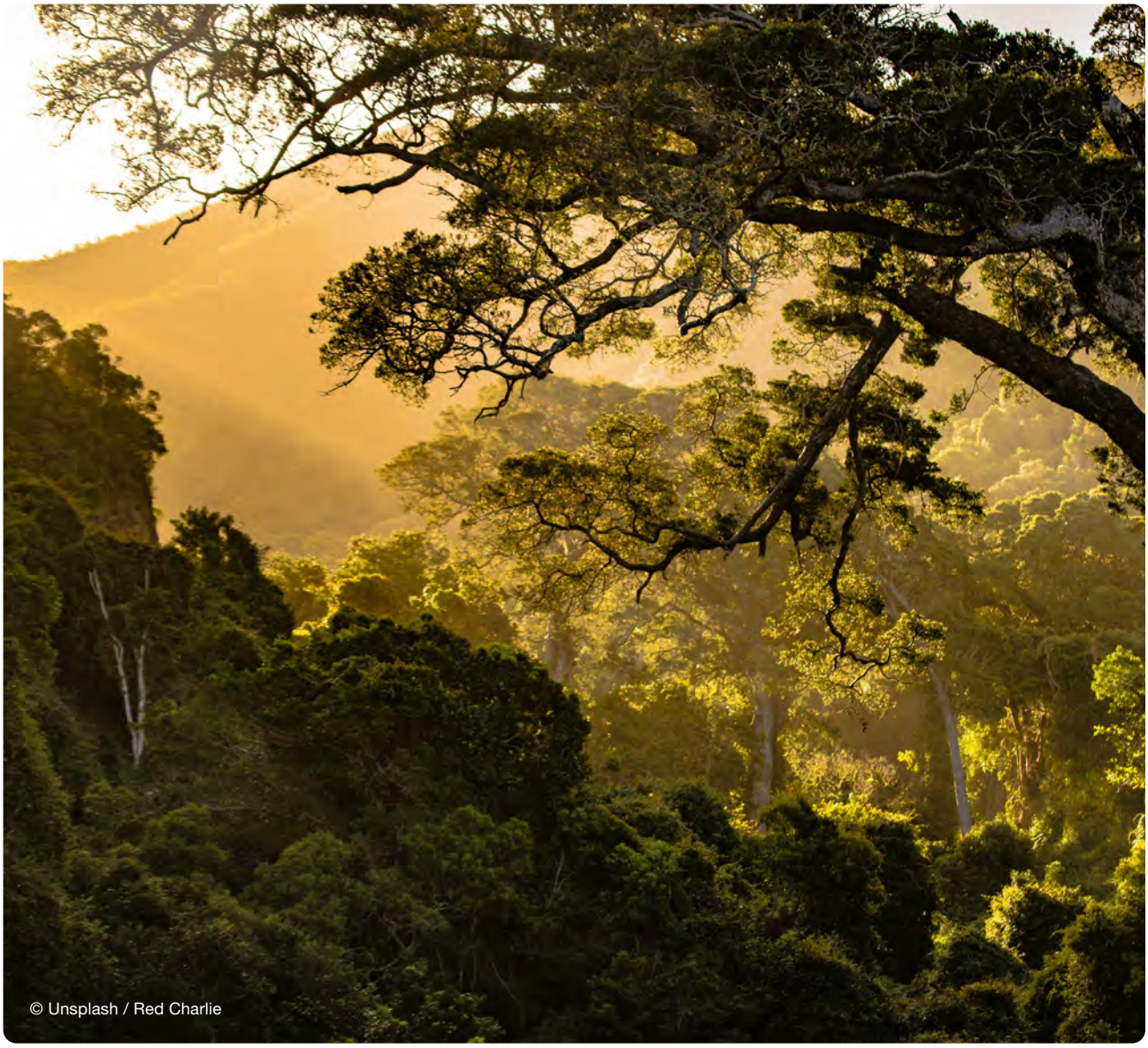
The mitigation hierarchy outlines steps to avoid, minimise, restore, and offset impacts.
Adapted from UN Global Compact and IUCN.

Restoration plays a dual role in the mitigation hierarchy, both as a direct step to remediate impacts on-site and as part of offsetting strategies. Since 2016, the International Union for Conservation of Nature (IUCN) has adopted a Policy on Biodiversity Offsets, which provides a framework to guide the design, implementation, and governance of biodiversity offset schemes and projects.

What are the goals of impact mitigation?

