



Best Practice in Delivering the 30x30 Target

Protected Areas and Other Effective Area-Based
Conservation Measures

A report for the UK Department for Environment, Food and Rural Affairs
From The Nature Conservancy

2ND EDITION (UPDATED), APRIL 2023

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A bluebird is captured in mid-flight, its wings spread wide, as it moves through a field of vibrant yellow daisies. In the upper portion of the image, several purple flowers are visible against a soft, blurred background. The overall scene is bright and colorful, with a focus on the bird's movement and the surrounding flora.

Update

Update: Following the Fifteenth Conference of Parties of the Convention on Biological Diversity

This report was first published before the final decision on the Global Biodiversity Framework was made at the CBD meeting in December 2022. Some important issues relating to implementation of Target 3 are still being discussed; the text remains ambiguous in places and it will take several months to interpret and agree ways forward. However, the practical guidance outlined below has not been affected by revisions at the CBD Conference of Parties. We have therefore not revised the main text of the following report, which still refers for example to “*draft target 3*” and quotes language in the draft target.

This document identifies the most effective options for delivery of a target of achieving 30% of land, inland water and ocean in protected areas and other effective area-based conservation measures by 2030 (‘30x30’), as set out in Target 3 of the Global Biodiversity Framework (GBF) from the Convention on Biological Diversity (CBD).

The target, agreed in December 2022, is as follows: “*Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.*”

Table 9, which looks at the links between Target 3 and other GBF targets, has been updated below with the agreed text. Contributions of Target 3 to other GBF targets are in green; other GBF targets that have significant implications on the way that Target 3 is implemented are in blue.

Table 9: Links between Target 3 and other targets in the Global Biodiversity Framework

Global Biodiversity Framework Target	Link to Target 3 of the GBF
<p>1. Ensure that all areas are under participatory integrated biodiversity inclusive spatial planning and/or effective management processes addressing land and sea use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities.</p>	<p>Multiple land and water-use strategies will be needed within systematic conservation planning and protected and conserved areas will play a major role particularly within intact and wilderness areas, while integrated approaches are needed to increase connectivity between such areas, and to mainstream biodiversity conservation into sectoral activities. <i>T3 elements: importance to biodiversity, ecological representation, integration.</i></p>
<p>2. 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.</p>	<p>Restoration needs to take place across the whole landscape and seascape, including within protected areas and OECMs, and area-based conservation is itself a strategy for stimulating restoration, particularly through natural regeneration. Protected areas can also act to prevent inappropriate “restoration” activities on value habitats such as natural grasslands. <i>T3 elements: well-connected.</i></p>
<p>4. Ensure urgent management actions, to halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk, as well as to maintain and restore the genetic diversity within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management practices, and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.</p>	<p>Management actions for conservation of species and genetic diversity are required throughout, but area-based conservation remains the single most important tool, and many species rely on protected areas for their survival. <i>T3 element: effectively conserved and managed.</i></p>
<p>5. Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation, minimizing impacts on non-target species and ecosystems, and reducing the risk of pathogen spill-over, applying the ecosystem approach, while respecting and protecting customary sustainable use by indigenous peoples and local communities.</p>	<p>Wildlife crime challenges protected areas, especially when species with high economic value are focused in or confined to protected areas. This risks increasing militarisation of protected areas, endangers rangers and has effects on local communities. Action is needed at the buyers’ end as well as in the field. T5 also addresses sustainable use of wild species, which is applicable to some PAs and OECMs. <i>T3 element: effectively conserved and managed.</i></p>
<p>6. Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 percent, by 2030, eradicating or controlling invasive alien species especially in priority sites, such as islands.</p>	<p>Some protected areas, particularly offshore islands, are at high risk from invasive species but also, due to their isolation, provide a controlled environment in which eradication policies can be applied to invasive species. <i>T3 element: effectively conserved and managed.</i></p>

Global Biodiversity Framework Target	Link to Target 3 of the GBF
<p>7. Reduce pollution risks and the negative impact of pollution from all sources, by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services, considering cumulative effects, including: reducing excess nutrients lost to the environment by at least half including through more efficient nutrient cycling and use; reducing the overall risk from pesticides and highly hazardous chemicals by at least half including through integrated pest management, based on science, taking into account food security and livelihoods; and also preventing, reducing, and working towards eliminating plastic pollution.</p>	<p>Pollution threatens many protected areas; threats are often underplayed. Acidification is rising in some areas, pesticides and nitrate impact many protected areas, and plastic pollution threatens marine life inside and outside marine protected areas. Protected and conserved areas provide ideal sites for monitoring progress on Target 7. <i>T3 element: effectively conserved and managed.</i></p>
<p>8. Minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster risk reduction actions, including through nature-based solution and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity.</p>	<p>Protected and conserved areas have key roles to play in mitigating climate change (through carbon sequestration and storage) and in adaptation to the existing and expected changes. Management strategies within protected areas – and particularly OECMs – will increasingly need to address climate issues in terms of vegetation retention, peat rewetting etc. (Note though that ecosystem approaches should not be an excuse for inaction on reducing emissions.) <i>T3 element: ecosystem functions and services.</i></p>
<p>9. Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits for people, especially those in vulnerable situations and those most dependent on biodiversity, including through sustainable biodiversity-based activities, products and services that enhance biodiversity, and protecting and encouraging customary sustainable use by indigenous peoples and local communities.</p>	<p>While some conservation will limit agricultural or fisheries expansion in biodiversity-rich sites, some protected areas and many OECMs provide food (fish, also other wild foods and low-level grazing). Many MPAs also replenish fish stocks, with fish spilling outside, keeping supplies for local communities. <i>T3 elements: ecosystem functions and services and integrated into landscapes, seascapes and the ocean.</i></p>
<p>11. Restore, maintain and enhance nature’s contributions to people, including ecosystem functions and services, such as regulation of air, water, and climate, soil health, pollination and reduction of disease risk, as well as protection from natural hazards and disasters, through nature-based solutions and ecosystem-based approaches for the benefit of all people and nature.</p>	<p>Protected areas and OECMs are valuable, often sole, sources of many ecosystem services – water (quality and sometimes quantity), disaster risk reduction (floods, landslip, coastal protection) and carbon. In the ocean they increase biomass and security of marine proteins, e.g., by recovering fish stocks. <i>T3 element: ecosystem functions and services.</i></p>
<p>12. Significantly increase the area and quality and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas sustainably, by mainstreaming the conservation and sustainable use of biodiversity, and ensure biodiversity-inclusive urban planning, enhancing native biodiversity, ecological connectivity and integrity, and improving human health and well-being and connection to nature and contributing to inclusive and sustainable urbanization and the provision of ecosystem functions and services</p>	<p>Nature reserves are known for their role in physical and mental health, especially near to urban centres: the “green gym” concept. Protection of natural areas is linked to the prevention of future pandemics. <i>T3 element: ecosystem functions and services.</i></p>
<p>13. Take effective legal, policy, administrative and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits that arise from the utilization of genetic resources and from digital sequence information on genetic resources, as well as traditional knowledge associated with genetic resources, and facilitating appropriate access to genetic resources, and by 2030 facilitating a significant increase of the benefits shared, in accordance with applicable international access and benefit-sharing instruments.</p>	<p>Protected areas provide important protection for genetic resources, particularly crop wild relatives, many of which are under threat in the wider environment. Planning for genetic resources needs to be factored more closely into protected area planning. <i>T3 element: ecosystem functions and services.</i></p>

Global Biodiversity Framework Target	Link to Target 3 of the GBF
<p>14. Ensure the full integration of biodiversity and its multiple values into policies, regulations, planning and development processes, poverty eradication strategies, strategic environmental assessments, environmental impact assessments and, as appropriate, national accounting, within and across all levels of government and across all sectors, in particular those with significant impacts on biodiversity, progressively aligning all relevant public and private activities, fiscal and financial flows with the goals and targets of this framework.</p>	<p>Will be essential in reducing threats to protected areas and OECMs. <i>T3 element: integrated into wider landscapes, seascapes and the ocean.</i></p>
<p>18. Identify by 2025, and eliminate, phase out or reform incentives, including subsidies harmful for biodiversity, in a proportionate, just, fair, effective and equitable way, while substantially and progressively reducing them by at least 500 billion United States dollars per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity.</p>	<p>Incentive reforms will be needed to reduce drivers that degrade protected areas and OECMs, particularly fishing subsidies that impact on marine protected areas, subsidies that encourage further vegetation clearance and agricultural policies driving intensive livestock production.</p>
<p>19. Substantially and progressively increase the level of financial resources from all sources, in an effective, timely and easily accessible manner, including domestic, international, public and private resources, in accordance with Article 20 of the Convention, to implement national biodiversity strategies and action plans, by 2030 mobilizing at least 200 billion United States dollars per year, including by:</p> <ul style="list-style-type: none"> (a) Increasing total biodiversity related international financial resources from developed countries, including official development assistance, and from countries that voluntarily assume obligations of developed country Parties, to developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition, to at least US\$ 20 billion per year by 2025, and to at least US\$ 30 billion per year by 2030; (b) Significantly increasing domestic resource mobilization, facilitated by the preparation and implementation of national biodiversity finance plans or similar instruments according to national needs, priorities and circumstances (c) Leveraging private finance, promoting blended finance, implementing strategies for raising new and additional resources, and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments; (d) Stimulating innovative schemes such as payment for ecosystem services, green bonds, biodiversity offsets and credits, benefit-sharing mechanisms, with environmental and social safeguards (e) Optimizing co-benefits and synergies of finance targeting the biodiversity and climate crises, (f) Enhancing the role of collective actions, including by indigenous peoples and local communities, Mother Earth centric actions and non-market-based approaches including community based natural resource management and civil society cooperation and solidarity aimed at the conservation of biodiversity (g) Enhancing the effectiveness, efficiency and transparency of resource provision and use. 	<p>Adequate, secure funding is essential to meet the target of expanding coverage and increasing efficiency and equity of protected areas and OECMs.</p>

Global Biodiversity Framework Target	Link to Target 3 of the GBF
<p>20. Strengthen capacity-building and development, access to and transfer of technology, and promote development of and access to innovation and technical and scientific cooperation, including through South- South, North-South and triangular cooperation, to meet the needs for effective implementation, particularly in developing countries, fostering joint technology development and joint scientific research programmes for the conservation and sustainable use of biodiversity and strengthening scientific research and monitoring capacities, commensurate with the ambition of the goals and targets of the framework.</p>	<p>Capacity building and knowledge generations are both critical needs for the management of protected and conserved areas.</p>
<p>21. Ensure that the best available data, information and knowledge, are accessible to decision makers, practitioners and the public to guide effective and equitable governance, integrated and participatory management of biodiversity, and to strengthen communication, awareness-raising, education, monitoring, research and knowledge management and, also in this context, traditional knowledge, innovations, practices and technologies of indigenous peoples and local communities should only be accessed with their free, prior and informed consent, in accordance with national legislation.</p>	<p>Information is critical for the management of protected and conserved areas; even traditional areas that have been managed sustainably for generations are now often facing changes due to climate change and other factors. Similarly, ensuring that civil society, politicians and industry leaders are all aware of the benefits of protected and conserved areas is essential for maintaining the political momentum for 30x30.</p>
<p>22. Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by indigenous peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders.</p>	<p>Requirements for FPIC and use of local knowledge in planning and monitoring mean that protected area identification, designation, planning and management will in many countries need to evolve radically from traditional approaches. <i>T3 element: equitable management and recognizing and respecting the rights of indigenous peoples and local communities including over their traditional territories.</i></p>
<p>23. Ensure gender equality in the implementation of the framework through agender-responsive approach where all women and girls have equal opportunity and capacity to contribute to the three objectives of the Convention, including by recognizing their equal rights and access to land and natural resources and their full, equitable, meaningful and informed participation and leadership at all levels of action, engagement, policy and decision-making related to biodiversity.</p>	<p>Through their hiring, management and promotional policies, and through interactions with local communities, well-run protected areas have the opportunity to promote gender equality also in the wider environment.</p>



Executive summary

Executive summary

This document identifies the most effective options for delivery of a target of achieving 30% of land and of ocean in protected areas and other effective area-based conservation measures by 2030 ('30x30'), as set out in the draft Target 3 of the Global Biodiversity Framework (GBF) from the Convention on Biological Diversity (CBD).

A step-by-step guide is given for those in government and elsewhere charged with implementation, if and when CBD draft Target 3 is finalised. The guide covers: a situation analysis, a participatory process to agree on how 30x30 might be implemented, where and how, and legislative, financial, monitoring and reporting needs (tenure, governance, enabling policies, incentives, management, capacity, financing) for the process.



The potential

There is consensus amongst experts that enough natural or near-natural habitat remains to make 30x30 (and draft Target 3 of the CBD) achievable on both land and in the ocean. However, areas continue to be lost and degraded at a rapid rate and existing degradation means that restoration must often be factored into the 30x30 target. Our review demonstrates that under the right conditions 30x30 can be achieved without excessive cost, to the net benefit of environment and human society.

The key elements in achieving 30x30 are presented below.

A range of area-based conservation models: Area-based conservation can include sites under a wide range of governance approaches, managed in many different ways, with the options still expanding.

A business model for 30x30 must address seven questions:

- 1. What to invest in** – state protected areas, privately protected areas, areas managed by Indigenous Peoples and Local Communities (IPLCs), and the new category of “other effective area-based conservation measures” (OECMs) provide many opportunities..
- 2. Where to invest** – whether it is better for a country to improve management of existing sites or to add new areas, and if the latter, where these should be..
- 3. How to maximise the chances of success** – bottom-up initiatives, or participatory processes, are the strongest models for long-term success.
- 4. How to invest** – short-term, project funding risks creating infrastructure without the skills or resources to maintain it. Different funding models are needed.
- 5. What else needs to be in place** – including sustainable management in the wider environment and supportive policies and legislation. We lay out some key requirements.
- 6. How to measure benefits** – convincing the world to invest in 30x30 requires hard evidence that the benefits – such as ecosystem services – outweigh the costs. Achieving 30x30 would support many other targets of the GBF, the Paris Agreement and many Sustainable Development Goals.
- 7. Scaling up** – how the business case for area-based conservation can apply effectively over large areas of global land and ocean.

Choosing the most suitable is complicated but in general:

- **Protected areas** are the strongest choice for places dedicated to biodiversity and/or where the local rightsholders want to ensure the strongest safeguards against, e.g., destructive mining.
 - The best **governance type** of protected area is that which secures resident or directly affected communities' roles and ensures they retain a strong influence over (or in some cases control of) future management, considering national and international biodiversity commitments.
 - The best **management type** is that which maintains an existing system of management in the case of healthy or recovering ecosystems or seeks to address pressures in the case of degraded or degrading ecosystems.
 - **Other effective area-based conservation measures** (OECMs) are the first choice for places where conservation is *not* the main objective but effective biodiversity conservation is a co-objective or a by-product of management.

Indigenous Peoples and Local Communities (IPLCs): As long-term biodiversity stewards, recognising the rights, knowledge and contributions of IPLCs is key to the design and implementation of 30x30. IPLC lands and territories overlap many important biodiversity sites. From a conservation perspective, prioritising sustainable funding for IPLCs appears to be more affordable, financially viable and essential to achieving effective long-term conservation at the scale needed:

- There are already plenty of successful examples and we discuss some in the format of case studies (see appendix 5). Whilst every situation is different, these are models to build on.
- It is important to note that, for the IPLCs involved, conservation is one of a number of objectives, which will likely include tenure security, cultural recognition, capacity building and respect for self-determination.
- Costs will often be lower than for state-run protected areas where land purchase is needed or new systems must be put in place; but may require different approaches and timescales, so that government and donor agencies need to be flexible in budgets and timetables.

Prioritisation and management effectiveness: 30x30 assumes further expansion of area-based conservation. This is a global target; not every country needs to reach 30%, but this assumes some countries will protect over 30%. The target refers both to new areas and improving effectiveness and equity in existing areas. Planning needs to address all these issues. Changing societal values and priorities mean that protected areas and OECMs henceforth must be based on respect for the rights and aspirations of local people and transhumant communities. Numerous tools exist to identify areas of high conservation value and some are highlighted in the report. These provide useful data, but do not automatically equate with the most cost-effective places to implement 30x30. The report concludes that:

- Conservation planning needs to take place in the context of broader considerations of planning at national, landscape and seascape level, with close links to draft Target 1 of the GBF.
- Approaches such as systematic conservation planning (including social and ecosystem service considerations and a broad range of stakeholders) can help on a regional or national basis.
- Assessment of effectiveness, including both social and governance issues and often the use of agreed management standards, is a key part of the process. In countries with high levels of protection, addressing management effectiveness is now the main priority.

Supportive policies: Area-based conservation in the absence of supportive policies in the wider landscape faces serious obstacles. Countries can improve the effectiveness of protected areas and OECMs through associated national-level actions and by governments taking a wider landscape and seascape approach:

- Strengthening IPLC rights and tenure recognition; developing or implementing legislation against wildlife crime, overfishing and unsustainable agriculture; controls on vegetation clearance and pollution and are all needed to provide a supportive environment for area-based conservation.

- At a more local level, buffer zones remain under-used, but can help protected areas survive whilst creating viable livelihood options for local communities and increase connectivity between areas.

Sustainable finance: Finance remains critical to achieving 30x30; the sums are small compared with many government costs and yield high on both security and return on investment. The World Bank estimates that US\$2.7 trillion of financial losses will occur without better nature protection, due to impacts of a degraded environment. The 30x30 goal would make a large contribution to reducing these negative impacts, at a cost of approximately US\$100 billion per year globally. Many integrated financing options and investments are available. Important aspects include moving away from discrete project funding to secure, long-term, commitments. There are also risks in a single funding model, for example, countries reliant on tourism revenue suffered during the COVID-19 pandemic, so multiple funding schemes are required.

- Most funds for protected areas start with taxation and fees at a national level, but other models are available including user pays, payment for ecosystem service schemes, funding by private or international donors and innovative approaches such as reducing a country's debt burden.
- A portfolio approach is recommended, whereby a range of funding options are in place and operating simultaneously, to avoid risks from a single funding stream.

Links between 30x30 and other international targets: Costs of area-based conservation are more than offset by benefits from the ecosystem services they provide, including mitigation of climate change. Many of these costs would otherwise need to be met through other public funding. Investments therefore simultaneously address needs under the CBD, Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC), Land Degradation Neutrality targets of the UN Convention to Combat Desertification (UNCCD), the Ramsar Convention, the UN Sustainable Development Goals, UN Decade on Ecosystem Restoration and a range of forest agreements. Agencies responsible for protected areas and OECMs should report against these multiple benefits and ensure they are fully recognised.

Landscape/seascape approaches: Area-based conservation is a cornerstone of biodiversity conservation strategies but will not work if they are implemented in isolation. Broadscale approaches are needed to integrate area-based conservation within wider landscapes and seascapes. Experience in landscape and seascape approaches is growing. Even if the 30x30 target is achieved, sustainable management of the other 70% of the planet needs to be strengthened, under other GBF Targets such as 1 (system planning), 5 (sustainable use of wild species) and 10 (sustainable management of areas under agriculture, aquaculture and forestry).

Appendices include a range of case studies, showing how countries have been addressing these questions in practice, acronyms, information gaps, some additional tables and sources.

Confusion of terminology

There are several terms used to describe conservation areas. **Protected area** and **other effective area-based conservation measure (OECM)** are both officially defined and appear in international decisions such as the CBD and its GBF. (Note that, however, "protected area" has two definitions, from the CBD and IUCN, which are in practice regarded as equivalent). In addition, the phrase "**protected and conserved areas**" is often used as equivalent to and more succinct than "protected areas and other

effective area-based conservation measures" but this is unofficial phrasing and "conserved area" should not necessarily be considered as equivalent to OECM. Similarly, "**area-based conservation**" is also often used to describe protected areas and OECMs, but again without official designation and some people use this term more loosely to include other area-based approaches that fit into neither protected areas nor OECMs. Standardisation of some key terms is urgently needed.

1. Scope



1. Scope

This guidance document identifies the most effective options for successful delivery of draft Target 3 of the Global Biodiversity Framework (GBF) being negotiated by the Convention on Biological Diversity (CBD).

Target 3 (first draft)¹: *Ensure that at least 30 per cent globally of land areas and of sea areas, especially areas of particular importance for biodiversity and its contributions to people, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures and integrated into the wider landscapes and seascapes.*

There is good evidence that this will radically increase the success of biodiversity conservation.^{2,3} “Success” is measured in ecological, social and economic terms, ideally all three will be met in individual sites, or at least for the system as a whole, but guidance is given on trade-offs where necessary.⁴ Discussion is confined to **protected areas and other effective area-based conservation measures** (OECMs) as defined by the CBD and the International Union for Conservation of Nature (IUCN). Consideration is given to factors that influence area-based conservation, including drivers and conservation interventions. Thirty per cent is global, rather than automatically applying to each country, and covers 30% of land and inland water, and 30% of coastal and marine. Some of the main elements of draft Target 3 are illustrated in Figure 1. A step-by-step guide is given in section 10.1.

Box 1: Cost effectiveness

The briefing for this publication emphasises “cost effective” approaches. What does this mean in practice? Cost effectiveness for businesses relates clearly to outputs, but measurement is more complex in the case of public policies. Here, we take it to mean **delivering beneficial long-term biodiversity conservation, whilst meeting human rights and equity considerations, as efficiently as possible**. (See Box 6, for a note of *equity*.)

What appears to be economically cheapest in the short term may not remain effective for long or produce useful results, and thus be money wasted, like buying a cheap tool that quickly breaks. “Recognising” OECMs over large areas of degraded ecosystem boosts a nation’s percentage reported to the WDPA but may do little for the wider aspirations of the GBF. Handing back territory to Indigenous Peoples

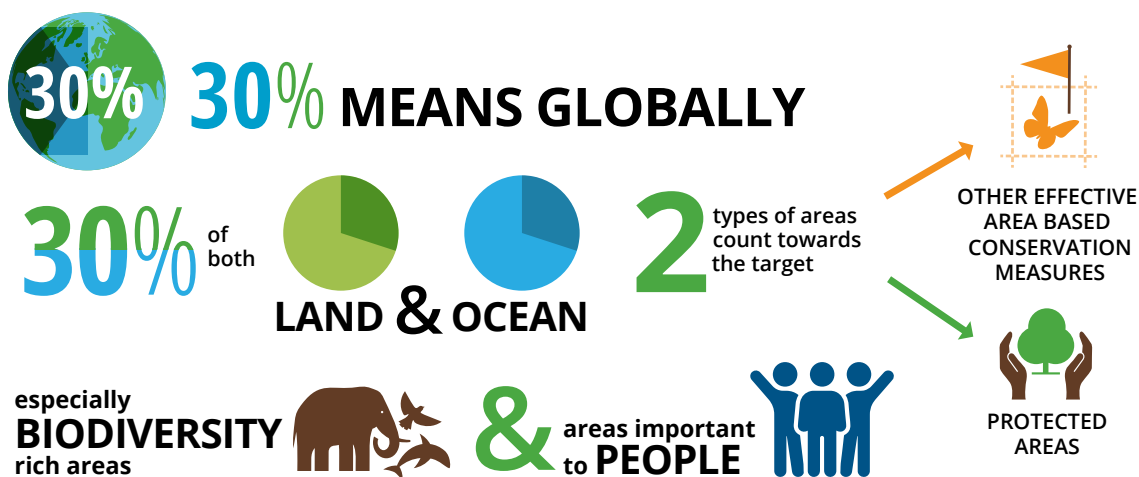
without providing security of tenure and support to counter illegal incursions by miners or loggers will not be effective for either biodiversity or human wellbeing. Costs and benefits need to address both direct and indirect costs, including opportunity costs.

Cost effective means identifying efficient approaches to investment that have a good chance of delivering the desired results over time. There will be both fixed costs (e.g., management and monitoring) and occasional costs (e.g., building a visitor centre). Investment patterns are shifting, towards up-front costs of participatory approaches and support for existing governance structures, with the likelihood that start-up times may extend. There may be a need for incentives to help drive some behavioural changes as well. Some of the implications for donor policies are examined in this guidance.

This guidance addresses a range of questions, which together develop a business case for the most effective (particularly cost-effective) ways of delivering Target 3 in different situations. Analysis draws on case studies, to identify robust strategies. Whilst hopefully of use to anyone interested in responding to the GBF, this guidance is aimed primarily at CBD signatories implementing draft Target 3 and at donors to assist with funding decisions in implementation of the Target. Although a new target, it sits within the general context of the Programme of Work on Protected Areas, which contains a rich range of environmental and social objectives and strategies.⁵

1.1: Is there enough space?

One important practical question is whether the earth contains enough land and ocean in a natural condition to implement 30x30. The answer is a qualified yes: there is enough natural and near-natural habitat remaining although in many parts of the world some level of restoration will be needed. Research into the “three conditions” suggests that 26% of the earth’s surface is still relatively wild,⁶ other studies have found 36.7% *likely* natural,⁷ 56% with low human impact,⁸ 37% of free-flowing rivers,⁹ 40% of remaining forests with high integrity.¹⁰ Most of the world’s biodiversity is concentrated in a relatively few places,¹¹ although concepts of what is “important” biodiversity differ between stakeholders¹² and ecosystem services are more widely spread around natural and semi-natural areas. While these and other studies use different methodologies, assumptions and starting points, there is consensus amongst scientists that enough natural or near-natural habitat remains to make 30%



THE TARGET MUST ADDRESS

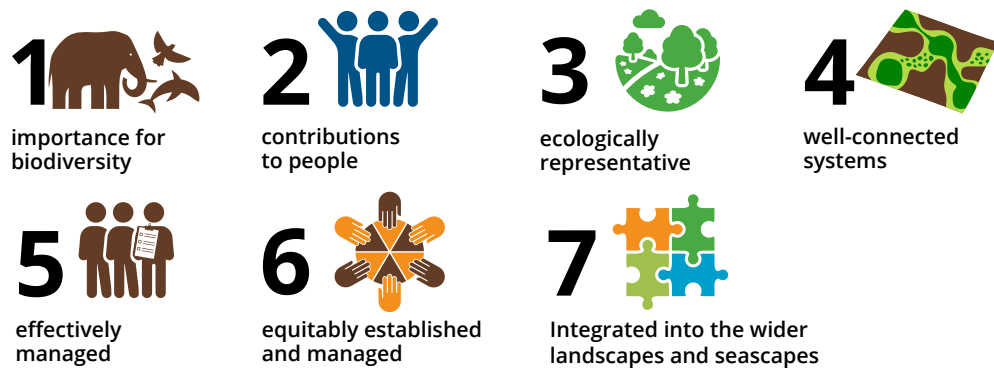


Figure 1: Elements of Global Biodiversity Framework of draft Target 3. (This graphic is based on wording for target 3 in the First Draft of the GBF text, released 5 July 2021.)

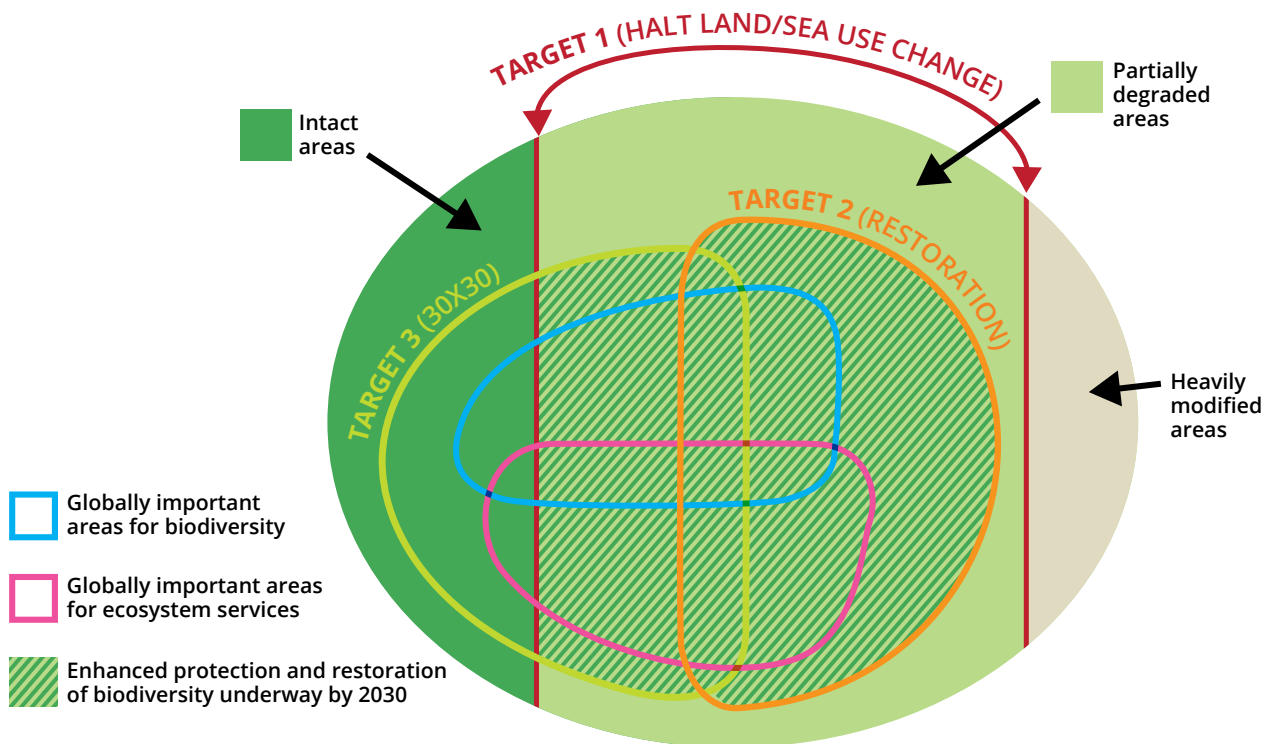


Figure 2: Schematic of Targets 1,2 and 3 of the Global Biodiversity Framework

achievable on land from a theoretical standpoint.^{13,14} However, areas continue to be lost and degraded at a rapid rate.¹⁵ Existing degradation means that restoration needs to be factored into 30x30 in many places. While restoration of lightly modified areas will address many shortfalls, in some regions, particularly in southeast Asia, restoration of heavily modified habitats will be needed to meet overall targets.¹⁶ Marine areas paradoxically may be more of a political stumbling block. There are certainly abundant areas still relatively untouched, if not unfished, but there may be shortfalls in some heavily impacted coastal regions.

These studies all address the potential; they say nothing about the political and social reality. One important challenge is the amount of land and marine-based biodiversity that falls within the territory of certain countries and balancing their understandable desire for development with global conservation priorities. Figure 2 is a schematic representation of the relationship between Targets 1, 2 and 3 of the Global Biodiversity Framework, each of which has a spatial element. Baseline ecological condition is divided into *intact* areas (< 20% of total area, the least modified areas¹⁷) in dark green, *mixed-use/partially modified* areas in light green, and *heavily modified urban/industrial* areas (beige). **Target 1** aims to use spatial planning to prevent land/ocean use change and is represented by red lines signifying the retention of intact areas and prevention of further degradation of modified areas. **Target 2** seeks to restore [20%] of degraded ecosystems, some of which will overlap existing or new protected areas/OECMs and some of which will be used to restore connectivity in the wider land/seascape. **Target 3**, area-based conservation measures, would tend to focus on more intact areas, especially on the interface with modified areas, where conservation management might be most necessary to prevent fragmentation and encroachment. Green hatched areas signify the expected improvement in ecological condition by 2030 if these targets are implemented. In all cases, the most important areas for biodiversity and ecosystem services (blue and pink enclosures; pink areas signify **Target 8**) should be identified and prioritized for target action so that at least all these areas are intact or improving in condition by 2030.



2.

Delivering long term biodiversity conservation: the business case

2. Delivering long term biodiversity conservation: the business case

The costs of implementing all components of 30x30 are estimated at roughly US\$103-178 billion a year,¹⁸ equal to annual losses due to road congestion in the United States,¹⁹ or around 63 days' worth of global state oil industry subsidies.²⁰

Successful area-based conservation draws on diverse governance and management models and arise from, or is developed closely with, people using, or living in or near the sites. Methods often used in the past were in contrast often top-down and monolithic. While recognising the huge achievement in meeting the area target of Aichi 11, the approach to 30x30 needs re-thinking, to give greater emphasis to effectiveness, ecological representation and human rights. A business model must address seven questions:

1. **What to invest in** – state protected areas are the largest global bloc by area and will remain very significant, but other options are emerging. Many combinations of governance type and management approach exist for protected areas, and the new category of “other effective area-based conservation measures” (OECMs) adds many more. OECMs and the land and territories of Indigenous Peoples and Local Communities (IPLCs) are examined with respect to their potential contributions to conservation.



2. **Where to invest** – whether it is better for a country to improve management of existing sites or to add new areas, and if the latter, where these should be. Smaller, strategically located sites may be more effective than large, sub-standard, poorly managed sites that do not deliver tangible outcomes on the ground. A decision tree and a guide to a range of data sources are provided that can help chart a way to make smart decisions about the capacity needs and location of protected areas and OECMs.

Questions 1 and 2 influence each other; choices (particularly of OECMs) are not dictated solely by biodiversity objectives and conservation often needs to be balanced against social needs and priorities.

3. **How to maximise the chances of success** – top-down decisions and forcible removal of people are not appropriate responses to the biodiversity crisis. Bottom-up initiatives, or participatory processes, are the strongest models for long-term success.²¹ This influences the way that time and money are invested, requiring changes in donor policies, funding, monitoring and reporting. We give recommended steps both to agree on a new protected area or OECM and to improve existing protected areas.
4. **How to invest** – short-term, project funding risks creating infrastructure without the skills or resources to maintain it. We outline different funding models, look at their strengths and weaknesses, and provide a guide to selection for a particular system.
5. **What else needs to be in place** – area-based conservation is the cornerstone of successful biodiversity conservation but it needs support, including sustainable management in the wider environment and supportive policies and legislation. We lay out some key requirements.
6. **How to measure benefits** – convincing the world to invest in 30x30 requires hard evidence that the benefits outweigh the costs. Protected areas and OECMs also deliver many ecosystem services, so costs can be balanced against benefits to food and water security, disaster risk reduction and climate stabilisation. We show how achieving 30x30 would support many other targets of the GBF, the Paris Agreement and many Sustainable Development Goals.
7. **Scaling up** – individual projects are not enough. Clear guidance is needed about how the business case for area-based conservation can apply effectively over large areas of global land and ocean.

Practice tells more than theory. Throughout this guidance document, we include thumbnail case studies of innovative approaches to support 30x30. We have also, for this study, developed a new analytical system and applied this to a range of protected area approaches, to show successful business models in a wide range of different situations (see Appendix 1). There is still a lot to be learned and some information gaps are identified in Appendix 3.





3.

Area-based conservation establishment

3. Area-based conservation establishment

Area-based conservation can include sites under a wide range of governance approaches, managed in many different ways, with the options still expanding. This section summarises the choices and gives advice about how to select governance and management fit for purpose in different situations.

Target 3 is focused on protected areas and OECMs, including a wide range of management approaches under many types of governance, all of which can incur different costs at different stages in development.

3.1 Protected areas

The CBD defines a protected areas as: “a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives”.²² IUCN has another definition: “A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values”.²³ There is tacit agreement that the two are equivalent,²⁴ so countries can refer to IUCN guidelines, including for marine,²⁵ in understanding what these mean in practice. However, the details of what does and does not “count” as a protected area are determined by national policy and laws. The definition is expanded by six **management categories** (one with a sub-division), summarised in Table 1 and recognised by both IUCN and the CBD.²⁶

Table 1: IUCN management categories of protected areas

No.	Name	Description
Ia	Strict nature reserve	Strictly protected for biodiversity and also geomorphology. Often small, e.g., <ul style="list-style-type: none"> ■ Offshore seabird breeding islands ■ Sacred mountains and lakes
Ib	Wilderness area	Usually, large unmodified or slightly modified areas, retaining their natural character. Often territories of Indigenous Peoples, whose livelihood needs continue to be met, e.g., <ul style="list-style-type: none"> ■ Large areas of roadless tundra ■ Remote mountain or wetland areas with limited access and little human use
II	National Park	Large natural or near-natural areas with large-scale ecological processes and typical species and ecosystems, with sustainable recreational opportunities, e.g., <ul style="list-style-type: none"> ■ Areas of tropical savannah suitable for wildlife watching ■ Large areas of tropical forest with little or no human habitation
III	Natural monument	Areas set aside to protect a natural monument, which can be e.g., a landform, sea mount, geological feature or a living feature, and often small, e.g., <ul style="list-style-type: none"> ■ Sacred mountains, unusual rock formations ■ Sea mounts
IV	Habitat/species management	Areas to protect particular species or habitats. Many will need regular, active interventions to meet the needs of these species or habitats, e.g., <ul style="list-style-type: none"> ■ Traditionally managed coppice woodland ■ Small areas of wetland with rare, associated flora and fauna
V	Protected landscape or seascape	Areas where the interaction of people and nature over time has produced a distinct character with significant ecological, biological, cultural and scenic value, e.g., <ul style="list-style-type: none"> ■ Traditional farming or grazing areas with high associated biodiversity
VI	PA with sustainable use	Areas which conserve ecosystems, together with associated cultural values and traditional natural resource management systems, e.g., <ul style="list-style-type: none"> ■ Rubber tapping in tropical forest ■ Low-level, sustainable fishing in marine areas

The categories are only applicable if the site *also* meets the IUCN and CBD protected area definitions. Categories are based around the primary management objective(s), summarised in Table 1, which should apply to at least three-quarters of the area: the *75% rule*. Although a part of the protected area can be used for other purposes (e.g., tourism infrastructure or existing settlement), management here should not undermine or interfere with the conservation goals. The management categories are applied with a typology of four **governance types** defined by IUCN – a description of who holds authority and responsibility,²⁷ see Table 2.

Although state protected areas cover the largest area globally (with some under claim by Indigenous Peoples), there is increasing opportunity for protection by Indigenous Peoples, Local Communities, individuals, faith groups, ecotourism ventures, companies, local government trusts and others.

The IUCN definition is backed by several principles, including “*Only those areas where the main objective is conserving nature can be considered protected areas; this can include many areas with other goals as well, at the same level, but in the case of conflict, nature conservation will be the priority*” and “*The definition and categories of protected areas should not be used as an excuse for dispossessing people of their land.*”²⁸

3.2 Other effective area-based conservation measures (OECMs)

In 2010, Aichi Biodiversity Target 11 from the CBD included a new term: “conserved through ... systems of protected areas **and other effective area-based conservation measures...**” (authors’ emphasis). IUCN was asked to define an OECM. CBD Signatories agreed a definition in 2018 at the 14th Conference of Parties:²⁹ “*A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values.*” This covers three cases:³⁰

1. ‘**Ancillary conservation**’ - areas delivering *in-situ* conservation as a by-product of management, even though biodiversity conservation is *not* an objective (e.g., some military training grounds)
2. ‘**Secondary conservation**’ - active conservation of an area where biodiversity outcomes are only a *secondary* management objective (e.g., some conservation corridors).
3. ‘**Primary conservation**’ - areas meeting the IUCN definition of a protected area, but where the governance authority does not wish the area to be reported as a protected area.

Table 2: IUCN protected area governance types

	Name	Description
A	Governance by government	<ul style="list-style-type: none"> ■ Federal or national ministry/agency in charge ■ Sub-national ministry/agency in charge ■ Government-delegated management (e.g., to a non-governmental organisation – NGO)
B	Shared governance	<ul style="list-style-type: none"> ■ Collaborative management (various degrees of influence) ■ Joint management (pluralist management board) ■ Transboundary management (various levels over frontiers)
C	Private governance	<ul style="list-style-type: none"> ■ By individual owner ■ By non-profit organisations (NGOs, universities, faith groups) ■ By for-profit organisations (individuals or corporate bodies)
D	Governance by Indigenous Peoples and Local Communities	<ul style="list-style-type: none"> ■ Indigenous Peoples’ conserved areas and territories ■ Community conserved areas – declared and run by local communities

OECMs have important implications, for instance for marine conservation,^{31,32} and particularly for the lands and territories³³ of IPLCs.³⁴ OECMs make ambitious conservation goals more feasible,³⁵ by bringing in sites that would be difficult or impossible to designate as protected areas. But they raise concerns, that they could be an easy option for governments wanting to meet international obligations and thus become a form of greenwashing. Further, if OECMs are confined to sites identified because they are *already* conserving biodiversity, nothing will be added to net biodiversity conservation. In theory OECM status should give such sites extra security against future damage, but it is too early to test this hypothesis. OECMs only conserve additional biodiversity if they include areas under restoration, but this option has hardly as yet been tested. A few studies have considered the potential contribution at a national scale,³⁶ but most countries are still just starting to consider the options. There is still sometimes confusion between OECMs and category V protected areas and this is likely to be resolved only gradually as more OECMs are designated.

Meanwhile even at these early stages, governments seem to be interpreting the definition of OECMs in quite different ways. Issues of identification, reporting and monitoring remain a challenge.³⁷ Mainstreaming OECMs onto forestry, rangeland, watershed management areas, military lands and other disparate sites is predicated on either having managers or staff who understand the issues (for instance to coordinate monitoring) or having access to first-rate advice. A significant expansion of OECMs therefore assumes major capacity building in a range of sectors. Figure 3 shows some of the steps needed to choose between a protected area and an OECM.