Efforts to mitigate impacts often align with corporate or societal goals, which vary in ambition. For example:

- **No Net Loss:** Balancing harm to biodiversity with measures to avoid, minimise, restore, and offset impacts, resulting in no overall biodiversity loss compared to a baseline.
- **Net Gain:** Achieving measurable biodiversity gains that exceed losses caused by impacts, compared to a baseline.
- **Nature Positive:** Nature positive is an emerging concept that conveys the aim to halt and reverse the loss of biodiversity. It means enhancing the state of nature by leaving ecosystems and biodiversity in a better condition than before.



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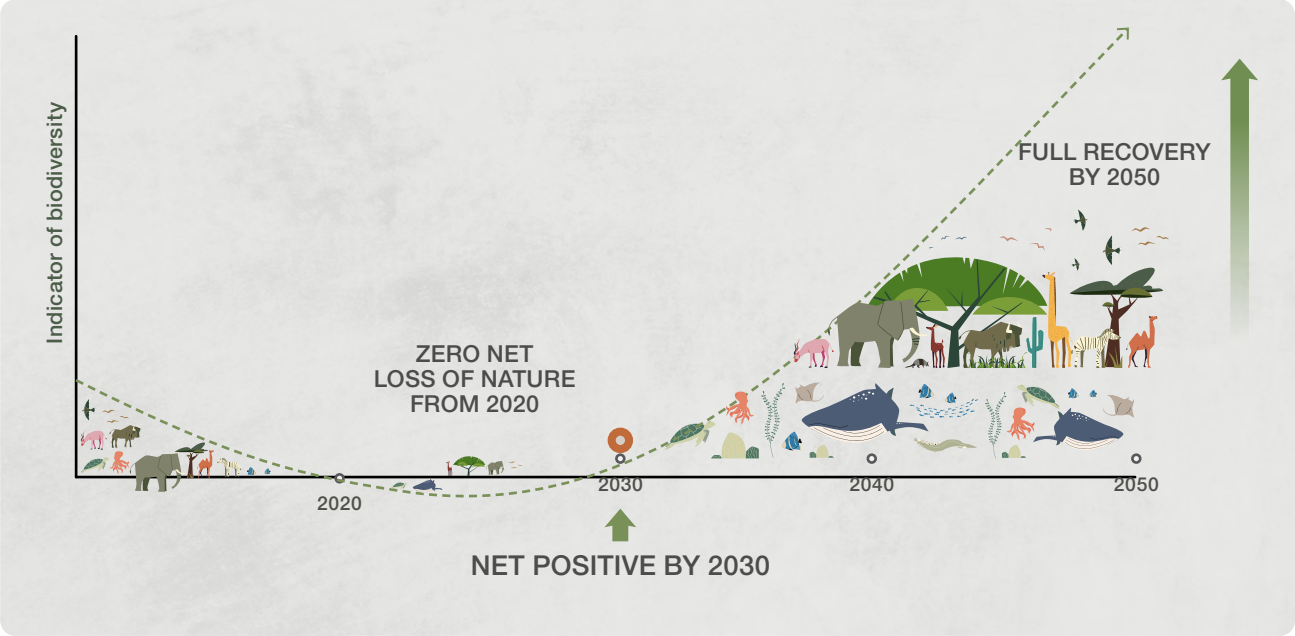
What are the **key concepts in the nature positive agenda?**

Nature positive goals are needed because merely conserving what remains is not enough to counteract the rapid decline of biodiversity. There is a coalition of organisations that agree we must actively restore nature and regenerate lost habitats to secure a thriving planet for future generations.

What is the nature positive goal?

The Nature Positive Initiative defines nature positive as a global societal goal to halt and reverse nature loss by 2030 on a 2020 baseline, and achieve full recovery by 2050. Put more simply, it means ensuring more nature in the world in 2030 than in 2020 and continued recovery after that. Unlike site-specific objectives, the goal emphasises cumulative impacts, interconnected ecosystems, and collective biodiversity benefits.



The nature positive goal is to reverse nature loss and achieve nature recovery.
Nature Positive Initiative.

Achieving nature-positive outcomes requires a comprehensive approach, beginning with the full application of the mitigation hierarchy. Only after addressing direct and indirect impacts, including those along value chains, can additional efforts contribute to the nature positive agenda. Projects aligned with the nature positive agenda should go beyond 'no net loss' to ensure net gains in ecosystem health. Businesses, governments, and communities can advance nature positive goals by investing in conservation and restoration efforts that deliver improved and healthier nature.

The IUCN document Nature Positive for Business provides additional technical information to better understand, inform and help clarify what nature positive means for businesses.

How does restoration contribute?

Ecosystem restoration directly supports the nature positive goal because it is the only way to gain back ecosystems that have been degraded. Actions such as reintroducing native species, and enhancing natural processes help reverse negative human impacts. Restoration contributes by halting biodiversity loss, improving ecosystem health and resilience, and restoring essential ecosystem services.

Restoration practitioners' perspective
What do businesses need to know?

Restoration practitioners are focused on the adaptive process of the restoration efforts. They care that restoration follows science-based standards and involves relevant stakeholders. Restoring ecosystems is complex and requires decades to recover the composition, structure, and functions of ecosystems.

Restoration is doable, but can be a long process.

Restoration practitioners aim to recover the composition, structure, and function of ecosystems. It extends beyond simple activities like planting trees. Full restoration seeks to re-establish the intricate species interactions and ecological processes that are the basis for ecosystem resilience. Addressing these complexities is crucial for delivering long-term benefits to both nature and society. Ongoing threats to restored ecosystems, such as invasive species, must be actively managed to prevent setbacks. Given the long timeframes, restoration is best understood as a process rather than a single event. Full recovery of the ecosystem is very difficult to achieve, and continues long beyond specific interventions.

Restoration should complement other conservation actions.

While restoration is essential to recover biodiversity and ecosystem services, it cannot be used to justify avoidable degradation. The mitigation hierarchy – avoid, minimise, restore, and then offset – should guide decisions, ensuring that new disturbances are only permitted when necessary and responsibly mitigated. The nature positive initiative says "Protect the best, restore the rest", since full ecosystem recovery may be impossible or take centuries. Protecting intact ecosystems needs to be the priority, before restoration is considered.

Restoration is guided by standards.

The field of ecosystem restoration is guided by evidence-based standards, such as the Standards of practice to guide ecosystem restoration. The principles emphasise stakeholder engagement, integrating all types of knowledge, and aligning with wider policies. Successful restoration projects include planning, implementation, maintenance, and monitoring. Each phase is critical to achieving long-term outcomes that result in meaningful ecosystem recovery. Understanding the science and best practices of ecosystem restoration is essential to maximise its impact.

Stakeholder engagement is an essential part of the restoration process.

Collaborating with indigenous peoples and local communities ensures that restoration initiatives are locally relevant, informed by traditional knowledge, and supported by those most affected by environmental changes. Stakeholder engagement ensures that restoration aligns with local ecological, cultural, and socio-economic contexts.

Restoration requires adequate financing across all stages.

Restoration requires security in financial flows spanning years or decades. Both social dimensions and restoration activities take time and need financial security. Adequate resources are needed from initial planning to long-term monitoring. Success in restoration requires adaptive management, which means adjusting strategies to improve restoration outcomes in response to changing conditions and new information.

Scaling up restoration efforts should be a priority.

To achieve the nature positive goals, we need to do more than conserve what exists. There are large, degraded areas to be restored worldwide. Businesses have the unique ability to mobilise resources, influence policies, and inspire societal action at a scale that can drive transformative change. By aligning their restoration investments with global biodiversity and climate goals, companies can position themselves as leaders in sustainability while contributing to a healthier planet.

Businesses rely on the health of ecosystems.

Modern businesses rely on ecosystems for essential services such as clean water, pollination, carbon sequestration, and climate regulation. Widespread environmental degradation threatens these services, undermining both ecological and economic stability. Businesses have an opportunity, and a responsibility, to contribute to ecological restoration. By doing so, they not only contribute to global sustainability, but also increase their own benefits from their dependence on nature.

Business actors' perspective
What do restoration practitioners need to know?

Businesses increasingly see the importance of ecosystem restoration as part of their sustainability strategies. They require short-term outcomes at optimal costs to get involved in restoration. Clear communication, including targets and timeframes, are essential to bridge the gap between restoration and business decision-making.

Companies engage in restoration for various reasons.

Some are driven by legal compliance, adhering to regulations that call for environmental remediation. Others view restoration as part of their corporate social responsibility, enhancing their reputation in society. Still others invest in restoration to ensure the continued supply of ecosystem services that their operations depend on, such as soil fertility, or water resources. An increasing number of businesses are making voluntary commitments to conservation and restoration. These initiatives signal a shift in corporate culture, where companies proactively seek to contribute to global sustainability goals.

Business leaders need to understand the benefits of restoration.

Many business leaders and decision-makers have limited knowledge of the ways in which nature contributes to their operations. To build buy-in, these leaders need evidence of the tangible benefits of restoration projects, but also need to understand the challenges. While the societal and intergenerational benefits of restoration are important, businesses are often motivated by short-term, direct returns. These might include improved water quality, enhanced carbon sequestration, or reducing risks to supply chains reliant on natural resources. It is important to state the more immediate benefits of restoration, in addition to the long-term outcomes. At the same time, it is crucial to emphasise the complexity of biodiversity, as well as the difficulty of restoring degraded ecosystems.

Businesses require accurate and reliable cost estimations.