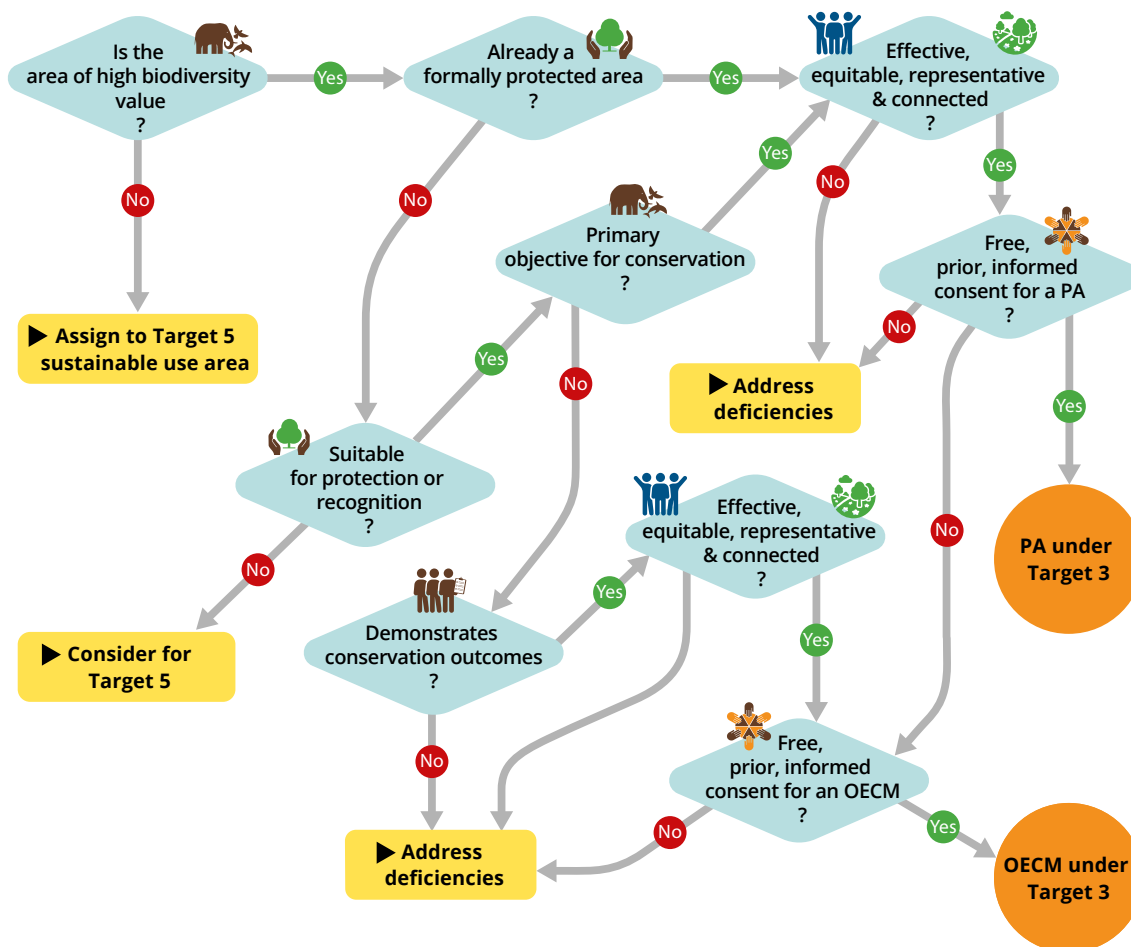


Figure 3: Distinguishing a protected area from an OECM

Box 2: A screening tool for OECMs

The screening tool, developed by IUCN,³⁸ provides initial advice. See Figure 4 for a simplified flow diagram.

Test 1. Ensure that the area is not already recognised and/or recorded as a protected area

Test 2. Ensure that the area has the essential characteristics as defined for OECMs.

1. **Location:** The area must be a geographically defined space. Wider measures for species and/or environment that are not “area-based” fail this test. For example, species-specific national or regional hunting bans and regulations, whale-watching rules, or temporary fishing closures are regional species-specific measures and not *in-situ* area-based conservation.
2. **Sustained governance and management:** The area is governed and managed, and such arrangements are expected to be ongoing and sustained over the long term. There should be a direct causal link between: (i) the area’s overall governance, objective(s) and management and (ii) the *in-situ* conservation of biodiversity over the long-term. Areas where there is neither a governance authority nor any management are not OECMs. Accordingly, an area currently in a natural or near-natural state is not automatically an OECM.
3. **Effective in-situ conservation of biodiversity:** The area delivers the effective *in-situ* conservation of biodiversity, with associated ecosystem functions and services. There should be a clear understanding that the area is effectively conserving native biodiversity and the ecosystem processes that support biodiversity. This may be achieved through a variety of governance types and management practices, including those associated with cultural, spiritual, socio-economic and other locally relevant values. Areas that deliver conservation outcomes only over the short term or areas that are *intended* or offer *potential* to conserve nature but do not yet deliver conservation outcomes do not qualify as OECMs.
4. **Status:** The area is free of environmentally damaging activities and any threats to biodiversity can be managed under the existing governance and management systems.

Test 3. Ensure that the conservation outcome will endure over the long-term. This refers to the *probability* of the conservation outcome being maintained over the long term through legal or other effective means (such as, customary laws or formal agreements with landowners). This test emphasises the difference between current conservation efforts that can be reversed easily and an OECM that can sustain conservation outcomes over the long term.

Test 4. Ensure that an *in-situ* area-based conservation target, as opposed to a sustainable use target, is the right focus for reporting. *In-situ* conservation of biodiversity is one of the three primary objectives of the CBD. Protected areas and OECMs are the primary means of achieving *in situ* conservation. Area-based measures may also be applied to achieve sustainable use of the components of biodiversity. Yet it is important not to confuse such measures with *in-situ* conservation. In the post-2020 Global Biodiversity Framework, it will continue to be important to report *in-situ* conservation measures (protected areas and OECMs) against their appropriate targets, and sustainable use measures against theirs.

Areas that pass all four tests can be considered candidate OECMs. The final decision about whether or not a site is an OECM will generally be taken by governments which will then submit information to the United Nations Environment Programme (UNEP) World Conservation and Monitoring Centre (WCMC) World Database on OECMs.

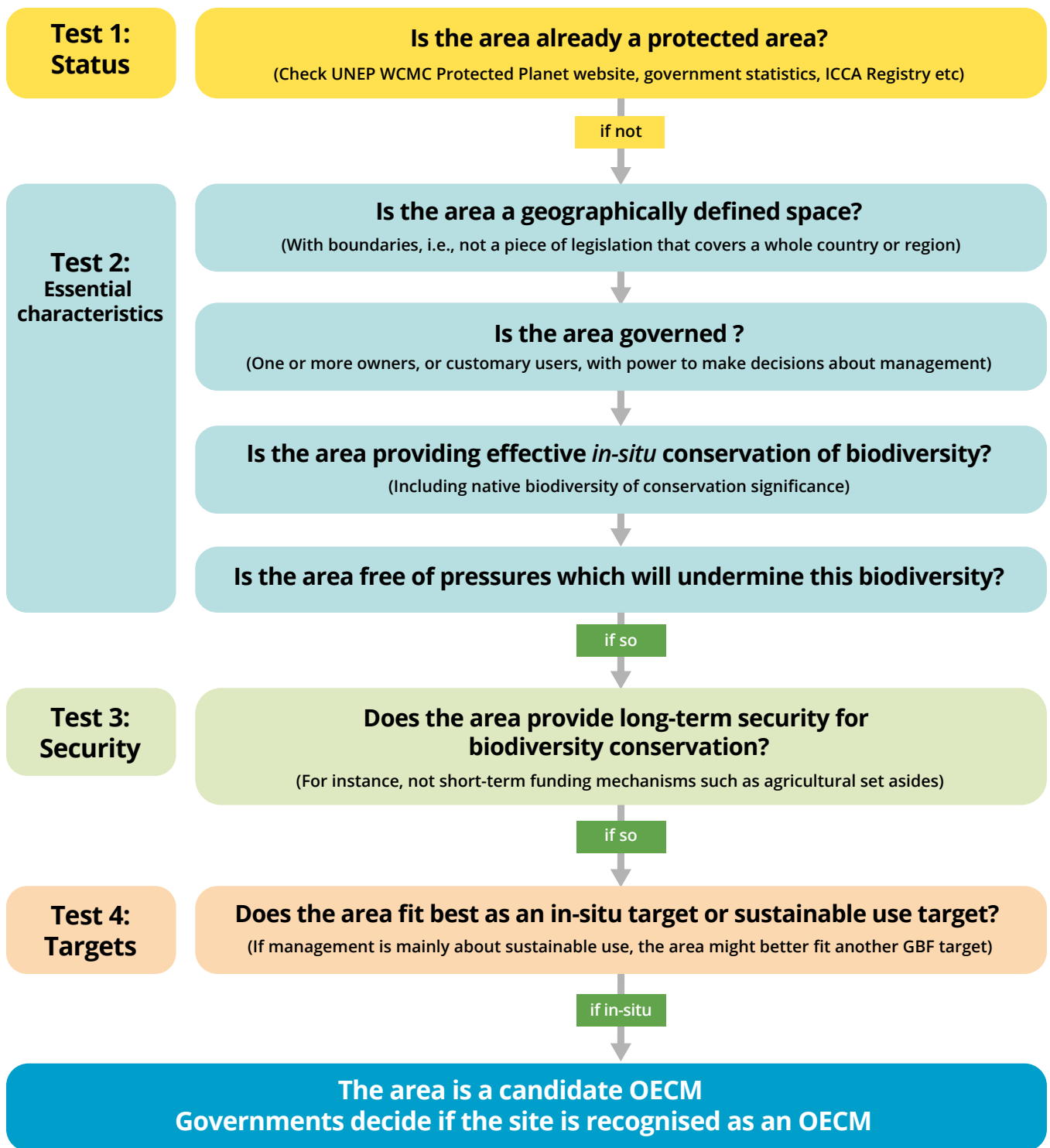


Figure 4: Steps to deciding if an area is an OECM

3.3 Choosing approaches for Target 3

Within protected areas, any governance type can be applied along with any management category. This creates a multitude of combinations. OECMs are also likely to include a wide range of approaches. The choice of management approach influences and is influenced by governance type and tenure, including the existence of any unresolved claims on land and water, and the aims of the governing body; during planning all should be considered together. However, the different approaches are not simply interchangeable, but are influenced by many factors, including particularly the following:

- State of the ecosystem and constituent biodiversity
- Type and status of ecosystem services
- Fragility of the ecosystem and component species
- Recent trends in biodiversity and ecosystem services in the area
- Likely future trends in biodiversity and ecosystem services (including under climate change scenarios)
- Existing human settlements in or near the area
- Use of the area by local settled communities and nomadic communities
- Management of land and water and prevailing economic activities
- Demographic trends, including in- and out-migration
- Existing land and natural resource tenure including any disputes
- The existence of or potential for benefit-sharing mechanisms
- Direct and indirect pressures on the area

Approaches are determined by the needs and decisions of rightsholders and the opinions of stakeholders, particularly people living in or near the area, and others affected by the ecosystem under consideration. For sites without human presence or use (some privately protected areas, large areas devoid of human presence) decisions can be made solely relating to the management regime best for the survival of the ecosystem. In most cases, conservation must be integrated with human rights, needs and wants.

From the perspective of biodiversity, decisions about the management approach in a protected area or OECM pivots on whether current management has positive or negative impacts on species and ecosystems, shown in Figure 5. If people are using an ecosystem in ways that allow the survival of significant biodiversity and ecosystem services, protected area status should not seek to change that relationship, but rather to retain and protect it from outside damage (for example through an OECM or IUCN category V protected landscape/seascape). If current management is damaging biodiversity, changes in approach may be needed.



3.4 Policy brief

There are no simple answers to the question of which approach to choose. But in general terms:

- **Protected areas** are the strongest choice for places dedicated to biodiversity and/or where the local rightsholders want to ensure the strongest safeguards against, e.g., environmentally destructive mining.
 - The best **governance type** of protected area is that which secures resident or directly affected communities' roles and ensures they retain a strong influence over (or in some cases control of) future management, taking into account national and international biodiversity commitments.
 - The best **management type** is that which either maintains an existing system of management in the case of healthy or recovering ecosystems or seeks to address pressures in the case of degraded or degrading ecosystems. Some examples are given in Table 1 above.

- **OECMs** are the first choice for places where conservation is *not* the main objective but which provide effective biodiversity conservation as a by-product or secondary objective of management. At the moment OECMs are all identified by governments from land and water under existing management systems and listed in the new World Database on OECMs. This could (depending on national laws and policies) provide such areas with some extra security from harmful activities but does not result in a net gain for biodiversity, because by definition they were already conserving biodiversity. At some stage, the process of creating OECMs through restoration is likely to become increasingly important.
- Although it is still too early to make precise predictions, it is likely that the expansion of area-based conservation after the adoption of the GBF will have far more emphasis on non-state protected areas than before, including both IPLC lands and a range of privately protected areas (PPAs). The latter play key roles in providing options for rapid responses to immediate threats, often capable of moving faster than state conservation mechanisms to secure land, and also bring many more stakeholders into active conservation.³⁹ Privately protected areas include those run by non-profit trusts, by commercial ecotourism ventures, companies, religious institutions, research bodies and individuals.^{40,41}

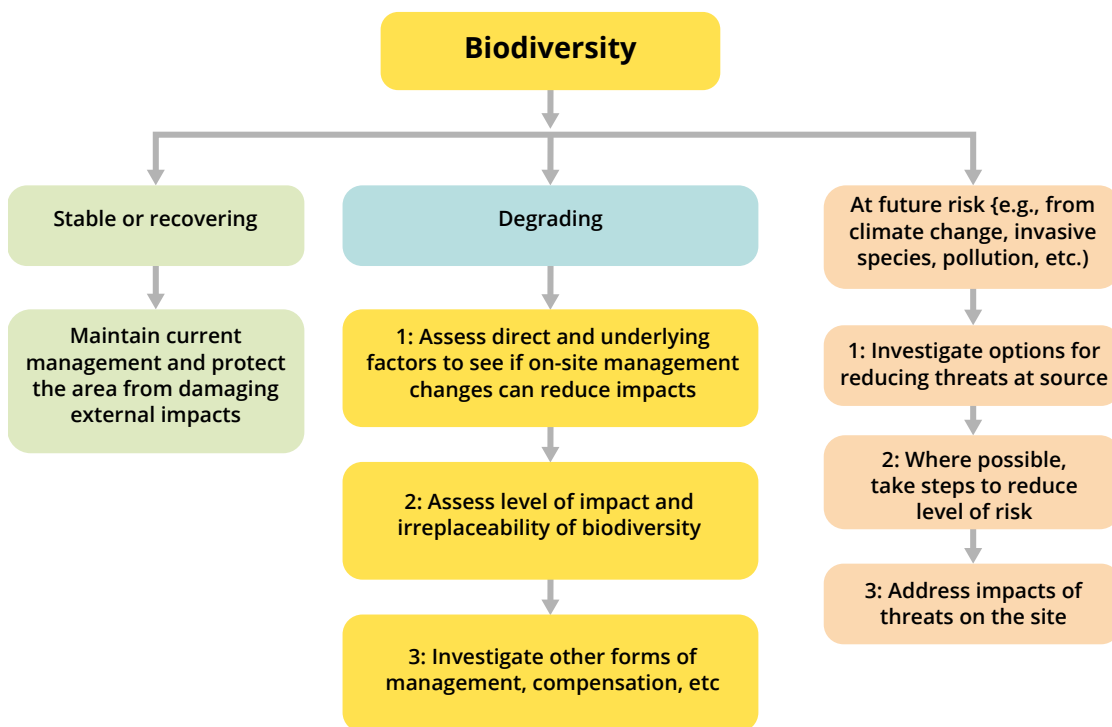


Figure 5: Choices about management approaches in protected areas



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Box 3: Marine protected areas

Marine protected areas (MPAs) are almost certainly the fastest growing protected area type in the world in terms of coverage. But they start from a much smaller percentage coverage, and therefore face challenges in meeting the 30x30 target. Most existing MPAs are coastal or nearshore, within national jurisdictions, and progress has been much slower and harder to achieve on the high seas.⁴² Yet it is estimated that conservation of 90% of marine species will require cross-border collaboration.⁴³

MPAs also exhibit enormous variation in terms of size, location and management. They include long-term, traditional community-led management systems that are now being incorporated into national protected area networks,⁴⁴ along with many newly designated areas agreed by governments, local communities and sometimes, tentatively, by governments in the high seas. Some of the largest protected areas in the world are marine,⁴⁵ such as Papahānaumokuākea in US marine waters.⁴⁶ Some small island states have also embraced MPAs as a tool for sustainable management, such as the government of Palau.⁴⁷ Many MPAs are not wholly marine: large protected areas can sometimes contain terrestrial, freshwater and marine components. International law of the sea has an effect, particularly the UN Convention on the Law of the Sea (UNCLOS). It determines the right of passage of ships, for example in territorial waters. The State may adopt restrictions with the intent to conserve living resources of the sea. Additionally, many MPAs still allow some types of fishing. This can vary from supporting sustainable artisanal fisheries, which is usually possible to integrate with conservation, to remaining open to industrial activities such as bottom trawling, which leave a substantial proportion of biodiversity open to degradation. Some MPAs only protect part of the marine ecosystem, e.g., open water but not the seabed, and sometimes protection only covers parts of the water column.⁴⁸ But research shows that to be fully effective, whole site and stricter protection is more effective.⁴⁹

The readiness with which local or resident human communities accept MPAs also differs around the world. Some coastal cultures feel very comfortable with the concepts of protection, while others do not. In consequence, some MPAs are welcomed by the people who live there while others are resented, opposed and undermined.⁵⁰ More effective approaches to advancing social equity in marine conservation have been identified as critical steps in advancing 30x30 in oceans and coasts.⁵¹

Management of marine areas for conservation has lagged far behind similar efforts in on land.⁵² There are many reasons for this, including the status of marine areas beyond national jurisdiction as a “commons”, the lack of visibility of marine species, effectiveness and costs of monitoring⁵³ and deep-seated beliefs that the resources of the sea are effectively limitless.⁵⁴ In particular, the relationship between the fishing industry and MPAs has often been tense. There is good evidence that strategically placed MPAs can lead to a net increase of fish in surrounding waters through spillover,^{55,56} without disadvantaging fisheries.⁵⁷ with surplus individuals coming from protected spawning sites, allowing young individuals to mature and by maintaining a proportion of the older, much more fecund, individuals in a population.^{58,59,60,61}

OECMs offer opportunities for increasing the total area under conservation, although they have also raised challenges in terms of interpretation, with sharp divergence of opinion between stakeholder groups about what should or should not be recognised as a marine OECM. Many traditional fisheries management systems, such as some Locally Managed Marine Areas, appear to be suitable as OECMs (other LMMAs are protected areas). This debate continues.

Box 4: Inland water representation in protected and conserved areas

Inland waters cover less than 2% of the Earth's surface, but support 12% of known species,⁶² and over half of all fish species, with high rates of endemism.⁶³ They are critical for human livelihoods and the ecosystem services they provide are often irreplaceable.⁶⁴ They include drinking and irrigation water,⁶⁵ food security (e.g., rice paddy⁶⁶ and 40% of global fish protein),⁶⁷ disaster risk reduction, pollution control⁶⁸ and carbon sequestration and storage. For example, Lake Skadar, straddling Montenegro and Albania, is a protected area generating 80 kg fish/ha/year, earning US\$2.1 million a year.⁶⁹ 60% of Cambodia's animal protein comes from fish in Tonle Sap Lake, a biosphere reserve.⁷⁰ Inland waters also provide learning and inspiration, recreation, spiritual and sacred values,⁷¹ mental and physical health⁷² and a sense of place.⁷³ For example, Loch Garten Nature Reserve in Scotland attracts around 22,000 visitors a year generating approximately US\$3.3 million each year, along with a wide range of non-material values.⁷⁴

Yet inland waters have lost proportionally more species than land or marine ecosystems,⁷⁵ with almost one in three known species at threat of extinction, due to a connectivity loss, conversion, drainage, alteration to flow, pollution and invasive species. Monitored freshwater species have declined by an average of 84%,⁴ e.g., migratory fish have declined by 76%⁷⁶ and aquatic megafauna by 88%.⁷⁷ Habitat loss affects 80% of threatened freshwater species.^{78,79} Less than a fifth of the world's preindustrial wetlands remain, with further, imminent threats from megaprojects.⁸⁰ Plans for dams threaten the free-flowing status of 260,000 km of rivers globally.⁸¹ Pesticides⁸² and fertilizers⁸³ pollute, and invasive species disrupt ecosystems.⁸⁴ Peatlands hold ~600 Gt of carbon,⁸⁵ yet 50 million hectares of peat have been drained, responsible for ~4% of anthropogenic greenhouse gas emissions. By 2100, this could grow to 12-14% of the emission budget needed to keep global warming at less than 1.5°C.^{86,87} Climate change itself causes damage,⁸⁸ particularly in rivers⁸⁹ and riparian zones,⁹⁰ and can shift wetlands from carbon sinks to carbon sources.⁹¹

Inland waters are poorly represented in protected area systems,⁹² yet integrated planning provides direct benefits.⁹³ The dynamic, connected nature of inland waters requires tailored approaches.⁹⁴ In addition to well-designed and effectively managed protected and conserved areas, innovative thinking is needed to achieve representation of inland waters in 30x30, including community-managed river reserves and religious sanctuaries, and Rights of Rivers, already applied legally to several rivers around the world.^{95,96,97}

Estimated global baseline and pathway for measuring progress

In recent years, several methods have been proposed for measuring global coverage of inland waters protection.^{98,99,100,101} Collectively, they provide valuable indicative estimates. **Globally, at least 15% of the extent of inland waters are covered by protected areas.** These baselines are considered to be only indicative for several reasons: 1) global inland waters datasets are incomplete, especially for wetlands; 2) the approaches do not incorporate upstream, downstream, and catchment influences, which are known to be critical to freshwater ecosystem health; 3) the calculations include all protected areas, although due to uncertainty about relevant management objectives in the World Database of Protected Areas, we cannot currently determine which protected areas that include inland waters actually offer freshwater conservation. OECMs have strong potential to confer protection to inland waters, depending on their design and management, and improved OECM datasets may lead to increased coverage calculations. A consortium of more than 12 organizations, including two IUCN bodies, is currently working to resolve these key questions and propose a methodology track progress toward draft Target 3 in advance of COP15.



4.

Territories of Indigenous Peoples and Local Communities



4. Territories of Indigenous Peoples and Local Communities

Indigenous Peoples' territories and local community lands overlap many important biodiversity sites. As long-term biodiversity stewards, recognizing the rights, knowledge and contributions of Indigenous Peoples and Local Communities (IPLCs) is key to the design and implementation of 30x30. The extent to which they can and will continue to play a role in biodiversity management is of interest to many governments. This section looks at the pros and cons.