For restoration projects to gain support from business managers, they must be accompanied by precise budgets and projections that outline both short- and long-term financial implications. Budgets should be based on clear and actionable measures, and account for uncertainties and potential risks. To ensure flexibility of restoration projects, several different solutions with varied prices should be put on the table. A transparent budget enhances the chances of reaching an agreement with business actors for restoration projects.

Clear communication in business language.

Since business stakeholders are often not familiar with scientific terms, they need restoration practitioners to adapt their language to resonate with corporate terminology. It is important that the restoration metrics, performance indicators and economic costs are clearly presented to business actors. Ecological information and scientific rigour are essential, but they must be clearly communicated to all stakeholders at every step of the project. Restoration practitioners need to guide businesses in understanding that successful restoration requires a nuanced approach, incorporating ecological, social, and economic considerations.

Businesses require clear, time-based targets and monitoring.

Businesses need to measure their restoration impacts to check whether their investment is meeting the goals they committed to. They are looking for measurable, time-based targets of what must be achieved. These are sometimes called 'target-based restoration' with 'completion criteria'. They require a robust estimation of the restoration trajectory with clear actions to be taken to meet initial, intermediate and final targets, allowing adaptive management.

Restoration should be aligned with business needs.

It is important to demonstrate how science-based restoration practices can enhance cost-effectiveness of business restoration projects by raising the success rates. It is also necessary to be explicit about how restoration can contribute to corporate objectives, such as risk reduction or market differentiation. Environmental, Social and Governance (ESG) actions can attract new investors. If the value of ecological recovery is clearly articulated for business, significant resources can be unlocked to scale up the restoration of degraded ecosystems with the aid of business actors.

Why are **social dimensions** important for restoration?

Ecosystem restoration does not occur in a social vacuum. It involves multiple stakeholders, such as practitioners, landowners, institutions, policy-makers, local communities, and, increasingly, businesses. Including stakeholders in the restoration process acknowledges the connections between people and nature.

Why involve indigenous people and local communities?

Including indigenous people and local communities is essential for the success and sustainability of any restoration project. They possess deep, place-based knowledge of ecosystems and sustainable practices that have been honoured over generations. Integrating traditional knowledge with modern science leads to more holistic solutions. Moreover, restoration projects often impact the lands, resources, and livelihoods of indigenous people and local communities. They must be included in equitable decision-making to protect their rights. Their engagement also fosters a sense of stewardship, increasing their long-term commitment to maintaining the restored ecosystems. The long-term scale of restoration often extends beyond an individual's lifetime. Therefore, stakeholder engagement ensures continuity and permanence of a restoration project. By involving indigenous people and local communities, restoration projects not only achieve their ecological goals, but also promote social equity, cultural preservation, and sustainable development.

How do different human values influence restoration goals?

Values are shaped by the cultural backgrounds and personal experiences of stakeholders. These interests can influence the outcomes of restoration efforts. The benefits that stakeholders wish to gain from restoration are rooted in their values. For instance, some people may place value on non-native or invasive species due to their usage, even though these species pose a risk to ecosystems. Similarly, the value of instant carbon sequestration using non-native species can pose a threat to long-term restoration of natural ecosystems. In this way, human values guide the shared goals and targets for restoration, and will determine the approach that is taken. Conflicting interests can overshadow restoration goals. It is therefore crucial to understand the values of all stakeholders to cultivate positive attitudes towards the restoration project and align restoration goals.

How should all stakeholders be included?

“Stakeholders can make or break a project”. This statement, drawn from the International Principles and Standards for the Practice of Ecological Restoration, emphasises the crucial role of stakeholders in restoration projects. It is important to involve people with diverse perspectives, from different cultural and professional backgrounds. Clear communication, sharing of knowledge and active collaboration help to bring all stakeholders together and align efforts to mutual goals. Active stakeholder engagement builds trust and reduces uncertainties. It helps to prevent a project from becoming short-ended or developing along perverse trajectories. Also important is integrating restoration into wider policy and planning to secure restoration on a landscape scale, thus all stakeholders should be involved.

What are social challenges that may arise?

Restoration efforts can result in potential negative social effects, such as reduced area for grazing or agricultural production, or restrictions on access to areas that have been protected. These risks, if not properly managed, can leave a negative impression of the process and may lead to public resistance or a lack of support for restoration efforts. Sustained support from communities, governments, and businesses is necessary for successful restoration. Communicating and sharing knowledge by reporting on restoration progress are actions that should be performed throughout the restoration process.

Practical application
How to upscale restoration and involve business?

Restoration projects involve various phases. Initial planning and ongoing monitoring are as important for the success of a project as the implementation phase. Businesses may have specific needs and contributions at each phase of a restoration project.

1. Planning

Success begins with understanding site conditions, engaging stakeholders, and defining clear, measurable goals. Financial investment in the planning phase is essential for baseline assessments, risk analysis, and detailed project design.

Is it worthwhile for businesses to invest in restoration?

It is both feasible and worthwhile for business actors to invest in restoration activities, as they present opportunities for long-term economic, social, and ecological benefits. Restoration can directly enhance ecosystem services that businesses rely on, such as clean water, fertile soil, pollination, and climate regulation. Restoration is not only embedded into good business practice as part of the mitigation hierarchy, it also helps to enhance reputation and meet consumer demand for environmentally responsible practices, offering competitive advantages in a market increasingly driven by sustainability. Investing in restoration is also a strategic response to emerging global challenges and regulatory trends. Governments and international organisations are implementing policies that encourage private sector participation in restoration efforts. Businesses that invest proactively can influence these policies, and establish partnerships with restoration practitioners on the ground, enhancing their access to funding and resources. In the long term, businesses will gain not only financial returns but also contribute to the resilience of ecosystems and communities, which are essential for sustained economic stability and growth.

How are impacts predicted?

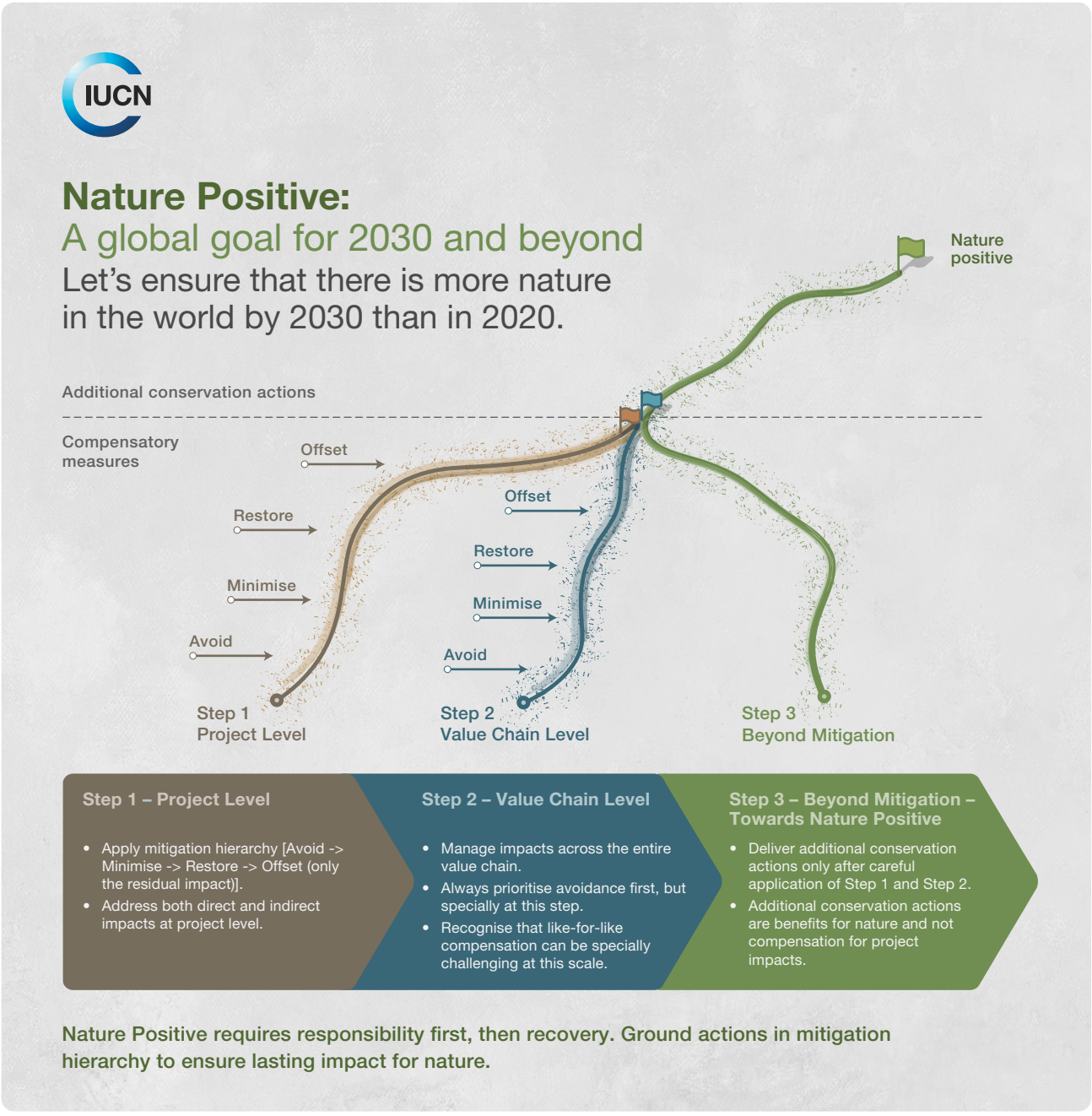
When required by regulations, restoration is most often used to mitigate for the negative environmental impacts of development. Impact mitigation is a legal requirement in most countries and environmental authorisations will often require some degree of restoration. Environmental Impact Assessment is the most appropriate tool to assess socio-environmental impacts. It involves application of the mitigation hierarchy, which will often identify requirements for on-site restoration or restoration through biodiversity offsets beyond the development footprint. The assessment report should include detailed information about how the development is predicted to impact on species and ecosystems, and how these impacts must be mitigated or compensated through restoration.