The 30x30 target is only achievable if the rights¹⁰² and territories of IPLCs¹⁰³ are fully integrated.¹⁰⁴ IPLCs hold at least half the world's land, much of it under customary tenure.¹⁰⁵ Indigenous Peoples have tenure rights on at least 38 million hectares, or a fifth¹⁰⁶ to a quarter of the land surface, including ~40% of terrestrial protected areas and ecologically intact landscapes,¹⁰⁷ and at least 36% of intact forests.¹⁰⁸ Their territories have some of the richest biodiversity.¹⁰⁹ They often secure more carbon than adjacent areas, making them key contributors to Nationally Determined Contributions (NDCs) of the UNFCCC.¹¹⁰ These areas can also be contested spaces¹¹¹ in terms of rights¹¹² and tenure¹¹³ and their current and future uses. IPLC territories can contribute to the target as:

- Protected areas
- Other effective area-based conservation measures (OECMs).¹¹⁴

In practice, many IPLC territories are likely to have some of their lands and waters appearing in both these categories. Some associated groupings, such as “**territories and areas conserved by Indigenous Peoples and Local Communities**” or “**territories of life**” (ICCAs), can also be protected areas or OECMs, or occasionally neither, based on self-determination practises and preferences.

IPLCs have rights to cultural recognition and full and effective participation.¹¹⁵ Many hold diverse knowledge systems¹¹⁶ that generate effective conservation through active, collective stewardship¹¹⁷ and the transmission of intergenerational knowledge.^{118,119} This is increasingly integrated with science-based methods, e.g., the “two-eyed seeing” approach¹²⁰ in Canada driven by community-led monitoring such as Indigenous Guardian Programmes.¹²¹ To be successful, community monitoring often requires certain incentives and may have to overcome historical tensions between the state and Indigenous Peoples.¹²² Engagement by IPLCs in conservation is an essential step to exercise recognised rights over their lands, territories and resources.¹²³ In this context, six questions are relevant:

1. Under what circumstances are IPLCs most effective at conserving biodiversity in their territories?
2. Under what conditions do IPLCs want to integrate their own management systems with broader conservation strategies?
3. What conservation designations would best elevate IPLC rights and institutions?
4. What reforms are needed to enable IPLCs to continue conserving biodiversity and ecosystem services on their territories?
5. What will it cost to support the conditions to make this work?
6. What safeguards and operating principles/standards are needed to ensure IPLCs are not negatively impacted by the delivery of 30x30?

4.1 Under what circumstances are IPLCs most effective at conserving biodiversity in their territories?

There is evidence that terrestrial^{124,125,126} and marine¹²⁷ areas under the control of Indigenous Peoples or other community management undergo less vegetation change (such as deforestation or forest degradation) than elsewhere, and sometimes do better than state-run protected areas.¹²⁸ For example, a study of community forests in 51 countries found environmental conditions increased in 56% and decreased in 32%.¹²⁹ Adaptive, place-based, and local governance of resources provides a powerful mechanism for achieving effective and socially just environmental stewardship.¹³⁰ Ecosystem recovery is evident in many Locally Managed Marine Areas,¹³¹ and Indigenous Peoples have major roles in managing inland wetlands.¹³² Traditional ecological knowledge and management inform conservation,¹³³ making it important to integrate such knowledge and experience into management strategies.¹³⁴ A systematic review found conservation projects with Indigenous Peoples in a strong decision-making role are consistently more successful than those in the hands of outside groups that seek to supersede customary institutions.¹³⁵ The conditions for mitigation of climate change are also improved.^{136,137} Yet poorly managed, top-down, externally driven conservation approaches are still often applied leading to or exacerbating conflicts that obstruct conservation effectiveness over the long term.

Numerous studies also highlight variation in the success of Indigenous and community conservation management, with examples of both good practice and areas for improvement.^{138,139,140} Political pressures and economic, environmental and social change, including prior conservation initiatives, can all undermine long-term management systems.^{141,142} Where IPLCs are socially or physically fragmented, with disappearing traditions, work may be needed to redefine or rekindle the original close connection with nature. This is particularly likely along the development frontier. Therefore, solutions do not just entail decentralisation of control, but need support to reinforce, strengthen or revitalise local institutions through better resources, inter-institutional collaboration and supportive policies and legislation.¹⁴³ Where necessary, this will include support to address activities that undermine conservation (illegal mining, logging and clearing activities, etc). Capacity building will also be needed in local and central government to ensure support for IPLCs.

4.2 Under what conditions do IPLCs want to integrate their own management systems with broader conservation strategies?

Naturally this differs between and within cultural groups, some wish to follow different pathways. Many Indigenous Peoples have strong cultural and spiritual links with their territories¹⁴⁴ and the high biodiversity in many such territories suggests management benefits biodiversity.¹⁴⁵ Drivers of ecosystem change including biodiversity loss and climate change, also have a significant negative impact on IPLCs that rely on lands and water for their economy, livelihoods and culture. Many IPLCs have an interest in being involved in various mechanisms for the conservation and protection of biodiversity including and not limited to protected areas and OECMs. But including territories in national designations and conservation databases can be seen by IPLCs as ceding control or risking adverse external influence. Networks such as the ICCA Consortium can help navigate options and provide a local-national-international link providing respect, recognition and trust.

Encouragingly, there has been a move towards the recognition and self-declaration of Indigenous Protected Areas (IPAs) in many places, suggesting a sustained interest in retaining vibrant, diverse ecosystems, linked to self-governance. Examples include Canada¹⁴⁶ and Australia,¹⁴⁷ the latter with 74 million ha declared since 1997, making up 46% of the protected area system.¹⁴⁸ An analysis in Australia¹⁴⁹ identified drivers of IPAs: customary obligations, Indigenous leadership, land management markets (e.g., carbon credits), recognition of land rights and the chance for investments in environmental and cultural heritage.

4.3 What conservation designations would best support IPLC rights and institutions?

There is no blueprint, but approaches must fit local IPLC rights, territories, needs and wishes. IPLC territories exist under all IUCN management categories and as OECMs, although some management approaches are more common. Some strictly protected areas (IUCN management category Ia, sometimes III – see Table 1) protect sacred natural sites with important biodiversity in cooperation with faith groups. Sustainable use reserves (category VI) protect more-or-less natural ecosystems used for activities such as rubber tapping. Protected landscape and seascapes (category V) are areas with high biodiversity co-existing in long-modified ecosystems and are used in community lands, for example in Madagascar and Bhutan. UNESCO biosphere reserves have provided additional recognition for some IPLCs. OECMs are still so new that it is hard to provide overall evidence, but they are widely expected to be very significant in IPLC territories.¹⁵⁰

4.4 What reforms are needed to enable IPLCs to continue conserving biodiversity and ecosystem services on their territories?

Multiple routes exist to integrate lands and waters in IPLC territories into conservation networks, including:

- Formally through policy and legislative change, as in Australia, creating a legal framework and supportive resources to recognise such areas under law and promote more effective and equitable conservation.
- Formal government recognition of tenure rights of IPLC-led OECMs or ICCAs
- Informally, through self-declaration outside the legal protected area system, as with many ICCAs and Locally Managed Marine Areas (LMMAs) in the Pacific. Recognition as a protected area under IUCN includes “*legal and other effective means*”¹⁵¹ so such areas can be included in national protected areas and OECMs if the government agrees.
- Within the state protected area system in both new and existing protected areas, to increase the role and decision-making power of IPLCs through various co-management agreements between IPLCs and governments; this is becoming common in Canada.¹⁵²
- Through land purchase and transfer of rights as a community or privately protected area.

Indigenous Peoples, local communities and governments need to work together to determine which route to follow (possibly several, or a staged response).¹⁵³ The ICCA Consortium identifies three factors defining ICCAs: (i) a close and deep connection between people and territory and (ii) a functioning governance system, leading to (iii) conservation of nature and community wellbeing.¹⁵⁴ Donor governments and NGOs have several options for providing support. Key enabling factors include IPLC ownership and/or security of tenure,¹⁵⁵ political support (some progress is often possible in its absence), investment in capacity building and access to appropriate funding. Working to build trust in the process¹⁵⁶ through collaboration with partners is an important element of success.¹⁵⁷

4.5 What will it cost to support the conditions to make this approach work?

Bringing IPLC territories into the conservation estate is not a zero-cost option, although investment is likely to be used for different activities than in conventional protected areas. Currently, only 3% of a lower estimate of US\$8 billion needed for IPs' and LCs' tenure and forest management in 24 top countries is being met,¹⁵⁸ further funding will be needed for IPLC management into the future. Funding for customary rights-holders was equivalent to less than 1% of official development assistance for climate change between 2011 and 2020.¹⁵⁹ The issue of providing security of tenure, widely seen as critical to success, is relatively cheap for governments but very expensive if IPLCs have to operate alone.¹⁶⁰ Costs of securing Indigenous land, including establishment of a supportive institutional framework and opportunity costs, have been estimated at \$45/ha in Bolivia, \$68/ha in Brazil and \$6/ha in Colombia for a 20-year period. These costs are at most 1% of the value of seven ecosystem services from these lands.¹⁶¹ Significant changes are already happening, with increased financial resources for IPLC-led stewardship. This will often require changes within government policies and in donor rules and priorities to help funds flow to the right places.¹⁶² Financing must be sensitive to the conditions in the community, diverse, secure and flexible (to cater for new opportunities). Investment will be needed in participatory processes, to uphold human rights and social safeguards, in capacity building and often some form of compensation or support, such as Payment for Ecosystem Service schemes.

4.6 What safeguards and operating principles/standards are needed to ensure IPLCs are not negatively impacted by the delivery of 30x30?

The emphasis on human rights and conservation is increasing. The application of Free, Prior and Informed Consent (FPIC) should ensure that IPLCs support approaches taken in their territories, although careful scrutiny is needed from governments, donors and NGOs to ensure the FPIC process is followed correctly.¹⁶³ The voluntary *Akwé Kon Guidelines*¹⁶⁴ are principles for carrying out assessments

Box 5: Participation and consultation

Conservation planning is undergoing an evolution from a top-down process led by governments and outside experts to a more bottom-up process led by, or at least involving and heavily influenced by, local rightsholders and stakeholders. This change is far from complete and differs by place, political system and culture. "Participation" includes a range of conditions.¹⁶⁶ At its most basic level, it depends on the sharing of information in accessible and transparent formats with those who may be impacted by a planning process. Beyond simple sharing of information, participation begins when potentially impacted people are invited to an on-going process of exchange, both of information and of perspectives.

"Full and effective participation" requires that decisions made are demonstrably impacted by the views and opinions of participants in the planning process, and that participation was facilitated through language,

meeting format and duration of exchange. Then there are various levels of consultation and power sharing all the way to recognising and supporting local and independent authority systems.¹⁶⁷ The extent and type of participation often depends on the willingness of governments and other entities to share power. It is influenced by factors such as governance quality and rule of law;¹⁶⁸ handing power to local communities in the absence of strong community structures can lead to further inequity. But there is clear evidence that conservation led or supported by those immediately affected is both more successful and more durable.¹⁶⁹

Getting participation right – ensuring human rights^{170,171} and equity, reaching a balance between local and global needs and ensuring social safeguarding¹⁷² – is probably the largest single challenge in achieving 30x30.

on IPLC territories and sacred sites. Any implementation of 30x30 should follow the UN's 16 principles on human rights and the environment.¹⁶⁵ They advise States to comply with obligations to Indigenous Peoples and members of traditional communities by:

- Recognizing and protecting their rights to the lands, territories and resources that they have traditionally owned, occupied or used.
- Consulting with them and obtaining their free, prior and informed consent before relocating them or taking or approving any other measures that may affect their lands, territories or resources.
- Respecting and protecting their traditional knowledge and practices in relation to the conservation and sustainable use of their lands, territories and resources.
- Ensuring that they fairly and equitably share the benefits from activities relating to their lands, territories or resource.



4.7 Policy brief

From a conservation perspective prioritising funding in favour of IPLCs appears to be more affordable than other options, financially viable, and probably essential to achieve effective long-term conservation at the scale needed:

- There are already plenty of successful examples and we discuss some in the case studies (see appendix 5), whilst every situation is different, these are models to build on
- It is important to note that in these situations, for the IPLCs involved, conservation is one of a number of objectives, which will likely include tenure security, cultural recognition, capacity building and respect for self-determination.
- Costs will often be lower than in the case of conventional protected areas; these costs may require different approaches and timescales, so that government and donor agencies need to be flexible in budgets and timetables.

Box 6: Equity

Equity is gaining prominence in global agreements. But the meaning of equity in practical terms is unclear. A key decision of CBD COP14 in 2018 provided clarification in the context of conservation of protected and conserved areas:¹⁷³ *The concept of equity is one element of good governance. Equity can be broken down into three dimensions: recognition, procedure and distribution: "Recognition" is the acknowledgement of and respect for the rights and the diversity of identities, values, knowledge systems and institutions of rights holders and stakeholders; "Procedure" refers to inclusiveness of rule and decision-making; "Distribution" implies that costs and benefits resulting from the management of protected areas must be equitably shared among different actors.* This understanding is based on the concept of environmental justice (EJ).^{174,175} A framework of eight principles of equitable governance has now been developed, based on IUCN's principles and considerations for good PA governance,¹⁷⁶ which was endorsed by CBD COP14.

Equity recognition

- Recognition and respect for the rights of rights-holders
- Recognition and respect for all relevant actors¹⁷⁷ and their knowledge¹⁷⁸

Equity: procedure

- Full and effective participation of all relevant actors in decision-making
- Transparency, information sharing and accountability for actions/inactions
- Equitable governance principles for protected areas and conserved areas
- Access to justice including effective dispute resolution processes
- Fair and effective law enforcement (or, more broadly, the rule of law)

Equity: distribution

- Effective mitigation of negative impacts on relevant actors
- Benefits equitably shared among relevant actors

5.

Prioritisation and management effectiveness



5. Prioritisation and management effectiveness

30x30 assumes further expansion of area-based conservation. This is a global target; not every country needs to reach 30%, but this assumes some countries will protect over 30%. The target refers both to new areas and improving effectiveness and equity in existing areas. Planning needs to address all these issues.

Area-based protected area target approaches have been responsible for galvanising substantial commitments from many governments.¹⁷⁹ When IUCN proposed a target of 10% terrestrial coverage for protected areas in the 1980s it was considered a utopian fantasy, but the target was exceeded on land by 1995.¹⁸⁰ However, historical approaches to area-based conservation have also led to simplistic responses. A mixture of opportunism, legacy and ad-hoc site selection has led to some ineffective^{181,182} and inefficient^{183,184} outcomes for biodiversity despite growing global coverage, by selecting sites that were convenient¹⁸⁵ rather than appropriate for biodiversity objectives. Research shows that it is possible to balance food production with the 30% target, although this will need careful planning,^{186,187} and that sufficient space exists to set aside 30% of coastal and ocean waters as marine protected areas.¹⁸⁸ A focus on large areas,¹⁸⁹ and careful prioritisation¹⁹⁰ will be required to meet 30x30.

5.1 Prioritisation

Draft Target 3 (all italic text in this paragraph) provides guiding qualifiers to ensure the global coverage component (“30 per cent”) focuses (“especially”) on important social and ecological elements regarding:

1. *“Particular importance for biodiversity”*
2. *“Contributions to people”*
3. *“Ecologically representative”*
4. *“Well-connected systems”*
5. *“Integrated into the wider landscapes and seascapes”*

Target 3 language also calls for “*effectively and equitably managed*” processes. These criteria are discussed below but it is important to state that this is not a complete list of the potential criteria needed to ensure biodiversity persists through time nor is it representative of the spectrum of socio-political factors decision-makers need to consider.

1. **Importance for biodiversity:** Current protected areas are often biased towards places that are cheap and easy to protect rather than those of greatest relevance to achieving global biodiversity goals.¹⁹¹ Many IPLCs have detailed knowledge and understanding that can help inform decisions about biodiversity. A range of tools help map important species and ecosystems, including **red lists** of species at risk,¹⁹² **key biodiversity areas**, based on ensuring persistence of biodiversity,¹⁹³ and many others (Alliance for Zero Extinction sites,¹⁹⁴ etc.). Data gaps remain. Locating important species or ecosystems is only a first step, with analysis needed to assess if area-based conservation offers the best conservation strategy.¹⁹⁵
2. **Contributions to people:** Natural areas offer a wealth of benefits to society. Moreover, including IPLCs as long-term stewards is a critical element of durable protection. Requirements for Free Prior and Informed Consent (FPIC) and other safeguards such as effective benefit-sharing mechanisms mean that special attention must be paid to the rights of people living in or near the area, or regularly using the area.¹⁹⁶ Ecosystem services have wider national¹⁹⁷ and global^{198,199} roles. These services are ever more important in planning,²⁰⁰ especially in OECMs where trade-offs with

biodiversity may be needed.²⁰¹ A number of tools are on hand to calculate ecosystem services at site,²⁰² landscape/seascape and global scale.^{203,204}

3. **Ecological representation:** Current protected area systems often fail to take adequate consideration of representation,²⁰⁵ here meaning having representative samples of all species and ecosystems within the area-based conservation network, at a scale to ensure long-term persistence.²⁰⁶ Yet the knowledge and tools now exist for these to be included in both planning and monitoring of conservation targets.^{207,208}
4. **Well-connected systems:** species inside many protected areas remain genetically isolated,²⁰⁹ with fragmentation a strong predictor of extinction risk.²¹⁰ Connectivity is increasing,²¹¹ and is particularly important under climate change.²¹² Tools exist to plan connectivity within protected area systems.²¹³ Connectivity needs differ between species. Choices need to be strategic; some areas may be deliberately isolated if e.g., they are threatened by invasive species. There is less experience with the integration of protected areas and OECMs although in principle this should make little difference to planning.
5. **Integrated into the wider land and seascape:** integration into the wider land or seascapes is essential. It implies considering multiple land and water-use strategies within a systematic conservation planning approach where protected areas and OECMs play a major role particularly in intact²¹⁴ and wilderness²¹⁵ areas. It will also contribute to the mainstreaming of biodiversity conservation into sectoral activities.

Table 3: Some approaches to assist prioritisation of the sites to establish protected and conserved areas

Tool	Details
Global Level tools	
Red List species	Identifies those species most severely at risk; their absence or insufficient coverage in protected areas can be an important indicator. ²²⁸
Key Biodiversity Areas (KBAs)	Global terrestrial cover, at present often mainly for birds, very poor for marine. KBAs do not always equate to cost-effective conservation. Useful if country studies available. ²²⁹
Alliance for Zero Extinction (AZE) sites	Alliance for Zero Extinction sites are the sole location for a particular species, if not already conserved they are a priority for action. ²³⁰
Ecological integrity assessment	Uses integrity to prioritise conservation; will not include all areas of highest biodiversity or level of risk (often associated with ecosystem fragmentation)
Important Marine Mammal Areas	Defines 159 areas of particular importance to marine mammals around the world. ²³¹
National level tools	
Protected area gap analysis	Mapping approach to fill gaps in representative protected area networks, ²³² not yet modified to include OECMs.
Free Prior and Informed Consent etc	FPIC and other tools, including participatory mapping ²³³ and visualisation techniques ²³⁴ to identify priorities for Indigenous Peoples and local communities.
Ecosystem services assessment	Mapping carbon ²³⁵ and other ecosystem services, natural capital accounting.

While these tools create a helpful baseline for what to protect and how to protect it, achieving Target 3 requires being cost-effective in deciding how objectives, actions and resource allocations are prioritised within national area-based planning. Large global datasets can push planning down a blind alley if not used carefully but can also be integrated into national or landscape-level approaches to provide real value.^{216,217} If the kinds of analyses in Table 3 have been conducted for a country or region they can provide valuable data to assist planning. But in many places such data may be lacking, particularly for freshwater and marine, and strategic decisions will be needed regarding whether to invest in application of global tools or use of more locally based approaches. Furthermore, planning is becoming more complex as conditions change and new opportunities and constraints emerge. Consideration is also needed with regards to (as a minimum):

- Threats, e.g., climate change^{218,219} (Tables 4 and 5) unsustainable fishing, agricultural expansion,²²⁰ and if abatable²²¹
- Restoration potential^{222,223,224}
- Whether protected areas or OECMs^{225,226} are the best option in given conditions
- Suitability of management approaches and governance types and potential for benefit sharing²²⁷
- Existing governance and tenure patterns including benefit-sharing mechanisms.

Table 4 gives a simple assessment system to help those managing protected and conserved areas a guide to likely effects. As a demonstration, the table is filled out for a (theoretical) mangrove protected area.

Table 4: Climate vulnerability assessment: impacts on ecosystems, species and human societies²³⁶

Impacts	Little/no	Minor	Major
Direct impacts on individual species		✓	
Ecosystem change (e.g., forest drying, coral bleaching)			✓
Loss of key habitat(s)			✓
Expansion of key habitat(s)	✓		
Climate-driven migration		✓	
Invasive species/pathogens		✓	
Changed seasonality		✓	
Cyclone or storm damage			✓
Drought		✓	
Flooding			✓
Heat wave		✓	
Changes in fire frequency/intensity		✓	
Other climate-related disasters		✓	
Hydrological changes, including glacier loss	✓		
Inadequate surface and groundwater	✓		

Table 5: Steps towards adaptation to climate change²³⁷

Principle	Description	Potential actions
Reduce stressors that amplify climate impacts	Climate can act in conjunction with other stressors and amplify these, e.g., by increasing susceptibility to disease and drought, or reduce competitive ability.	<ul style="list-style-type: none"> ■ Control nutrient runoff ■ Control disease ■ Maintain and increase connectivity ■ Control invasive species ■ Reduce disturbance
Sustain or restore ecosystem process and function to promote resilience	Maintaining ecosystem processes (e.g., plant growth, nutrient cycling) can contribute to ecological integrity even when climate change impacts species and ecosystem structure.	<ul style="list-style-type: none"> ■ Restore degraded vegetation ■ Remove obsolete dams and diversions ■ Restore natural ponds and pools ■ Ensure sediment delivery to estuaries and deltas
Protect intact, connected ecosystems	Intact, functioning ecosystems are more resilient to climate change than degraded ecosystems, and help species to adapt to change	<ul style="list-style-type: none"> ■ Restore vegetation along streams ■ Remove dams and similar ■ Avoid or remove developments that cut ecological corridors ■ Establish hedgerows in agricultural lands
Protect areas that provide future habitat for displaced species	Identify, map and protect areas that are likely to support climate-related shifts in species' distributions	<ul style="list-style-type: none"> ■ Use species distribution models to anticipate range shifts ■ Protect critical habitats outside a protected area ■ Reduce barriers to landward shifts by coastal vegetation
Identify and protect climate refugia	Climate refugia are areas that experience less climate change impacts and thus help maintenance and adaptation of species	<ul style="list-style-type: none"> ■ Identify potential refugia ■ Suppress fires etc near refugia ■ Protect cold-water springs ■ Reduce human use near refugia ■ Include areas with high topographic diversity in protected area networks

Box 7: Protected areas and climate mitigation

Protected areas also play an increasingly important and recognised role in mitigation of climate change, both by maintaining existing carbon stores in vegetation and soil, and through additional sequestration in vegetation.²³⁸

While the greatest gains in mitigation can be made through reducing emissions from energy production and industrial process, a substantial proportion of greenhouse gases comes from land use change. Preventing vegetation loss, and the associated breakdown of the soil that releases carbon stored underground, is a critical factor in slowing the rate of climate change, while restoration can help increase rates of sequestration.