How are targets set?

Target setting should happen before the project begins, and should consider the ecological and social goals that the restoration project aims to achieve. A baseline assessment establishes the starting conditions to measure future progress against. Alternatively, an appropriate reference model could be developed, derived from undisturbed or minimally degraded ecosystems of the same type, to provide a benchmark for assessing recovery. A benchmark should incorporate diverse data sources, including traditional knowledge and scientific observations, ensuring relevance to both historical and anticipated future conditions. Targets are then set, and indicators will show how the ecosystem being restored is moving towards the benchmark. Targets should be time bound, and clear about what elements need to be measured and how, in line with the Principles for Ecosystem Restoration. Several metrics are available to measure species attributes, ecosystem condition and ecological functions.

What targets are used for offsets vs voluntary restoration?

In cases where the aim is to offset impacts, it is essential to quantify the ecological losses due to impact and the gains that would be achieved from the restoration. Biodiversity offset requirements call for ecological equivalence (or like-for-like), which means the type and amount of biodiversity lost, and that to be restored, must be the same or very similar. One way to do this is to identify the ecosystem types to be restored at the finest scale ecosystem map available, preferably corresponding to levels 5 or 6 of the IUCN Global Ecosystem Typology. The areas to be restored are then calculated, usually using multipliers or offset ratios to account for uncertainty and time lag in the delivery of gains. In cases where the aim is to achieve nature positive or similar voluntary commitments, the targets go beyond offsetting impacts to achieve no net loss. Instead, they hope to achieve gains in the identified ecosystem type or species. Nature positive targets can only be credibly achieved when negative impacts have been compensated for.



2. Implementation

Restoration actions like reforestation, soil stabilisation, and species reintroduction require care to ensure they align with socioecological principles and avoid negative side-effects that may impact native ecosystems and local peoples.

How can businesses ensure additionality?

The business sector should consider the additionality of their restoration projects, that is, how much of the restoration gains by the project are exclusively because of the actions of the company. Additionality is about checking that a project is genuinely making a difference, rather than simply supporting activities that would have occurred anyway. If the areas restored by businesses were already required to be restored by other law or regulation, there is no additionality in the project. In voluntary restoration projects, if the company plans on claiming they are nature positive, additionality is also important. In this context, the restoration needs to be equivalent to what was lost after 2020 and in addition to restoration actions already mandated by regulations. Nature positive also requires that all steps of the mitigation hierarchy are addressed before any claims of additional benefit are made. Since nature positive also aims at a continuous nature recovery, it also requires that restoration endures.

How to deal with high costs, high uncertainty and time lags?

Restoration costs are usually high, and business stakeholders may be reluctant to invest in and implement them. Restoration may be more expensive when compared to other conservation measures, like protecting intact ecosystems. Time-lags are another problem inherent to most compensation schemes, particularly when based on restoration. The distance in time from the present impact to the future, and often uncertain, ecological benefits can be lengthy. However, long-term restoration benefits will eventually pay for the initial investment through improvements in ecosystem services. For many ecosystems, scientific understanding of effective restoration techniques is still incomplete. Efforts are ongoing to address these challenges by exploring new ecological and financial approaches to optimise restoration, and by learning from existing initiatives.

What about biodiversity banking as an option for restoration?

Biodiversity banking is a promising approach for businesses implementing restoration projects. It involves restoring or protecting ecosystems in advance of a development project to offset the biodiversity losses that will occur elsewhere. The biodiversity benefits generated in the banks are called credits, which can be bought by developers in need of offsetting. Biodiversity banking can help to address the problem of time-lags in offsets, as they can start delivering benefits immediately. If they are focused on restoration, the banks will also aid in biodiversity recovery – and in achieving nature positive goals. Therefore, it might be a good option to align offsets and restoration. The moment to implement the offset should be defined according to the time the impacts are estimated to occur.