Care needs to be taken to balance carbon management with other priorities. There are

concerns, for example, that forest “restoration” or afforestation on natural grasslands would have a net disbenefit in terms of carbon, with more being released in ploughing than is sequestered under any realistic timetable, in natural, old-growth grasslands²³⁹ or savannahs,²⁴⁰ or on semi-natural grassland habitats with important flora and fauna.²⁴¹ Care also needs to be taken with respect to afforestation that favours carbon sequestration but offers little for biodiversity conservation, such as monoculture tree plantations.²⁴² Protection of soil organic carbon is most effective if combined with biodiversity conservation,^{243,244} with species rich GSR (grassland, savannah and rangeland) ecosystems being both more productive and more stable.²⁴⁵

Bringing OECMs into area-based conservation adds to the complexity because they often have more variable governance patterns and will also give increased emphasis to aspects not so directly related to biodiversity conservation, particularly ecosystem services. Attempts to use existing systems to identify OECMs, such as relevant European Union Directives,²⁴⁶ suggest that identification will have to be on a case-by-case basis and will probably in turn need new selection tools.

Systematic conservation planning (SCP) emerged in the 1990s to bring structure to planning for lands, oceans and freshwater systems by focusing on clear quantifiable objectives, stakeholder processes, and evidence-based decision-making to guide conservation actions,²⁴⁷ (see box 8). SCP is the dominant paradigm for what constitutes best-practice spatial planning in complex, value-laden decision-processes where biodiversity outcomes trade-off against economic and social objectives.²⁴⁸ While there is no readily available data to compare SCP approaches against other forms of planning in terms of procedural costs, there is good evidence²⁴⁹ that setting explicit objectives and inclusive stakeholder processes drive more successful implementation of protected and conserved areas, reduce conflicts between stakeholders, rightsholders and protected area authorities, and ensure broader buy-in for conservation outcomes.

A critical question is whether better outcomes can be achieved by identifying and designating new protected areas and OECMs, or by improving the effectiveness of existing area-based networks. This highlights the need for careful spatial planning (GBF Target 1) and Target 3. Growth without effectiveness can reduce conservation success.²⁵⁰ While both aspects are needed to achieve the 30x30 vision, structured decision-processes and action mapping²⁵¹ can help nations decide how to prioritise both the quality and quantity of Target 3 outcomes.^{252,253,254} Decisions will depend on the amount of terrestrial, inland waters and marine area already in protected areas and the general status of ecosystems in the country. Multiple, ambitious goals, developed holistically, will be needed to address the complexity of conditions.²⁵⁵ The “three conditions framework”,²⁵⁶ divides the terrestrial world between cities and farms (18%), shared lands (56%) and wild areas (26%) and can guide national responses. No single approach integrates all these components.

Box 8: Systematic conservation planning, what it is and why it's important

Effective conservation planning should integrate species, habitats, threats and socio-economic data and constraints at a regional or landscape/seascape level to identify the best possible mosaic of protection and management options.^{257,258} Systematic conservation planning is a transparent, data-driven process for identifying a set of places that, together, represent most of the native species, habitats, natural communities and ecological systems in a given area. It considers critical components of effective conservation, identified over decades of practice. Systematic conservation planning originally developed from a predominantly top-down, expert-driven process using ecological data, focused mainly on identification of protected areas, to a more holistic process that engages with a wider range of rightsholders and stakeholders, considers more values in its analysis, includes OECMs and proposes a variety of conservation interventions. Key components of systematic conservation planning include:

1. Stakeholder Engagement: Key rightsholders and stakeholders need to be involved at the beginning, middle and end of planning processes.²⁵⁹ Upfront engagement is key to ensure that planning addresses objectives that countries and communities deem important in addition to conservation. Planning must actively engage Indigenous Peoples, local communities, other stakeholders, experts and policy makers through an iterative process to synthesize existing data and knowledge and work through planning scenarios.

2. Representation: Ensuring all native species and habitats are catered for by the plan. A gap analysis of existing protected and conserved areas helps to ensure that conservation focuses first on biodiversity not covered adequately by previous area-based conservation.²⁶⁰ Time and data constraints usually mean focusing on ecosystems and focal species; the latter are typically rare, range-limited, and threatened species and are not well represented by ecosystems alone.

3. Condition: A comprehensive understanding of the current ecological condition and integrity of landscapes/seascapes. Areas of low human modification represent areas where biodiversity and ecological processes are expected to be relatively intact and resilient, although the condition of some managed areas, e.g., low intensity grazing lands, may also be important. Available data and methods include metrics of human disturbance and cumulative impacts and on habitat structure, composition, or function where studied.

4. Connectivity: Recognised as necessary for long-term persistence of species, populations, communities, and ecosystems, connectivity is measured as the flow of energy, materials, and organisms across space;²⁶¹ long-distance connectivity becomes increasingly important under land- freshwater- and ocean-use in relation to climate change. An assessment needs to include protected and conserved areas along with other suitable linkages of current and future habitats and to consider the needs of a wide range of plants and animals.

5. Threats: Threats to species and ecosystems, such as habitat loss, fragmentation and climate change, can undermine conservation actions. Mapping suitable areas for new development and areas most vulnerable (or resilient) to climate change are essential to model, anticipate, and manage trade-offs for people and nature. Assessment should consider future habitat loss and degradation using a combination of observations of past change and modelled estimates of uses and climate change.

6. Additionality: Making sure planned actions abate threats and provide real benefit. This is clearly required in the case of carbon and biodiversity offsets and other ecosystem services but should be considered more generally in conservation planning to minimise waste of resources.

7. Effectiveness or Adequacy: 30% protection is a global goal. Some countries may not have the space available to achieve this, others will exceed 30%. Key success factors include a thorough understanding of whether the size and configuration of the system, and the effectiveness of management, are together sufficient to meet conservation objectives.

8. Feasibility or Cost: Often there is a variety of spatial configurations of areas that can achieve 30x30, but these scenarios often have widely different probabilities of implementation feasibility and costs and should be assessed as part of any planning exercise.

Systematic conservation plans can draw on a variety of analytical and optimisation techniques and decision-support tools (e.g., Marxan or Zonation), but can also involve simpler, workshop-driven processes. The sophistication of an approach is in practice almost always less important than the quality of data available,²⁶² the care with which objectives and questions are constructed, the assumptions underlying planning and transparency of the decision-process.

To illustrate a high-level decision-process, we have developed a conceptual diagram based on a country's existing coverage and different prioritisation pathways to pursue using the Target 3 qualifiers (Figure 6).

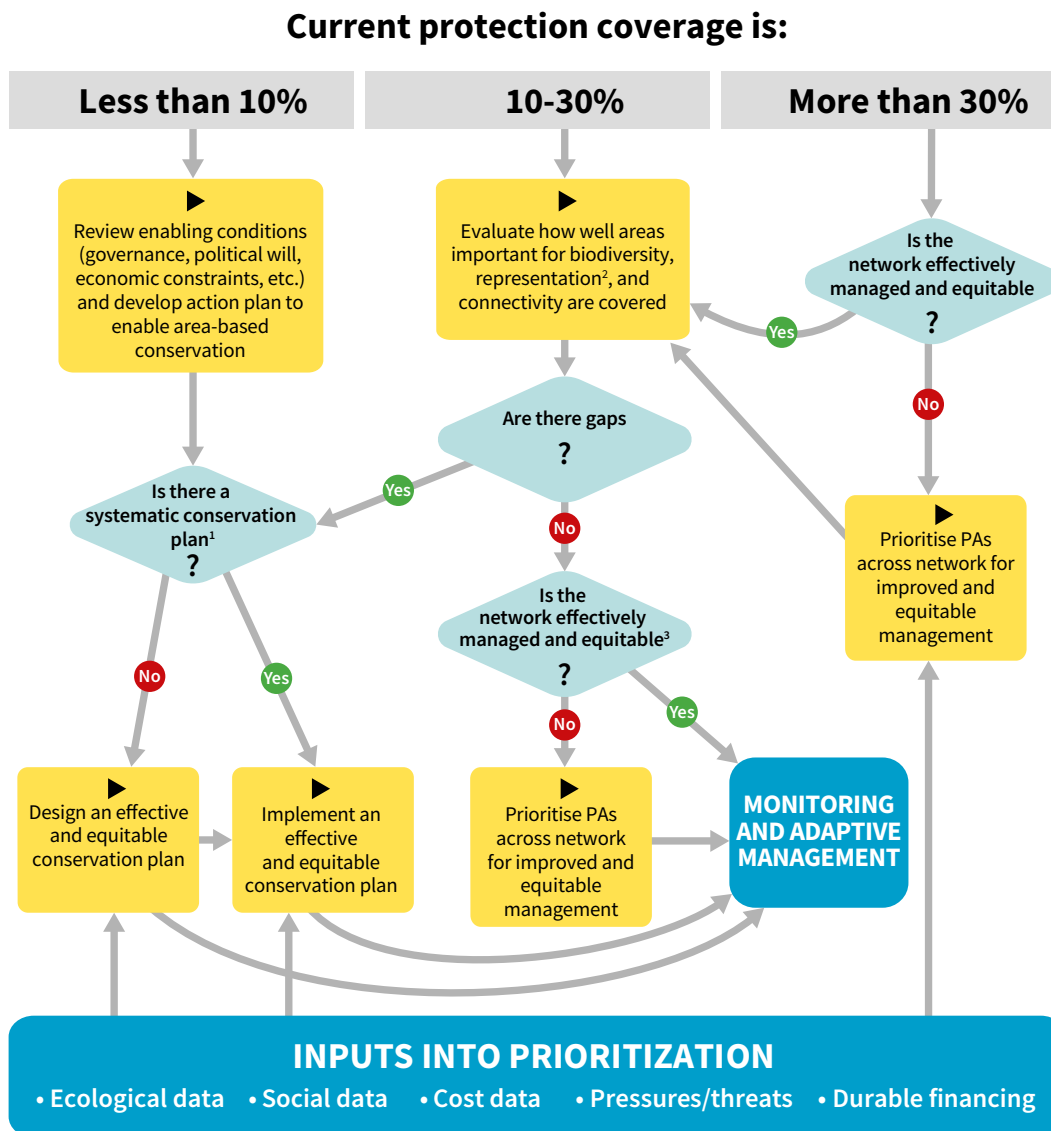


Figure 6: Prioritisation processes

Note that:

- Systematic conservation planning is a science-based, transparent, inclusive rights holders and stakeholder planning process. Experience is growing in how to integrate traditional knowledge into conservation planning.²⁶³
- Effective and equitable management must include durable financing for the conservation network, upholding IP and LC rights and social safeguards, along with biodiversity through continued monitoring and evaluation.
- Ecologically representative networks mean all freshwater, terrestrial and marine ecosystems and species receive adequate conservation coverage.

5.2 Management effectiveness

Understanding the effectiveness of management is also critical to achieve successful conservation outcomes. It is important to consider focusing on both improvement of existing areas alongside identification of new areas for protection. The last comprehensive global study, now rather dated (published 2010), found 40% of protected areas had major deficiencies,²⁷² highlighting the importance of continuing to build management strength. Uncertain, donor-driven funding means that many protected areas focus on time-limited projects (built infrastructure, research) while day-to-day management remains under-resourced. There are still important information gaps, for example little quantitative data exists on the effectiveness of protected landscapes and seascapes (IUCN Management category V).²⁷³

Table 6: Examples of tools available for assessing management effectiveness

Aim	Tool	Time required	Details and notes	Strengths	Weaknesses
Rapid assessment of management	Management effectiveness tracking tool (METT) ²⁶⁴	Low (1-2 days)	Simple, multiple-choice questionnaire approach, ideally done by a group of protected area staff and other stakeholders, deciding by consensus.	Quick to apply, driven mainly by expert opinion, creates list of action points.	Weak on outcomes – uses expert opinion (variations exist with more data).
Assessment of social benefits from protected areas	Protected Area Benefits Assessment Tool (PA-BAT) ²⁶⁵	Low (1 day)	Working with stakeholders to identify what they value from a PA, actual and potential, and where and when benefits accrue.	Quick method to identify what communities value from a protected area.	May miss “global values” like carbon.
Assessment of social impacts of protected areas	Social Assessment of Protected Areas (SAPA) ²⁶⁶	Low (1-2 days)	System for working with local rightsholders and stakeholders to assess the impact of a protected area on their livelihoods.	Focuses on social impacts and human communities.	No data on effectiveness from an ecological perspective.
Assessment of governance quality of protected areas	Governance Assessment for Protected and Conserved Areas ²⁶⁷	Medium	Methodology for assessing governance quality, aimed at managers and a wider group of stakeholders, working together	Uses a combination on interviews, workshops and an optional site-level scorecard.	No data on ecological effectiveness or wider social impacts.
Setting standards for protected areas	Green List of Protected Areas ²⁶⁸	Medium	Global standards against which to measure management, verified by third parties.	Detailed management standards.	Relatively time and money expensive.
Setting standards for species in protected areas	Conservation Assured	Medium	Verified standards aimed at particular species or groups, so far for tigers, ²⁶⁹ jaguars and river dolphins.	Suitable for priority species and tailored to their needs.	Relatively time and money expensive.
Detailed assessment of management	Enhancing our Heritage toolkit ²⁷⁰	High (several days, long-term monitoring)	Developed for UNESCO natural World Heritage, has 12 different toolkits, for a comprehensive monitoring system	Detailed toolkit for sites needing particular attention.	Time needed, linked to detailed monitoring.
Monitoring system for PA rangers	SMART ²⁷¹	Daily use	Monitoring system to record animal sightings, poaching, traps found etc	Helps build data, also builds competencies of rangers.	Requires basic training and equipment, management.

Management effectiveness needs to be tracked regularly for both existing protected areas and for new protected areas and OECMs, to ensure conservation targets are being met, to facilitate adaptive management and to provide lessons for new protected areas and OECMs. But as with prioritisation, understanding the effectiveness of area-based conservation involves a range of issues: the site's significance (context), conservation planning, management processes, inputs of time, skills and finance, whether plans are being met (outputs) and most importantly, conservation outcomes.²⁷⁴ Many methodologies exist, ranging from simple questionnaire-type approaches²⁷⁵ to detailed monitoring systems (see Table 6 for examples).²⁷⁶

More recently, emphasis has been put on monitoring the social impacts²⁷⁷ and governance quality²⁷⁸ of such areas. Approaches are underway to assess against agreed management standards, through the IUCN Green List process for all protected areas²⁷⁹ and through of species-specific management standards, such as Conservation Assured | Tiger Standards (CA|TS).²⁸⁰ Additionally, work is ongoing to find a globally applicable management effectiveness indicator for the GBF.²⁸¹

Assessment tools can be used in combination, or in sequence. For example, a METT (or similar) is often used as a precursor for one of the standards (Green List or Conservation Assured). Assessment tools are mainly open access methods that are suitable for (and encourage) local adaptation to reflect geographic and cultural differences and to help crowd source a methodology over time. Standards, by definition, are more static although these are also periodically revised as more is learned about management, pressures and responses, and can be nationally adapted, as in the case of the Green List.

Box 9: Linking donor funding to management effectiveness

There is a lack of adequate funding for managing protected areas; recipients of funds are obliged to manage finances as tightly as possible and donors need to ensure that money is not wasted. One way of doing this is to insist that protected areas demonstrate they are being managed effectively and that funds lead to improvements in conservation outcomes.

The Global Environment Facility insists that any protected area receiving GEF funding completes regular management effectiveness assessments using a modified form of the Management Effectiveness Tracking Tool (METT), a simple assessment tool. The European Union is introducing a similar requirement, using its own assessment system. The METT assesses effectiveness through a series of multiple-choice questions, with an opportunity to present accompanying data and space to suggest changes needed to address areas where management is imperfect. The result is a score, which can be compared over time with successive assessments, but more importantly a list of tasks to address any shortcomings. The latter can be integrated into annual work plans

and re-examined during subsequent METT exercises.²⁸² Given its simplicity and speed of application (most METT assessments take one or two days) it is weak on examining conservation outcomes and is ideally used in conjunction with monitoring of key species and ecosystems.

Integration of effectiveness assessments into donor funding cycles is likely to be an important element in Target 3 in the future and both state and NGO donors are increasingly making management effectiveness assessments a prerequisite of funding. Simple assessments are carried out by site staff while large grants are sometimes accompanied by external evaluation. While this undoubtedly creates an additional reporting burden for protected and conserved areas, it is argued that the increased efficiency of financing more than compensates. Furthermore, assessments of management effectiveness are now increasingly being augmented with agreed standards, such as the IUCN Green List of Protected and Conserved Areas or Conservation Assured (e.g., CA|TS), which adds additional rigour (and third-party verification) to assessments.

Case studies

Mediterranean:

Scenario: In the human-dominated Mediterranean Sea, fully protected areas occupy only 0.04% of its surface. The Mediterranean has also seen serious decline in a number of fish populations and of other marine life. A survey of trends in 42 populations of nine fish species from 1990-20210 found all are being overfished and declining.²⁸³ Impacts from pollution and uncontrolled coastal development are also damaging marine biodiversity.

Action: An assessment of 24 Mediterranean MPAs considered the impacts of full and partial protection on biomass and density of fish assemblages, some commercially important fishes, and sea urchins (whose populations often expand to ecologically damaging levels in the absence of predators). Factors considered included level of protection, MPA size, age, and level of enforcement.

Outcome: Results revealed significant positive effects of protection for fisheries target species and negative effects for urchins, as their predators benefited from protection. Full protection was more effective than partial protection, but benefits were also correlated with the level of enforcement. Even small, well-enforced, MPAs have significant ecological effects.²⁸⁴

Mozambique:

Scenario: Mozambique has high biodiversity values but little finance available for conservation.

Action: A private foundation, BIOFUND (Fundação para a Conservação da Biodiversidade) was set up with the aim of contributing to sustainable financing of

biodiversity in Mozambique. Ten years in development, at a start-up cost of about US\$4 million from diverse funding sources including Agence Française de Développement (AFD), the World Bank and the European Union (EU).²⁸⁵ BIOFUND both raises and manages project funding and ethically invests its capital.

Outcome: As of 2019, the total endowment was US\$37.2 million, an increase of 16%, equal to over US\$5 million, over the previous year. Disbursements to national parks and reserves focus on non-salary operating costs such as fuel, vehicle maintenance, ranger field rations, communications, and infrastructure maintenance; often the hardest things to fund but vital for effectiveness. Funding has already reached 74% of all parks and reserves in Mozambique.²⁸⁶

Papua New Guinea:

Scenario: The largest island in the Oceania region, supports an estimated 5–9% of the world's terrestrial biodiversity in less than 1% of the land area.²⁸⁷ A 2016/17, protected area assessment found 51 of the country's 58 protected areas could not deliver basic management, most had no budget, no paid staff, and no infrastructure or equipment.

Action: However, in about half the protected areas, some voluntary activities were undertaken by the community, and just under half have some form of management planning.²⁸⁸

Outcome: The results of the management effectiveness study were critical in encouraging the government and stakeholders to seek financial sustainability through the establishment of a Biodiversity and Climate Fund.

One critical and often forgotten element in management effectiveness is the need to build capacity of protected area managers and rangers. Ranger employment is often characterised by few benefits, high exposure to risk and often a lack of capacity to carry out tasks effectively.^{289,290} All these issues could be improved through professionalisation, development of better working practices and labour rights and better inclusion of rangers in policy debates, development and implementation. Rangers come from many backgrounds and include Indigenous rangers, community rangers and government rangers; they are increasingly gender diverse and perform many different tasks.²⁹¹ Rights groups' concerns about increased ranger militarisation²⁹² and resulting risks of human rights abuses^{293,294} highlight the need for adequate training, safeguarding procedures, ethics and accountability²⁹⁵ and for explaining the wider roles of the ranger community beyond enforcement. As a first step, protected area authorities, conserved areas managers, conservation organisations, funders and all other relevant bodies should support the series of actions outlined to help achieve the vision and goals identified at the International Ranger Federation's (IRF) 9th World Ranger Congress, focusing on greater recognition by governments, the International Labour Organisation and agreements relating to health, climate, environment and sustainable development.²⁹⁶



5.3 Policy brief

The 30x30 target is likely to pay increasing attention to focusing on the most appropriate areas for biodiversity conservation and to achieving effectiveness and equity in protected areas and OECMs rather than solely the area-based component of the target:

- Numerous tools exist to identify areas of high conservation value. These are all useful data sources, where they exist, but do not automatically equate with the most cost-effective places to implement area-based conservation.
- Changing societal values and priorities mean that protected areas and OECMs henceforth must be based on respect for the rights and aspirations of local people and transhumant communities.²⁹⁷
- Conservation planning needs to take place in the context of broader considerations of planning at national, landscape and seascape level, with close links to draft Target 1 of the GBF.
- Approaches such as systematic conservation planning (which needs also to include social and ecosystem service considerations and a broad range of stakeholders) can help on a regional or national basis.
- Assessment of management effectiveness,²⁹⁸ which increasingly includes both social²⁹⁹ and governance³⁰⁰ issues and the use of agreed management standards,^{301,302} is a key part of the process. In countries with high levels of protection, addressing management effectiveness is now the main priority

6.

Non-area-based tools to support 30x30

6. Non-area-based tools to support 30x30

Countries can support protected areas and OECMs through associated national-level actions such as addressing IPLC rights, curbs on wildlife trade, pollution control, reducing agricultural subsidies that incentivise land clearing and other activities that impact protected areas (positively or negatively).

Protected and conserved areas need supportive policies and legislation. They are affected by many changes: on a planetary scale, by management decisions in the wider landscape or seascape and by impacts of people present (legally and illegally) inside their boundaries; these often overlap. Designating a protected area or OECM is not enough; it needs to be embedded in a legal system that provides security and to be backed by policies and tools that help to maintain its effectiveness. Key impacts are identified in Figure 7 and responses in Figure 9.

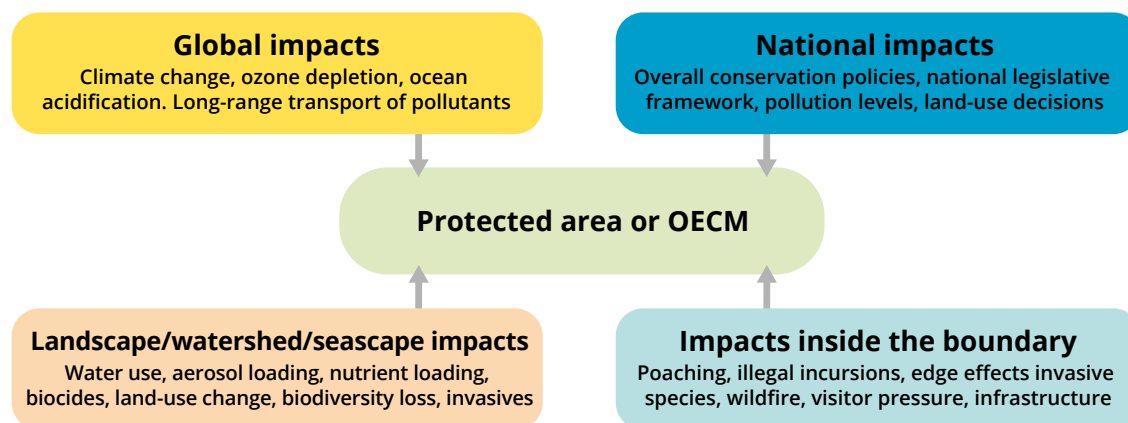


Figure 7: External impacts on protected and conserved areas

6.1 Global tools: Planetary boundaries – changes happening on a planetary scale

The planetary boundary analysis identifies nine critical pressures threatening global ecosystem functioning, ranging from ocean acidification to biodiversity loss.³⁰³ All have impacts on protected and conserved areas as shown in Table 11 in Appendix 5.

Responses include pollution control, changes in agribusiness to slow land use change, changes in transport to reduce energy consumption and other impacts, and wider changes in society attitudes. Protected area agencies can reduce their own footprint, but broader change needs international and government leadership. Many targets of the draft Global Biodiversity Framework (e.g., 1,2,4-8, 17) address these issues.

6.2 National tools: Supportive policies and legislation

Protected areas and OECMs need to be supported by strong national policies and legislation,³⁰⁴ under the auspices of government ministries powerful enough to maintain effective conservation in the face of competing pressures from other areas of government and from industry. Laws need to protect against future losses from PADD (protected area downgrading, downsizing and degazettement)³⁰⁵ and must be set in a strong human rights framework,³⁰⁶ including strengthening the rights of IPLCs and

obligations for FPIC³⁰⁷ relating to key aspects of designation and management. Increasingly, countries are enacting laws and policies to ensure that people living in and around protected areas are supported in terms of access to resources and other benefits,³⁰⁸ although the COVID pandemic has created a new set of pressures on many protected areas.³⁰⁹

6.3 Landscape, watershed and seascape tools: integrated planning, buffer zones and cross border collaboration

The success of a protected area or OECM is influenced by what happens around it, including the pressures outlined above. Many of the steps needed, such as pollution control and elimination of perverse subsidies encouraging vegetation clearance,³¹⁰ need to be addressed at a higher government level. More local issues include how effectively the area is integrated into the wider environment, and its susceptibility to pressures from humans, invasive species, novel diseases and legal or illegal use. A range of tools are available.

Ecological corridors (including **stepping-stones**) are essential conservation tools for connecting most protected and conserved areas.³¹¹ (Exceptions are where genetic interchange is sacrificed for the present due to threats from invasive species or novel diseases.)³¹² Connectivity is needed at both local and larger scales by e.g., maintaining flyways for migrating birds,³¹³ or passage for migrating fish.^{314,315}

- **Buffer zones around protected areas**,³¹⁶ where management takes special account of conservation, helps increase effectiveness. Such areas can be sites for ecotourism, or to grow products for local people to compensate for loss of resources from inside the boundaries. The effectiveness³¹⁷ of buffer zones is poorly understood. Their role will vary and designing appropriate management in surrounding lands and waters needs to be factored into planning, where a buffer zone is even possible, some examples follow:
 - Natural vegetation to serve as a physical buffer, a source of materials for local communities and places for ecotourism.
 - Natural vegetation to provide disaster risk reduction, such as for avalanche control, coastal protection, flood mitigation and other forms of “eco-DRR”.
 - Various options to reduce human-wildlife conflict, such as vegetation barriers, water barriers, fences etc, often employed with compensation payments.³¹⁸
 - Fuelwood plantations, tea or coffee growing, grazing and honey production, providing a physical buffer and a source of wellbeing and economic opportunity.
 - Firebreaks³¹⁹ and barriers against invasive species may conversely require a break in vegetation to isolate the protected area in regions of high risk.
 - Well-managed forestry.³²⁰
- **Landscape-level management** needs to address issues that can influence a protected area or OECM, such as water abstraction; land-use change that alters soil erosion and hydrology; and impacts on wild species that venture outside the protected area. Control of illegal use, particularly incursions and settlement and the illegal trade in wildlife, also need factoring into management.

Managers often operate across regional or national boundaries, to retain migration pathways and other ecological corridors and genetic interchange. Such cooperation can be challenging in situations where management is needed beyond national jurisdiction, such as the high seas, or where there are cross-border tensions between governments (e.g., disputed territories), poor governance in general or physical barriers. Protected area managers and staff sometimes have to collaborate unofficially or opportunistically. In other cases, governments are supportive and collaboration is encouraged and sometimes formalised. Cross border collaboration is also sometimes needed in countries with a strong federal system and powerful regional governments. Some management options are given in Table 7 below. While these examples often refer to collaboration between governments, they can also occur in less formal ways.

Table 7: Different models of cooperation across borders

Model of cooperation	Example
Communication or information sharing	<ul style="list-style-type: none"> ■ Regular communication on actions, problems, opportunities etc ■ Sharing information, e.g., notifying about management actions and illegal activities
Consultation	<ul style="list-style-type: none"> ■ Seeking opinion, feedback or advice across national and regional borders (e.g., often from other protected area staff), on problem solving, management, etc ■ Cooperative processes with the aim of harmonising management
Coordinated action	<ul style="list-style-type: none"> ■ Coordinated implementation of actions that contribute to joint goals for the whole transboundary system, e.g., monitoring results are integrated
Joint implementation of decisions	<ul style="list-style-type: none"> ■ Jointly coordinated and implemented management actions, e.g., joint law enforcement patrols, joint fundraising and project implementation
Coordination to agree a transboundary protected area or high seas MPA	<ul style="list-style-type: none"> ■ Data sharing on biodiversity, threats, planned activities, potential risks ■ Joint planning and monitoring exercises ■ Agreement on cross border establishment of area-based conservation

The frequency with which such collaboration and meetings should take place will vary on a case-by-case basis but should be regular enough that staff are familiar with their appropriate counterparts and can pick up potential problems and challenges before they become too advanced.

6.4 Connectivity

Many protected and conserved areas are isolated from other intact natural habitats, with many of their resident species effectively marooned. Small, isolated populations tend to decline or disappear over time, due to inbreeding and genetic deterioration. Conversely, even quite small reserves can function effectively if they are connected to other natural areas. Ensuring that a system of protected and conserved areas is well connected is therefore extremely important. Ecological corridors are one conservation tool that has been documented to be effective³²¹ for plants³²² as well as animals. In 2019, IPBES assessed that only 9.3-11.7% of terrestrial protected areas were adequately connected.³²³ In 2022, 7.04% of the world’s terrestrial surface was reported as being both protected and connected, rising to 7.84% when OECMs are included.³²⁴

Ecological corridors or *connectivity corridors* are places that help maintain and restore vital ecological connections in a landscape or seascape. They are “*clearly defined geographical spaces that are governed and managed over the long term to maintain or restore effective ecological connectivity*”.³²⁵ They may or may not be protected and conserved areas (often not in practice) but serve to support such areas by acting as a link along which some or all species can travel, connecting protected areas, OECMs or other intact natural habitat. They differ from protected areas and OECMs in their primary purpose:

- Protected areas and OECMs *must* conserve *in situ* biodiversity and *may* also preserve connectivity.
- Ecological corridors *may* conserve *in situ* biodiversity but *must* preserve connectivity.³²⁶

Connectivity is crucial in marine and coastal systems.³²⁷ The impacts of fragmentation in marine systems are complex.³²⁸ For example, protecting the seafloor without the water column above may miss important elements of the marine ecosystem.³²⁹ Similarly, land-sea connections are often important³³⁰ in terms of e.g., nutrient interchange, breeding cycles and ecosystem services. Large scale connectivity, frequently between ocean basins, is critical for long-distance migratory species (mammals, seabirds, sharks, sea turtles, etc). Research suggests that connectivity is currently seldom considered in design of marine protected areas,³³¹ highlighting important changes needed to develop a holistic seascape approach to conservation planning.

Understanding and managing hydrological connectivity at catchment scale is fundamental for ecological functions in all ecosystems, from deserts to rainforests. It is especially important for protected areas and OECMs, no matter their size, when they are surrounded by human-dominated landscapes.³³² Rivers, streams and ephemeral drainages are natural corridors because they promote movement of animals, sediment, water, and nutrients; they can also act as climate refugia. Particularly in semi-arid and arid regions, vertical hydrological connectivity between surface- and groundwater is needed to ensure groundwater resources are sufficient to support ecological communities. Removing unnecessary or obsolete barriers from waterways can restore lateral and longitudinal hydrological connectivity, benefitting fish passage, and the ecological functioning of riparian areas and floodplains.³³³

Building connectivity and ecological coherence into area-based conservation in any ecosystem is complicated, requiring high levels of understanding about ecological and social science, strongly developed negotiation skills and sustained stakeholder engagement.³³⁴ Scale of connectivity management can vary from small changes to facilitate movement of vulnerable species within a protected area, to transcontinental migration flyways. In wider landscapes, connectivity can also be increased through sustainable land management and ecosystem restoration. Even narrow strips of natural vegetation can be valuable.

Done correctly, a network of ecological corridors can knit together multiple protected areas, OECMs and other natural areas into a larger functioning ecosystem, even if individual components are of sub-optimal size. But poorly designed ecological corridors can fail to produce the desired outcome, or potentially facilitate movement of invasive species, although research suggests the latter is not currently a major problem.³³⁵ There are huge differences in the kind of corridor required for a particular species, for instance:

Box 10: Connectivity

The theory of island biogeography predicts that isolated ecosystems lose species. Connecting natural ecosystem is thus important to allow regular species movement, occasional genetic interchange, and movement in response to changing conditions. The following are some important examples.³³⁹

- **Migration:** both continuous corridors to allow movement of e.g., reptiles and marine and freshwater fish to their breeding grounds, species like wildebeest and zebra along the Serengeti-Mara plain; and discontinuous patches of habitat to act as way stations for migrating birds, such as the Western Hemisphere Shorebird Network.³⁴⁰
- **Genetic exchange:** irregular movements that are necessary to maintain the health of populations, for example allowing species living into two patches of forest to meet and interbreed. Well designed and managed corridors can increase the effective size of small protected areas by combining them into a larger functional unit.
- **Multigenerational processes:** for species such as monarch butterflies migrating over several generations from the United States to Mexico, or painted lady butterflies moving from North Africa to northern Europe.³⁴¹
- **Restoration processes:** such as restoration of hydrologic functions by removal of dams and restoring of traditional migration pathways for fish or of corridors to help giant panda cross highways that otherwise isolate individuals.
- **Climate change adaptation:** by allowing gradual range shifts in response to climate change by restoration of corridors through agricultural landscapes.
- **Enhancement of recovery:** for example, restoring native trees in logged areas to speed up the rate of forest recovery.
- **Prevention of undesirable flows:** such as reduction of erosion risk by slowing surface water flows downslope in cultivated landscapes.

- Some butterfly species can migrate hundreds of miles while others are reluctant to cross small patches of unfamiliar territory.³³⁶
- Similar differences occur in marine organisms, where larval dispersal in particular differs markedly between species,³³⁷ and access to spawning, breeding and feeding areas often requires components of connectivity management.
- Some species need intact areas to move, like those confined to old growth forests; others, like many large predators, can easily cross degraded areas.
- Some species need a continuous corridor while others, including many birds, can use occasional “stepping stones” through degraded landscapes for feeding and rest.
- Conservation success – including the rebuilding of a population – often means that individuals will start to disperse. This is now happening in some tiger reserves for instance, and here corridors are needed not only to facilitate tiger movement but to minimise risks from human contact.³³⁸

In places with little prospect of creating new protected areas, a focus on connectivity can build effectiveness of the existing system. It provides the opportunity to work with land owners or tenure holders, and marine stakeholders, through OECMs or stewardship arrangements. Systematic conservation planning can help. However, the critical skill is usually the ability to work with communities and stakeholders to enthuse, reassure, encourage and reach agreement about where ecological corridors are placed, where they can be conserved and how they are managed and monitored. In many cases, trade-offs will be needed between what is ideal for conservation and what is possible from a social, financial or political perspective. Building a network is often a multi-year project. In Figure 8, steps to building connectivity are summarised.

Box 11: Convention on Migratory Species

Species that regularly migrate have particular needs for connectivity, although in the case of birds and some insects, these are often “stepping stones” for resting and feeding rather than continual corridors.

The Convention on Migratory Species (CMS) is a United Nations treaty, providing a global platform for the conservation and sustainable use of migratory animals and their habitats. CMS lays the legal foundation for internationally coordinated conservation throughout a migratory range. It acts as a framework Convention, complementing and co-operating with other international organizations, NGOs and partners in the media as well as in the corporate sector.

Migratory species threatened with extinction are listed on Appendix I of the Convention. CMS Parties strive

towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each State joining the Convention, CMS promotes concerted action among the Range States of many of these species. A Range State is any nation that exercises jurisdiction over any part of a range which a particular species, taxon or biotope inhabits, or crosses or overflies at any time on its normal migration route.

Migratory species that need or would significantly benefit from international co-operation are listed in Appendix II of the Convention. For this reason, the Convention encourages the Range States to conclude global or regional agreements.³⁴²

From the start, include Indigenous peoples and local communities in assessment and planning, for fairness, transparency and to draw on their knowledge and opinions on e.g., wildlife movements, conservation. Connectivity plans must never be issued before those directly affected know; people finding their territories slated for conservation without warning is a quick way to build opposition.

Determine the focal landscape or seascape

Identify and collaborate with stakeholders and partners

Who manages the resource and who has rights to resource in potential corridors? What impacts will corridors have? What is the likely social and political acceptance and/or resistance to corridor plans?

Assess capacity and expertise

Human, financial, and technical capabilities, tools such as formal agreements, committees, etc.

Identify and map connectivity

Including connectivity between key protected and conserved areas across the landscape with spatial modeling and available wildlife movement data. Gather additional data where needed.

Assess utility of corridors

Ground-Truthing the mapping data

Identify threats and pressures

Identify protected and conserved areas which are currently or are in danger of becoming isolated

Assess the condition

Assess how key ecological and social factors vary across the landscape

Assess governance and policies

Land tenure and jurisdictions (e.g., private land, community land, etc) and the associated policies

Evaluate social and economic factors

Economic analyses of land use and livelihood activities, goods and services, etc.

Prioritise corridors

Based on importance, threats, human well-being, opportunities, etc

Identify indicators and develop a monitoring evaluation and adaptive management plan

Work collaboratively with local rightsholders and stakeholders in selection and monitoring

Develop a corridor implementation plan

Establish roles and governance. Who will handle funds and who will carry out the workplan?

Figure 8: Building a Connectivity Corridor (for further details, see Appendix 6)
(The linear process is approximate, some section can occur simultaneously, there may be feedback loops)

6.5 Management inside protected areas and OECMs: good management, codes of practice

Tools are needed to maintain effectiveness inside the protected area, and some may draw on approaches used throughout the landscape. These include many management effectiveness tools and standards, touched on in the section on prioritisation above, and a range of statutory or voluntary guidelines. Many of the latter relate to tourism, which is a key source of income for conservation but also a pressure and vulnerable to shocks such as social breakdown or disease.³⁴³ Many guidelines³⁴⁴ and codes of practice exist (e.g., whale watching codes,³⁴⁵ ecotourism codes,³⁴⁶ etc); see Table 8 for some general principles. In addition, there are a growing number of tools focusing on human rights, such as the Rights and Resources Initiative’s Land Rights Standard.³⁴⁷

Most of these tools (which range from major international policies to local codes of practice) are outside the control of individual managers of protected areas or OECMs, and usually outside the control of protected area agencies and Indigenous Peoples and Local Communities. Careful intra-government collaboration, and transnational coordination, is needed to bring many of these factors to bear (Figure 9).



6.6 Policy brief

Area-based conservation in the absence of supportive policies in the wider landscape is likely to fail. Governments therefore need to be encouraged, and if necessary incentivised, to take a wider landscape and seascape approach, addressing connectivity, in support of their conservation networks:

- Development of legislation, or implementation of existing legislation, against wildlife crime, controls on vegetation clearance and pollution, strengthening IPLC rights and tenure recognition, are all needed to provide a supportive environment for area-based conservation
- At a more local level, buffer zones remain under-used and often misunderstood, but can help protected areas survive whilst creating viable livelihood options for local communities. In some cases buffer zones could in turn become OECMs.

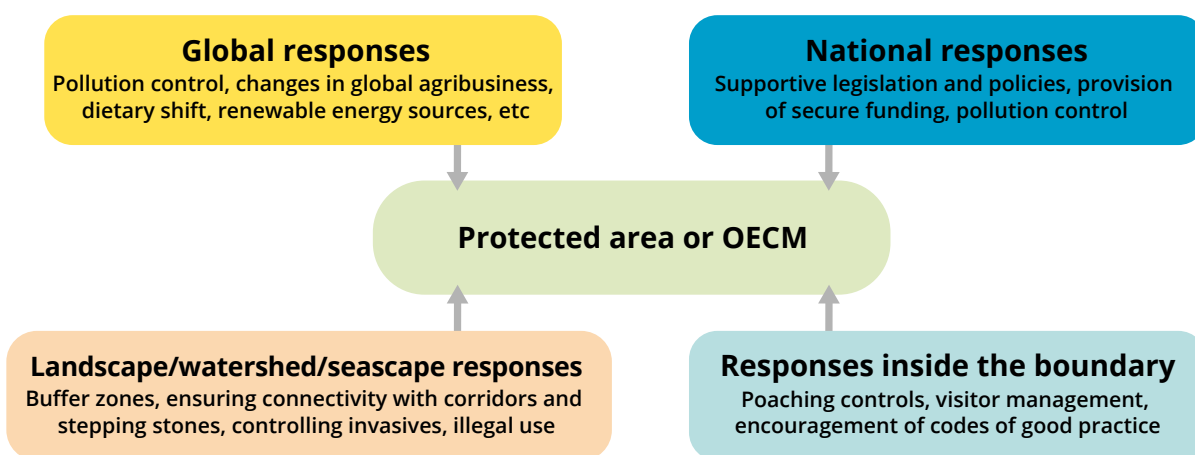


Figure 9: Responses to impacts on protected and conserved areas

Table 8: Ten principles for tourism and visitor management in protected areas³⁴⁸

Principle	Description	Actions
1. Appropriate management depends on objectives and protected area values	<ul style="list-style-type: none"> Objective(s) within management plans identify desired outcomes This identifies appropriate actions and acceptable resource and social conditions Which allows evaluation of management success 	<ul style="list-style-type: none"> Agree objectives in a participatory manner Ensure management plans include clear objectives, prioritising conservation
2. Proactive planning for tourism and visitor management enhances effectiveness	<ul style="list-style-type: none"> Proactive management requires policies linked closely to protected area values and objectives Forward thinking can lead to recognition of emerging opportunities for recreation and tourism 	<ul style="list-style-type: none"> Provide opportunities for visitors to learn about protected area values Be aware of emerging visitor activities that may affect management.
3. Changing visitor expectations and use are inevitable and may be desirable	<ul style="list-style-type: none"> Impacts, use levels and expectations tend to vary with location and other factors Environmental variables influence visitor use and levels of impact 	<ul style="list-style-type: none"> Use zoning to manage for diverse recreational opportunities Make decisions on tourism depending on the specific conditions
4. Impacts on resource and social conditions are inevitable consequences of human use	<ul style="list-style-type: none"> Any level of use leads to some impacts; where there is conflict conservation has primacy The process of determining the acceptability of impact is central to visitor planning 	<ul style="list-style-type: none"> Managers must ask "how much impact is acceptable?" Managers must act to maintain an acceptable level of impact
5. Management is directed at influencing human behaviour and minimising tourism induced change	<ul style="list-style-type: none"> Management is usually aimed at minimising human-induced change to natural processes Some change may be desirable, particularly in protected areas created to provide recreational opportunities 	<ul style="list-style-type: none"> Management actions determine the amount, type and location of changes
6. Impacts can be influenced by many factors, so limiting the amount of use is but one of many management options	<ul style="list-style-type: none"> Many factors other than level of use influence the impacts of recreation Impacts may occur outside the protected area or not become obvious until later Planners need to understand the relationship between use and impacts 	<ul style="list-style-type: none"> Education and information programmes can help to modify visitor behaviour and thus reduce damage.
7. Monitoring of tourism management and impacts is essential for professional management	<ul style="list-style-type: none"> Monitoring is essential, with data needed on natural resources, social, community and economic conditions 	<ul style="list-style-type: none"> Visitors can usefully be involved in monitoring (e.g., bird counts)
8. The decision-making process should separate technical description from value judgements	<ul style="list-style-type: none"> Both technical decisions and value judgements are needed in protected area decision-making 	<ul style="list-style-type: none"> Separate questions relating to existing conditions from preferred conditions
9. Affected groups should be engaged because consensus and partnership is needed for implementation	<ul style="list-style-type: none"> All affected groups should be consulted in decision-making 	<ul style="list-style-type: none"> Rightsholders and stakeholders should help to identify and monitor indicators.
10. Communication is key to increased knowledge and support for sustainability	<ul style="list-style-type: none"> Communication of results from monitoring tourism impacts on conservation and community benefits can explain management actions 	<ul style="list-style-type: none"> A communication strategy is needed to support adaptive management.