3. Monitoring

Restoration is a long-term process. Regular monitoring, evaluation and reporting ensures progress toward defined goals and allows for adaptive management to address emerging challenges. Maintenance activities, such as controlling invasive species and ensuring ecosystem connectivity, are critical for sustained success.

Why is monitoring important for business?

Businesses require measurable restoration outcomes to track progress, demonstrate compliance and satisfy stakeholder expectations. Therefore, monitoring is essential to ensure socioecological effectiveness, accountability and transparency in restoration projects. Measurable outcomes enable precise reporting, helping mitigate risks associated with environmental and social impacts. Certain regulatory frameworks also require third-party verification to validate outcomes and maintain credibility. Regular assessment of progress also supports adaptive management, maintaining alignment with restoration objectives while addressing unforeseen challenges. Additionally, robust follow-up of social and ecological impacts of restoration projects helps enhance corporate reputation by showcasing a genuine commitment to sustainability.

What is required for monitoring?

Robust monitoring protocols are needed to ensure that ecological and social outcomes are adequately measured and shared with all stakeholders. Monitoring restoration progress is already mandatory in some places, but even where it is not, it is needed to ensure that restoration projects stay on track. Monitoring should rely on clear and adequate

indicators, which go beyond simple output indicators, like the number of seedlings planted, and be able to measure long-term restoration outcomes, like ongoing increase in composition of species. Progress should be measured against the clearly defined benchmarks and restoration targets identified in the planning stages. Monitoring does demand time and financial resources. Nonetheless, it helps prevent the waste of resources, as it identifies restoration failures and allows for efficient adaptive management. Modern technology offers cutting edge methods that may decrease monitoring costs.

How are social outcomes assessed?

While there is a lot of research on measuring the ecological outcomes of restoration, assessing the social outcomes, although crucial, is often neglected. It is important to evaluate and re-evaluate stakeholders' perspectives throughout the restoration project. Assessing social dimensions is challenging due to the multiplicity of factors and their complexity. Tools to assess social outcomes must be capable of handling quantitative and qualitative data. The primary data for assessing social outcomes are qualitative, such as levels of trust and overall satisfaction, while quantitative data can reveal some impacts on stakeholders, such as job creation.

How to ensure permanence of restoration efforts?

Permanence is about guaranteeing the long-term sustainability of restoration efforts. It ensures that further degradation is avoided in areas that have been restored. Permanence is a condition of biodiversity offsets, with many countries proposing a minimum of 30 years as a legal requirement. Beyond the regulatory requirements, businesses are interested in making the outcomes of their restoration project last as long as possible, since their financial investment in each project is high. Moreover, considering the current global climate change and biodiversity decline, the permanence of restored areas is of interest to people, because of the need for nature to recover its biodiversity and ecosystem services at all levels, from local to global. Businesses can achieve permanence of their restoration efforts by committing to maintenance, involving stakeholders and considering legal protections. Restoration efforts should also aim to foster ecosystem self-organisation – restoring natural processes and resilience so ecosystems can sustain themselves without ongoing intensive management.

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Conclusion

Bridging the gap between ecosystem restoration practitioners and businesses is crucial for achieving global sustainability goals. Ecosystem restoration is fundamentally about reversing environmental degradation, improving vital services, and recovering biodiversity – all essential for a nature-positive future.

Practitioners' approach restoration as a complex, long-term process, emphasising science-based standards, broad stakeholder engagement, and sustained financing. Businesses, however, often seek more immediate, cost-effective outcomes, requiring clear targets, reliable cost estimations, and robust monitoring for their involvement.

Reconciling these different perspectives is key to scaling up restoration efforts. By fostering clearer communication and aligning restoration practices with corporate needs, it would be possible to unlock significant contributions from the business sector. These efforts will ensure that restoration genuinely contributes to a nature-positive future for all.

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What are some helpful resources?

The UN Decade on Ecosystem Restoration (2021-2030) is a global rallying call to prevent, halt, and reverse the degradation of ecosystems across every continent and in every ocean.

The Principles for Ecosystem Restoration are a set of ten guiding principles developed to guide the UN Decade on Ecosystem Restoration.

The International Principles and Standards for the Practice of Ecological Restoration are a foundational document developed by the Society for Ecological Restoration (SER) to provide comprehensive guidance for planning, implementing, monitoring, and evaluating ecological restoration projects worldwide.

The IUCN Policy on Biodiversity Offsets is a framework designed to guide the appropriate use, design, implementation, and governance of biodiversity offset schemes and projects.