7.

Sustainable Finance in Protected Areas: a guide for post-2020 Target 3 (“30x30”)



7. Sustainable Finance in Protected Areas: a guide for post-2020 Target 3 (“30x30”)

Finance remains critical; the sums are small compared with many government costs and yield high on both security and return on investment. Many integrated financing options and investments are available. Important aspects include moving away from discrete project funding to secure, long-term, commitments.

7.1 The question of finance for 30x30

Nature and biodiversity bring multiple benefits to people and economies.³⁴⁹ In this sense, a protected area network is similar to a road network: a piece of the national infrastructure that benefits citizens and the economy. But nature is also under severe pressure from human activities.³⁵⁰ The World Bank estimates that US\$2.7 trillion of financial losses will occur without better nature protection,³⁵¹ due to climate change, flooding, storm surges, soil erosion, polluted drinking water, and other impacts of a degraded environment. The 30x30 goal would make a large contribution to reducing these negative impacts, at a cost of approximately \$100 billion per year globally (or ~\$80 billion more than is currently spent).³⁵² The additional funding needed represents less than 0.001% of global GDP, which is far smaller than the benefit returned.³⁵³

Similar to road networks, most protected areas and their biodiversity are public goods, and so public spending is the first source of finance.^{354,355,356} Without adequate funding, public goods degrade, thus losing their social and economic value. A protected area without adequate financial and staffing resources loses its biodiversity and ecosystem services,³⁵⁷ just as an un-maintained road ceases to carry vehicles effectively. Loss of biodiversity causes demonstrable reductions in local incomes, productivity, health, and national GDP.³⁵⁸ Conversely, spending on biodiversity has positive effects on both species and economic output.³⁵⁹

Despite the clear importance and economic value of nature, however, countries have struggled adequately to fund their protected area systems.³⁶⁰ In light of that, how can 30x30 – a larger and more expensive environmental ambition – be sustainably financed? Here, we briefly outline protected area financing options and the conditions needed to make them effective and sustainable (Figure 10). We particularly focus on how governments, as signatories to the CBD, can find the funding and efficiencies needed. However, no amount of finance will achieve biodiversity or social goals if it is hindered or mis-targeted in its operation. (The Costa Rica case study gives an example). The flow of finance needs to be customised to the local needs of each protected area landscape and its stakeholder groups; be delivered promptly as needed; and operate in a wider national context where pro-biodiversity action is coherent across all ministries (rather than one ministry funding conservation while other ministries fund actions that harm biodiversity).

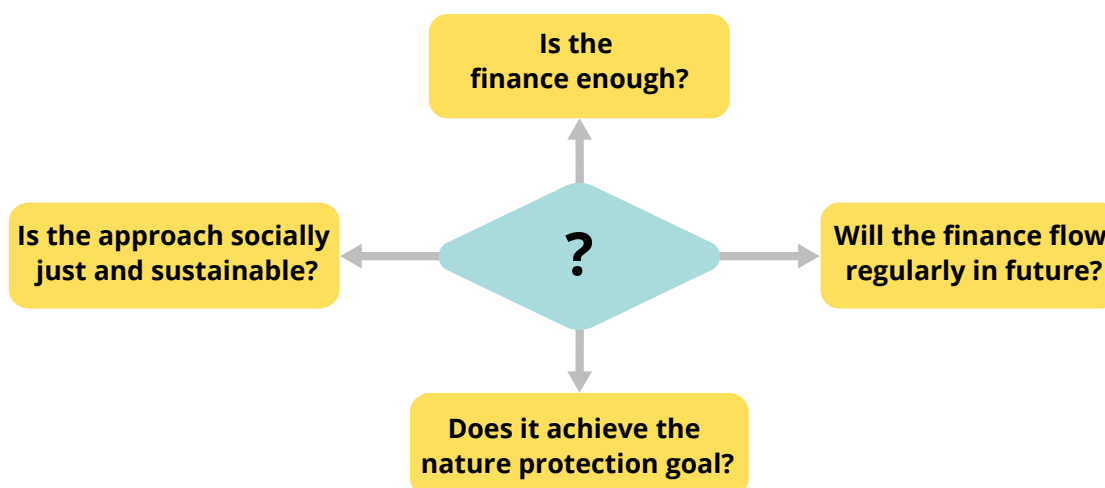


Figure 10. The dimensions of finance sustainability discussed. Finance should be sufficient and stable over time. It is most effective when it is targeted to the specific actions needed to protect biodiversity. However, conservation spending must also respect the social goals of equity, rights and livelihoods, both in their own right, and as key to the broad buy-in needed to make PAs fully successful.

However, simply focusing on finance in protected areas can miss half of the story. Protected areas largely need finance because of external human pressures. Investment in reducing those pressures can sometimes be more cost-effective than running high protected area enforcement budgets (see section on non-area-based measures). Much of the pressure can arise if local people pay the opportunity costs of protected areas without seeing any of the benefits. **Best practice for finance is usually to ensure stakeholder inclusion and a fair distribution of the protected area's monetary benefits to local peoples,**³⁶¹ for example as is being attempted with gorilla tourism³⁶² (see the Indonesia MPA case study).³⁶³ Admittedly, there are often trade-offs between human economic needs and biological conservation. But systems where local peoples see none of the protected area benefits, and yet bear many of its costs, are typically expensive and poorly cost-effective (especially if it alienates a large, expert local population).³⁶⁴

7.2 Sources of finance

Public goods are first financed by public spending. Individual or commercial actors have little private incentive to avoid degrading public natural capital, and so it largely falls to government to finance its protection, or to provide the missing incentive for private actors, or both. Environmental taxes, payments and regulations are the main examples of shifting private incentives.

The main source of public spending finance is **taxation and fees (T&F)**. Before anything else, CBD countries should consider whether a small increase in taxes and/or fees is merited to protect such a critical public good (an example of fees is an environmental charge for water use or logging). Put simply, countries could simply invest enough to recognise and preserve the value of their natural capital. Taxation can also ensure that the biggest burden falls on those most able to pay. However, taxation is never popular, often falls disproportionately on lower income groups, and other key priorities (such as poverty alleviation) can reduce the budget available for biodiversity. There are also differences across countries in how much taxation the national population can bear. Governments therefore need to find other sources of revenue for protected areas.

One alternative is to find additional sources of revenue for protected areas. A typical supplement to general taxation is **user-pays approaches**. Just as road taxes charge for the use of road network,

Case studies

Indonesia:**Community participation reduced protected area costs**

Scenario: A study of marine protected area costs in Indonesia found that if local communities are not included in protected area management, then enforcement costs were high (because managers would have to monitor both community activity and external actors such as poachers on their own).

Action: If the community were involved as stakeholders, then they both self-policed more.

Outcome: This helped to reduce poaching and other external-actor violations.

Namibia:**Valuation of protected areas improved both biodiversity finance and the national economy**

Scenario: Protected areas in Namibia had inadequate budgets, while the national economy also sought to grow.

Action and outcome: The potential economic contribution of the protected areas was valued and as a result, the protected area budget was quadrupled through a mixture of increased entry fees, tourist concessions, a game products trust fund and greater international investment. As a result, local livelihoods were enhanced and a new tourism concessions unit was set up

at ministry level, improving governance. The experience was extended nationally, leading to improvements in tourism development throughout the country, and a significant increase in the revenues generated by the national protected area system.

New Zealand:**Taxpayer funding, user-pays and concessions**

Scenario: New Zealand has an extensive system of protected areas that receive much of their support from tax-based government grant. By law, access to visitors has been free, but 15% of the total budget is nevertheless derived from charging for other uses (“concessions”).

Action: Charges were introduced, ranging from tourism to commercial filming, to horticulture. There is also a charge for facilities such as huts and campsites. Importantly, the governing authority (the Department of Conservation) can retain all the money raised in this way.

Outcome: This creates efficient motivation to seek out such revenues. This arrangement may be contrasted with many other countries, where governments take the majority of revenues raised by PAs and often, do not allow the PAs to retain sufficient revenue for basic management goals. One important caveat is that a large portion of the conservation budget is spent on maintaining visitor facilities.

protected areas can charge for use of the protected area. Visitor (tourism) fees are the most obvious example,³⁶⁵ and they could indeed be an important source of protected area finance by 2030.

Over recent decades (with the exception of the COVID-19 period and similar shocks), nature tourism has grown very rapidly,³⁶⁶ and several studies have found that visitors would be willing to pay more in entry fees.³⁶⁷ Entry fee income can be further boosted by value-added approaches e.g., through the sale of goods or food to visitors or by creating concessions (see the Namibia case study). Markets that levy a **charge for other ecosystem services generated by protected areas** are also developing (see the Costa Rica case study).³⁶⁸

For example, protected areas provide clean drinking water to many cities,³⁶⁹ a service that can be acknowledged and paid for (see the Quito Water Fund case study).³⁷⁰ Climate finance³⁷¹ is increasing and could provide large additional funding for the protection of nature. However, carbon payments for protected areas can be complex because to secure them, the recipient has to demonstrate ‘additionality’ (e.g., that the payments will prevent deforestation), which is difficult when the area is already protected.³⁷² They may be easier to apply in biological corridors (where they could become OECMs). All user-pays systems require expertise, investment, infrastructure and strong governance, and these preconditions can prevent lower-income countries from participating. For sustainability, development-focused government agencies could help lower-income countries capitalise better on the value of their own protected areas (natural capital).

Case studies

Costa Rica:**Payments for Ecosystem Services and privately-owned conservation land.**

Scenario: Costa Rica is a pioneer in developing funding approaches to conservation, including through use of Payments for Ecosystem Services (PES), which rewards owners of private land for maintaining their forest cover. PES can offer greater sustainability because they depend on the self-interest of individual landowners, lessening the impact of changing governments and donor priorities on financial sustainability in conservation.

Action: Initial financing for PES came from a road tax (i.e., largely through public expenditure). However, the initiative then attracted substantial international funding of over US\$20 million. A further US\$0.5 million per year was sourced by negotiating payments for watershed protection.

Improving sustainability and efficiency:

Reviews have suggested possible improvements in efficiency and sustainability: (1) increasing funding from ecosystem service users to reduce dependence on government and international financing; (2) targeting higher payments where they would most immediately curb the threat of deforestation (rather than offering low payments irrespective of threat to forests) – a step essential to achieving expansion of the protected area; (3) removing the barriers that inhibit small- and medium-sized landholders from participating in the program.; (4) better monitoring of the impacts of the programme.

Outcome: Contributed to a large reduction in deforestation and more sustainable funding for nature conservation.

Sri Lanka:**Agricultural subsidies: coordinating public spending across multiple ministries reduces cost.**

Scenario: Sri Lanka introduced a fertilizer subsidy to boost rice cultivation. However, the subsidy caused extensive environmental toxicity, increasing the budget demands on ministries responsible for biodiversity and health.

Action: The subsidy was therefore reformed, halving the subsidy budget for rice.

Outcome: Reform of the subsidy therefore reduced budget costs across three ministries (agriculture, health and environment), while improving biodiversity and human wellbeing.

Quito Water Fund:**Payments for ecosystem services fund nature protection.**

Scenario: The drinking water supply for many cities is purified by protected areas upstream, and protecting those areas is considerably cheaper than installing industrial purification. Hydro schemes also depend on natural ecosystems for consistent electricity generation.

Action: In Ecuador, a fund was set up to collect payments for ecosystem services that reflect these economic values.

Outcome: The fund receives capital from many stakeholders including water and power providers and uses that capital to fund biodiversity conservation.

A last important source of protected area finance is **funding by private or international donors**, including the Global Environment Facility, bilateral donors, and NGOs.³⁷³ This form of funding sometimes flows to the government and is sometimes directed to the protected area network more directly (although government involvement and co-financing remains typical).³⁷⁴ However, it has played a minor role to date. For example, an analysis of national protected area budgets suggests that such international assistance accounts for only 10-20% of existing budgets in LMICs (Low and Lower-Middle Income Countries) – bearing in mind that 30x30 budgets would be much higher.

In some lower-income countries, one of the main barriers to funding nature protection is the **debt burden**. A more complex source of finance for protected areas is to restructure this debt, so that more manageable borrowing is linked to a commitment to biodiversity conservation.³⁷⁵ Green banking, green bonds and blue bonds³⁷⁶ can also be used, along with more targeted options such as rhino bonds.³⁷⁷ Currently, however, green bonds are strongly linked to carbon benefits, and so the same barriers exist: the need to demonstrate strong governance (especially for debt management), political commitment, financial knowledge and additionality.

Multiple other sources and combinations of possible finance exist, which are too numerous to summarise in a few pages but have been summarised elsewhere.³⁷⁸

The amount of finance needed can also be reduced by simply redirecting existing financial resources away from some other use and towards conservation. Reducing subsidies for nature-damaging activities such as unsustainable agriculture has been suggested as a way of releasing funds for conservation.³⁷⁹ However, it is important to maintain the essential social and economic support provided by the subsidies, otherwise a perverse incentive can arise where agriculturalists are forced into greater extensification, leading to deforestation e.g., through a loss of government assistance for yield-enhancing inputs. The most efficient subsidy reform occurs when the original nature-damaging subsidy is not achieving its own goal, and so government resources are essentially being wasted (see the Sri Lanka case study).

7.3 Sustainability, effectiveness, and the importance of the wider context

Financing solutions for 30x30 will not achieve lasting improvements in biodiversity and habitats unless they are sustainable and the money is deployed effectively. Indeed, the ~US\$100 billion annual cost of 30x30 could be much lower if barriers to effectiveness were removed. Here, we focus on four dimensions of financial sustainability. Funding must be (i) sufficient to achieve its aims and (ii) constant over time. Funding must also be “sustainable” in the deeper sense of *advancing the social goals of the CBD and the Sustainable Development Goals (SDGs)*, including (iii) advancing biological conservation, and (iv) addressing human wellbeing, livelihoods, rights and equity and capacity needs, as affected by biodiversity conservation. We also emphasise that sufficiency of protected area finance is only a small part of the total picture.

None of the finance sources described are sustainable on their own. Tax-based government spending can vary with the priorities of an administration. Income from tourism and visitors can suddenly collapse, as seen during the COVID-19 pandemic. Carbon prices can vary. Philanthropy can also lack long-term sustainability as a solution. Country governments therefore need a **portfolio approach** to funding 30x30: several sources of finance should be available, so that sudden fluctuation in one source is not catastrophic. It is often more effective to distribute the management and funding of a national protected area network across multiple levels and agents, from the state to local government, to Indigenous Peoples and Local Communities, to private and NGO-owned reserves, and to ensure that the finance solution is appropriate to the context where it is employed. However, these different levels should work in concert and support each other.

For example, IPLCs are often highly effective managers of their natural landscapes, make considerable financial contributions to their conservation,³⁸⁰ and are therefore likely to have a large role to play in 30x30.³⁸¹ However, powerful threats (such as armed invasion by illegal miners) could suddenly overwhelm local or IPLC capacity and require back-up resources from the state. Blended approaches³⁸² (mixing public and private finance and management) can similarly work effectively, with public and international finance opening the door to more risk-averse private sources of funding, and public-private partnerships³⁸³ increasing efficiency and finance availability. African Parks³⁸⁴ similarly shares the responsibility for protected areas with country governments and local peoples in several African countries.

Political trends can cause fluctuations in protected area funding derived from central treasuries. Constancy and sufficiency of finance are therefore enhanced by some form of ring-fencing (guaranteed minimum budgets) for protected areas. An alternative approach is to have an autonomous third party administer the funding, incorporating checks and balances across a range of funders. For example, conservation trust funds³⁸⁵ provide greater funding constancy, in part because their constitutions mandate that finance should flow specifically to biodiversity. Parastatal organizations, if given sufficient autonomy, can achieve similar ring-fencing effects.

A back-stop is also useful in case of large shocks. For example, national governments often intervene to prevent cashflow crises in all parts of the economy, and the same approach could be applied to sudden drops in protected area finance. Given limited capacity in lower-income countries to bail out a protected area cashflow shocks, one option could be to maintain an international emergency fund for such events, not least because climate and biodiversity crises are of global importance, with the benefits of environmental stability enjoyed by all.

Incentives and regulations in other ministries can make protected area finance ineffective, hindering its ability to reach/achieve its goals. For example, in Sri Lanka, expensive agricultural subsidies harmed biodiversity, without greatly improving agricultural livelihoods. Reforming such subsidies therefore saves money twice over - by reducing spending on both agriculture and biodiversity (Sri Lanka case study). Governments can make considerable cost savings by having ministries coordinate and share responsibilities on biodiversity goals. Indeed, many protected areas allow some level of natural resource extraction and in those cases, it makes sense for the Protected Area Authority to work with the Fisheries or Forestry ministries, who already have equipment and training to enforce natural resource-use regulations. This is far more cost-effective than each ministry operating in isolation.



7.4 Policy brief

Funding remains a challenge, and there are risks inherent in a single funding models; for example, countries heavily reliant on tourism revenue suffered particularly during the COVID-19 pandemic.

- Most funds for protected areas start with taxation and fees at a national level, but other models are available including user pays, payment for ecosystem service schemes, funding by private or international donors and innovative approaches such as reducing a country's debt burden.
- A portfolio approach is recommended, whereby a range of funding options are in place and operating simultaneously, to avoid risks from a single funding stream.

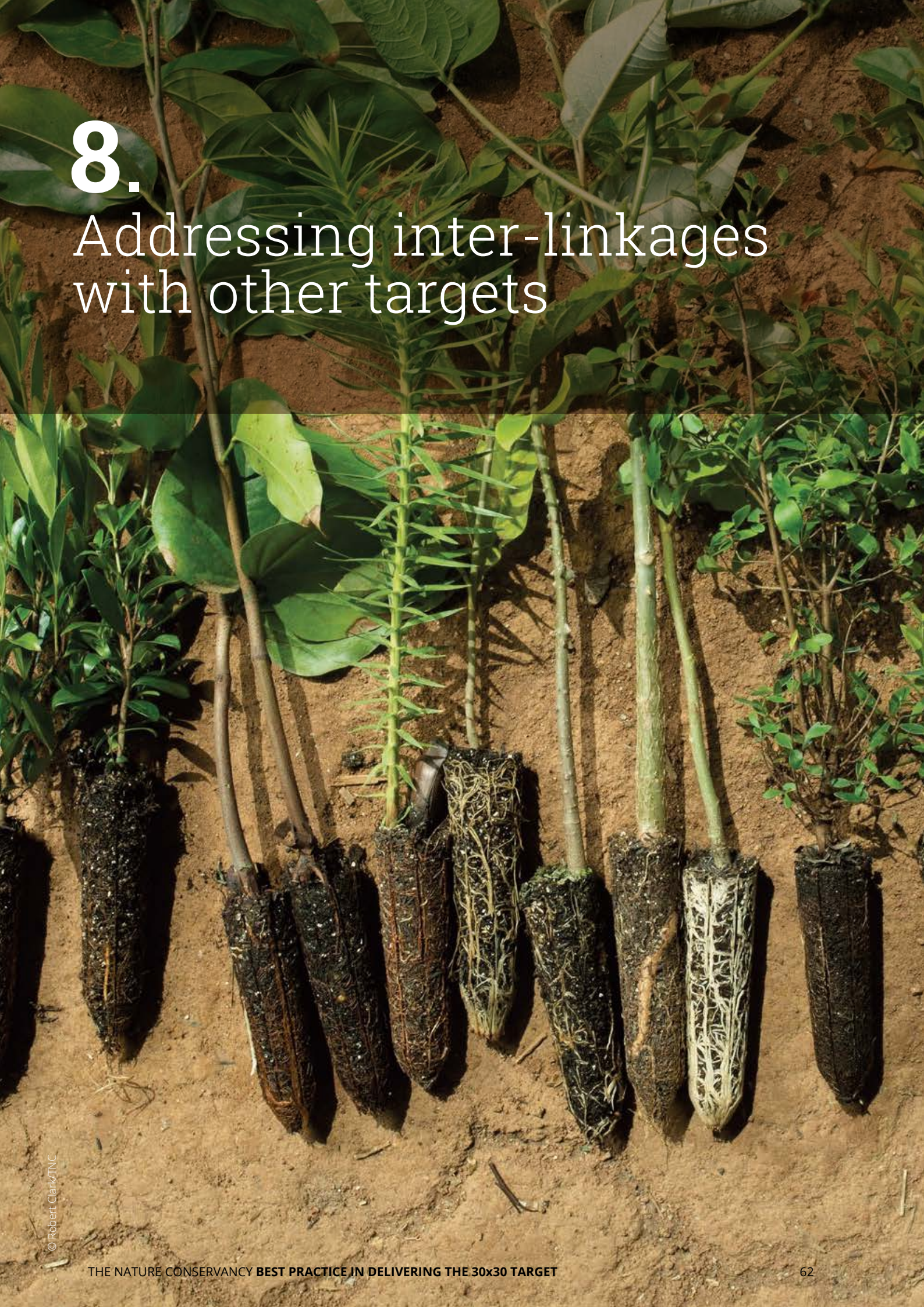


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THE NATURE CONSERVATION SOCIETY OF INDIA PRACTICE IN DELIVERING THE 30X30 TARGET

8.