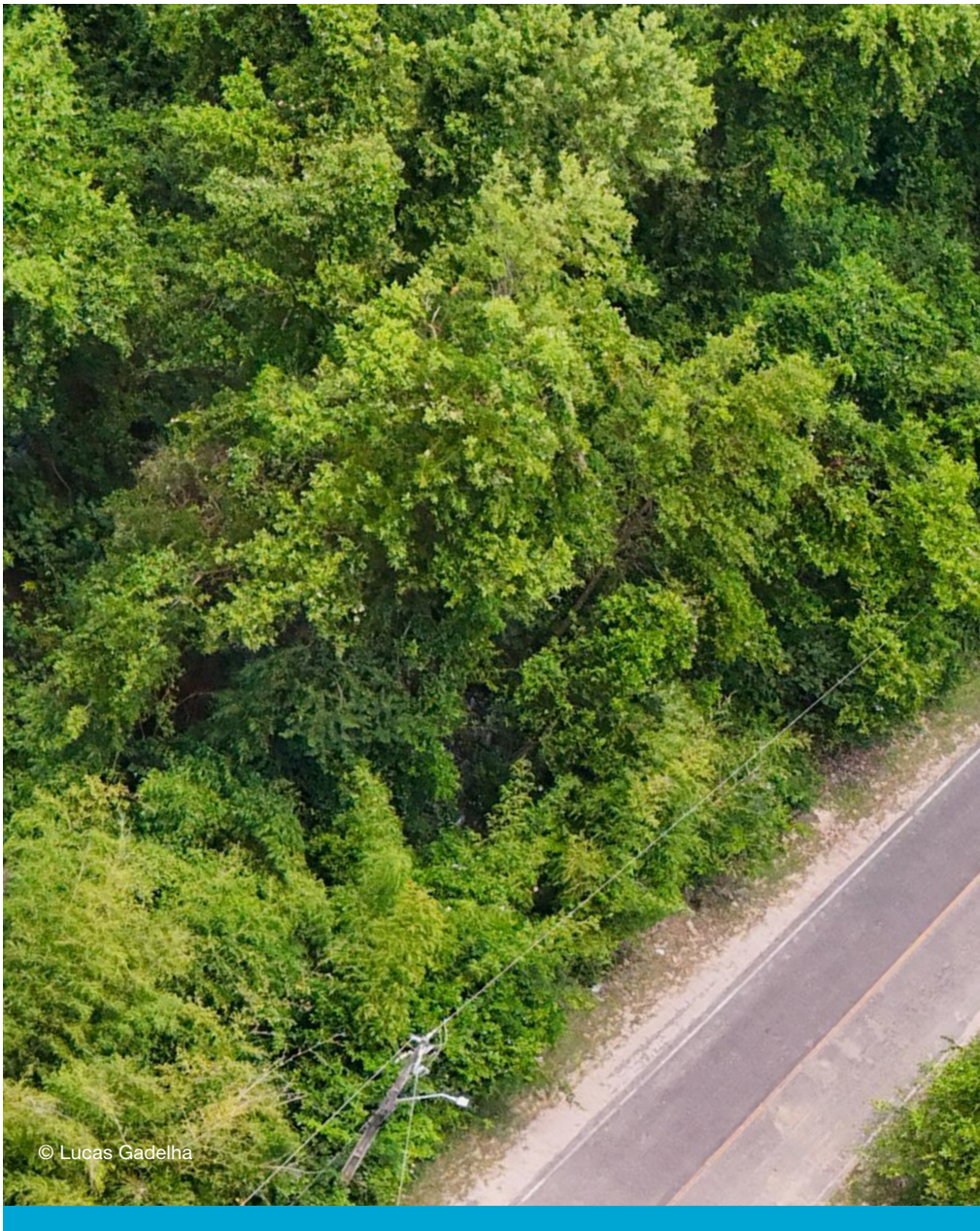
The Nature Positive Initiative is a collaborative effort that aims to halt and reverse nature loss by 2030 (from a 2020 baseline) and achieve full recovery by 2050.

Nature Positive for Business is an IUCN technical paper that aims to help businesses understand, measure, and contribute to the global nature positive goal.

The IUCN Global Standard for Nature-based Solutions help users to design and assess Nature-Based Solutions, which are actions to protect, conserve, restore, sustainably use and manage ecosystems while simultaneously benefiting human well-being.

The Restoration Opportunities Assessment Methodology (ROAM) helps countries pinpoint prime areas for ecosystem restoration by analysing ecological, social, and economic factors.

The Task Force for Nature-related Financial Disclosures (TNFD) provides guidance to enable business and finance to assess, report and act on their nature-related dependencies, impacts, risks and opportunities.



INTERNATIONAL UNION
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