Addressing inter-linkages with other targets



8. Addressing inter-linkages with other targets

Costs of area-based conservation are more than offset by benefits from the ecosystem services those areas provide, including mitigation of climate change, so that investments simultaneously address needs under the CBD, Paris Agreement and the UN Sustainable Development Goals (SDGs).

Protected and conserved areas provide a wide range of ecosystem services,³⁸⁶ including contributions to food and water security, health benefits, disaster risk reduction, climate change mitigation and adaptation³⁸⁷ and many cultural services and benefits to faith groups. Substantial gaps in our understanding of how to measure such benefits remain however. They are a component – sometimes the dominant component – in achieving several other environmental priorities. The 30x30 target impacts and influences many other targets within the draft Global Biodiversity Framework. More generally, it supports several of the SDGs, which are also operating to a 2030 deadline and require very substantial investment.³⁸⁸ Investment is therefore not solely addressing biodiversity concerns but also making substantial inputs to identified investment needs in other sectors. In the following section, the main links to the CBD targets are drawn out in two summary tables. Figure 11 shows links between protected and conserved areas and some important global targets and commitments.

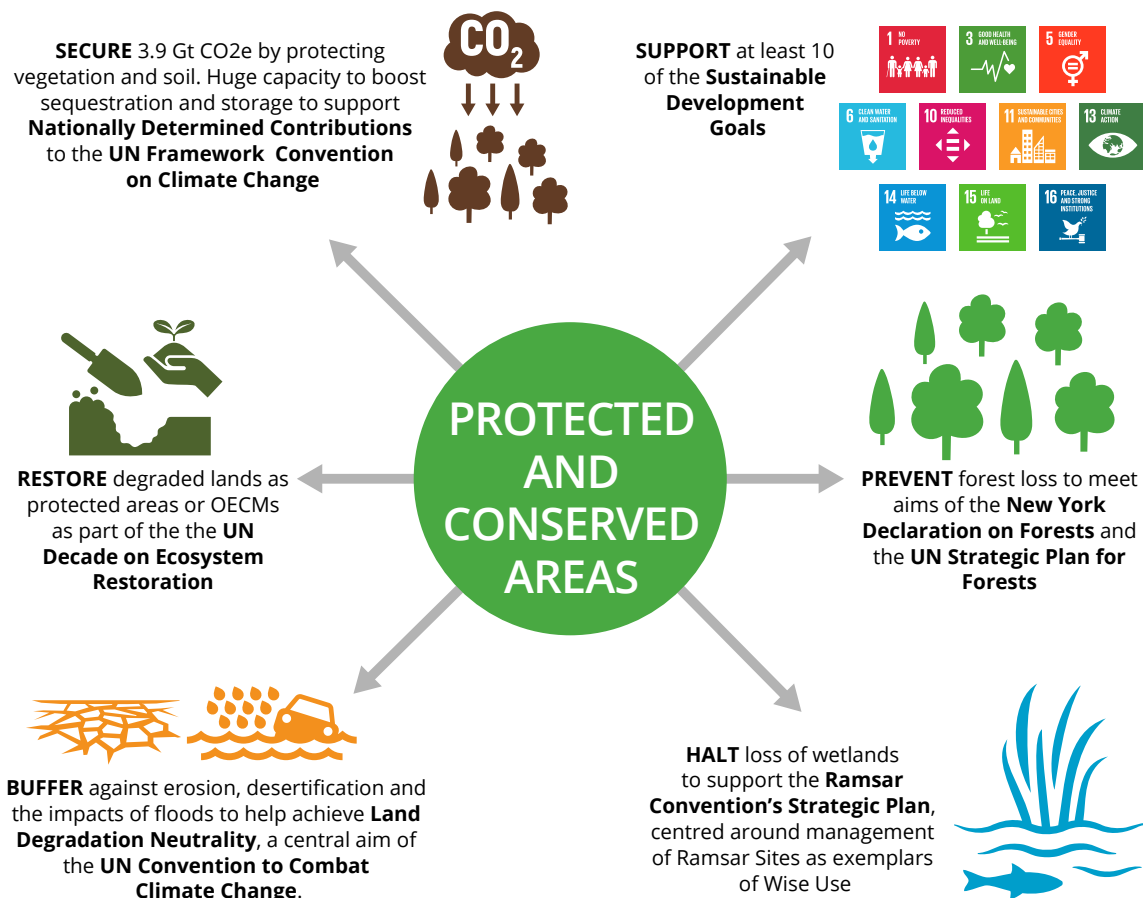


Figure 11: How protected and conserved areas are contributing to other global targets

8.1 Links to other targets of the Draft Global Biodiversity Framework

The Global Biodiversity Framework is still in draft, and it is likely that some or all of the targets will be altered to some extent, but governments appear to be increasingly coming to consensus about the main draft targets. In Table 9 below, contributions of Target 3 to other GBF targets are listed in green; other GBF targets that have significant implications on the way that draft Target 3 is implemented are listed in brown. Language draws on the official first draft of the GBF and is subject to change.

Table 9: Links between draft Target 3 and other targets in the draft Global Biodiversity Framework

Draft Global Biodiversity Framework Target	Link to Draft Target 3 of the GBF
<p>1. Ensure that all land and sea areas globally are under integrated biodiversity-inclusive spatial planning addressing land- and sea-use change, retaining existing intact and wilderness areas.</p>	<p>Multiple land and water-use strategies will be needed within systematic conservation planning and protected and conserved areas will play a major role particularly within intact³⁸⁹ and wilderness³⁹⁰ areas, while integrated approaches are needed to increase connectivity³⁹¹ between such areas, and to mainstream biodiversity conservation into sectoral activities. <i>T3 elements: biodiversity value, ecological representation, integration.</i></p>
<p>2. Ensure that at least 20% of degraded freshwater, marine and terrestrial ecosystems are under restoration, ensuring connectivity among them and focusing on priority ecosystems.</p>	<p>Restoration needs to take place across the whole landscape and seascape, including within protected areas³⁹² and OECMs,³⁹³ and area-based conservation is itself a strategy for stimulating restoration,³⁹⁴ particularly through natural regeneration. Protected areas can also act to prevent inappropriate “restoration” activities on value habitats such as natural grasslands. <i>T3 elements: well-connected.</i></p>
<p>4. Ensure active management actions to enable the recovery and conservation of species and the genetic diversity of wild and domesticated species, including through ex situ conservation, and effectively manage human-wildlife interactions to avoid or reduce human-wildlife conflict.</p>	<p>Management actions for conservation of species and genetic diversity are required throughout, but area-based conservation remains the single most important tool,³⁹⁵ and many species rely on protected areas for their survival.³⁹⁶ <i>T3 element: effective management.</i></p>
<p>5. Ensure that the harvesting, trade and use of wild species is sustainable, legal, and safe for human health.</p>	<p>Wildlife crime challenges protected areas, especially when species with high economic value are focused in or confined to protected areas.³⁹⁷ This risks increasing militarisation of protected areas,³⁹⁸ endangers rangers³⁹⁹ and has effects on local communities. Action is needed at the buyers’ end as well as in the field.⁴⁰⁰ T5 also addresses sustainable use of wild species, which is applicable to some PAs and OECMs. <i>T3 element: effective management.</i></p>

Draft Global Biodiversity Framework Target	Link to Draft Target 3 of the GBF
<p>6. Manage pathways for the introduction of invasive alien species, preventing, or reducing their rate of introduction and establishment by at least 50%, and control or eradicate invasive alien species to eliminate or reduce their impacts, focusing on priority species and priority sites.</p>	<p>Some protected areas, particularly offshore islands, are at high risk from invasive species but also, due to their isolation, provide a controlled environment⁴⁰¹ in which eradication policies can be applied to invasive species.⁴⁰² <i>T3 element: effective management.</i></p>
<p>7. Reduce pollution from all sources to levels that are not harmful to biodiversity and ecosystem functions and human health, including by reducing nutrients lost to the environment by at least half, and pesticides by at least two thirds and eliminating the discharge of plastic waste.</p>	<p>Pollution threatens many protected areas; threats are often underplayed.⁴⁰³ Acidification is rising in some areas, pesticides⁴⁰⁴ and nitrate⁴⁰⁵ impact many protected areas, and plastic pollution threatens marine life inside and outside marine protected areas.⁴⁰⁶ Protected and conserved areas provide ideal sites for monitoring progress on Target 7. <i>T3 element: effective management.</i></p>
<p>8. Minimize the impact of climate change on biodiversity, contribute to mitigation and adaptation through ecosystem-based approaches, contributing at least 10 GtCO₂e per year to global mitigation efforts, and ensure that all mitigation and adaptation efforts avoid negative impacts on biodiversity.</p>	<p>Protected and conserved areas have key roles to play in mitigating climate change (through carbon sequestration and storage) and in adaptation to the existing and expected changes.⁴⁰⁷ Management strategies within protected areas – and particularly OECMs – will increasingly need to address climate issues in terms of vegetation retention, peat rewetting etc. (Note though that ecosystem approaches should not be an excuse for inaction on reducing emissions.)⁴⁰⁸ <i>T3 element: ecosystem services.</i></p>
<p>9. Ensure benefits, including nutrition, food security, medicines, and livelihoods for people especially for the most vulnerable through sustainable management of wild terrestrial, freshwater and marine species and protecting customary sustainable use by Indigenous Peoples and Local Communities.</p>	<p>While some conservation will limit agricultural or fisheries expansion in biodiversity-rich sites, some protected areas and many OECMs provide food (fish,⁴⁰⁹ also other wild foods⁴¹⁰ and low-level grazing). Many MPAs also replenish fish stocks, with fish spilling outside, keeping supplies for local communities.⁴¹¹ <i>T3 elements: ecosystem services and integrated into wider land- and seascapes</i></p>
<p>11. Maintain and enhance nature's contributions to regulation of air quality, quality and quantity of water, and protection from hazards and extreme events for all people.</p>	<p>Protected areas and OECMs are valuable, often sole, sources of many ecosystem services – water⁴¹² (quality and sometimes quantity),⁴¹³ disaster risk reduction (floods, landslip, coastal protection)⁴¹⁴ and carbon.⁴¹⁵ In the ocean they increase biomass and security of marine proteins, e.g., by recovering fish stocks. <i>T3 element: ecosystem services.</i></p>

Draft Global Biodiversity Framework Target	Link to Draft Target 3 of the GBF
<p>12. Increase the area of, access to, and benefits from green and blue spaces, for human health and well-being in urban areas and other densely populated areas.</p>	<p>Nature reserves are known for their role in physical and mental health, especially near to urban centres: the “green gym” concept.⁴¹⁶ Protection of natural areas is linked to the prevention of future pandemics.⁴¹⁷ <i>T3 element: ecosystem services.</i></p>
<p>13. Implement measures at global level and in all countries to facilitate access to genetic resources and to ensure the fair and equitable sharing of benefits arising from the use of genetic resources, and as relevant, of associated traditional knowledge, including through mutually agreed terms and prior and informed consent.</p>	<p>Protected areas provide important protection for genetic resources, particularly crop wild relatives,⁴¹⁸ many of which are under threat in the wider environment. Planning for genetic resources needs to be factored more closely into protected area planning.⁴¹⁹ <i>T3 element: ecosystem services.</i></p>
<p>14. Fully integrate biodiversity values into policies, regulations, planning, development processes, poverty reduction strategies, accounts, and assessments of environmental impacts at all levels of government and across all sectors of the economy, ensuring that all activities and financial flows are aligned with biodiversity values.</p>	<p>Will be essential in reducing threats to protected areas and OECMs. <i>T3 element: integrated into wider land and seascape.</i></p>
<p>18. Redirect, repurpose, reform or eliminate incentives harmful for biodiversity, in a just and equitable way, reducing them by at least US\$500 billion per year, including all of the most harmful subsidies, and ensure that incentives, including public and private economic and regulatory incentives, are either positive or neutral for biodiversity.</p>	<p>Incentive reforms be needed to reduce drivers that degrade protected areas and OECMs, particularly fishing subsidies that impact on marine protected areas, subsidies that encourage further vegetation clearance and agricultural policies driving intensive livestock production.</p>
<p>19. Increase financial resources from all sources to at least US\$200 billion per year, including new, additional and effective financial resources, increasing by at least US\$10 billion per year international financial flows to developing countries, leveraging private finance, and increasing domestic resource mobilization, taking into account national biodiversity finance planning, and strengthen capacity-building and technology transfer and scientific cooperation, to meet the needs for implementation, commensurate with the ambition of the goals and targets of the framework.</p>	<p>Adequate, secure funding is essential to meet the target of expanding coverage and increasing efficiency and equity of protected areas and OECMs.</p>
<p>20. Ensure that relevant knowledge, including the traditional knowledge, innovations and practices of Indigenous Peoples and Local Communities with their free, prior, and informed consent.</p>	<p>Requirements for FPIC and use of local knowledge in planning and monitoring mean that protected area identification, designation, planning and management will in many countries need to evolve radically from traditional approaches. <i>T3 element: equitable management.</i></p>
<p>21. Ensure equitable and effective participation in decision-making related to biodiversity by Indigenous Peoples and Local Communities, and respect their rights over lands, territories and resources, as well as by women and girls, and youth.</p>	



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8.2 Links to targets of the UN Sustainable Development Goals

The key role that biodiversity plays in the delivery of many of the SDGs has been analysed and collated.⁴²⁰ It is estimated that building on the links between biodiversity and ecosystem services can support achieving over 40 of the 169 targets across most SDGs, including both human wellbeing and environmental goals.⁴²¹ Research shows, for instance, that investment in ecological infrastructure in South Africa can play a key role in achieving both the national development agenda and the SDGs.⁴²²

Well-designed approaches to effective area-based conservation have proven to deliver synergies between multiple SDGs and address trade-offs between SDGs in a sustainable manner, supporting sustainable development beyond SDG 14 and SDG 15.^{423, 424} There are clear links between the SDGs and the wider biodiversity aims of the CBD in terms of providing ecosystem services.^{425, 426} However, there are also tensions and trade-offs between meeting some social and economic goals while simultaneously ensuring the delivery of the underpinning environmental goals⁴²⁷ and indeed tensions between various of the GBF targets. Balancing these is critically important to the overall success of the SDGs, including within protected area management. Table 12 in Appendix 5 outlines some of the key links.

8.3 Ecosystem services and protected areas.

Links to other global environmental and social targets, and particularly the SDGs (see Table 12), cluster around a range of ecosystem services. The role of protected areas in delivering a range of ecosystem services has been recognised for many years;⁴²⁸ more recently this has also become an important issue with respect to recognising and managing OECMs.⁴²⁹ The two sorts of area-based conservation interact with ecosystem services in slightly different ways:

- **Protected areas** usually provide ecosystem services as a by-product of management. These are sometimes only recognised a long time after the area was originally designated, e.g., most current protected areas were set up before carbon sequestration became a major focus of attention. But the associated management and governance structures surrounding protected areas means that they often provide very effective vehicles for delivery of a wide range of ecosystem services.
- **OECMs** in contrast will often have some form of ecosystem service as a reason for their management, such as watershed protection, disaster risk reduction, with biodiversity conservation as a by-product. In other cases, both biodiversity and ecosystem services will be by-products of an OECM, for instance in the case of military training areas recognised as OECMs.

These services can also help to support protected areas, through Payment for Ecosystem Services (PES) schemes, including in particular water services and carbon storage where protected areas have a huge potential to supply secure greenhouse gas mitigation services.⁴³⁰ Understanding the role and importance of ecosystem services is increasingly important for protected area managers, both in terms of identifying possible PES schemes but also to understand what Indigenous Peoples and Local Communities might need and want from the area. Various tools for measurement exist,⁴³¹ ranging from complex, software driven approaches to methods using simple stakeholder workshops.⁴³² The importance of ecosystem services in selection and management of protected areas and OECMs is likely to continue to increase.



8.4 Policy brief

A strong and effective system of area-based conservation provides many additional benefits, including many forms of ecosystem service. A number of these would need to be met through other forms of public funding. It is important that agencies responsible for protected areas and OECMs report against these multiple benefits and ensure that the wider benefits are fully recognised. Effective implementation of Target 3 on protected areas and OECMs contributes to the achievement of other global environment and social targets.

Box 12: Some examples of key ecosystem services from area-based conservation⁴³³

Provisioning services

- Protection of crop and livestock wild relatives, pollinators and other biodiversity for food and agriculture
- Supply of wild food from permitted Indigenous hunting, fishing, plant collection, fodder gathering
- Additional water flow from e.g., tropical cloud forests, paramos ecosystems
- Collection of medicinal herbs

Regulating services

- Carbon storage and sequestration in vegetation and soils
- Maintaining water quality and flow, protection of groundwater sources
- Disaster risk reduction of extreme weather events and aftershocks from earth movements
- Soil stabilisation and pasture retention in arid environments

Cultural services

- Protection of sacred natural sites and sacred landscapes and rivers
- Aesthetic and cultural services
- Recreational benefits
- Support for physical and mental health

Supporting services

- Photosynthesis
- Soil formation
- Nutrient cycling

Any of these and other ecosystem services could be available from either protected areas or OECMs, although motives for management will differ. Many ecosystem services from protected areas have only really been recognised or valued subsequent to protection, although this situation is changing. Many OECMs will have been established for their ecosystem services, with biodiversity conservation as a by-product.

So, for example, a supply of clean water could come as a result of managing a national park to retain forest cover or natural wetlands. Alternatively, protection of a watershed for water security purposes might also provide ecosystem conservation and result in recognition of the areas as an OECM.

Ecosystem services are likely to become increasingly important amongst the reasons for area-based conservation in the future.

9.

Taking a landscape and seascape approach



9. Taking a landscape and seascape approach

Protected and conserved areas are cornerstones of biodiversity conservation strategies but will not work if they are implemented in isolation. Broad-scale approaches are needed to integrate area-based conservation within wider landscapes and seascapes. Experience in landscape and seascape approaches is growing.

Protected and conserved areas are only part of a response to environmental degradation,⁴³⁴ which requires fundamental changes in the way that society, industry and commerce views the natural world. Even if the 30x30 target is achieved, sustainable management of the 70% of the planet not in protected and conserved areas needs to be strengthened, for instance under other CBD GBF Targets such as 1 (system planning), 5 (sustainable use of wild species) and 10 (sustainable management of areas under agriculture, aquaculture and forestry). Protected and conserved areas will be suboptimal and will lack climate resilience if they are isolated amidst inhospitable landscape and seascape, particularly if there are cross-border impacts like unsustainable harvesting of wild species, pesticide and acidic pollution, incursions by poachers or miners, or in marine areas by deoxygenated dead zones, areas undermined by illegal fishing activities and so on.

Landscape approaches describe a way of managing the landscape or seascape that involves collaboration among multiple stakeholders, with the purpose of achieving sustainable landscapes and seascapes.⁴³⁵ Discussed theoretically for many years, landscape approaches are now starting to be enacted on the ground. Such collaborations take time to develop, and almost inevitably involve trade-offs between what various stakeholders need and want, but if negotiations can reach consensus on a way forward, they have a strong basis for action. Ensuring that the existing and expanded systems of protected and conserved areas are fully integrated into wider landscapes and seascapes will be a critical issue for 30x30.

Box 13: The 4 Returns framework

The 4 Returns Framework combines methodologies developed by leading organisations and people that have been working in the area of landscape management and restoration for over three decades, and is being driven by three NGOs, the Landscape Finance Lab, Commonland and Wetlands International. In theory the same framework could be applied to seascapes.

The 4 Returns Framework offers a simple formula to create a common understanding of what a healthy landscape means. Landscapes are complex: diverse groups of people, interests, ideas and cultural meaning are attached to lands and waters. The 4 Returns Framework connects ecology, community spirit and culture, and long-term economic sustainability at the landscape level. The approach allows people from across the spectrum — government, business and communities — to co-create and deliver a common

vision for a resilient landscape. Together, a diverse community can start imagining how a landscape can become sustainable, liveable and financially attractive to as many people as possible. It is a conceptual and practical framework that aims to help stakeholders achieve **4 returns** (inspiration, social returns, natural returns, financial returns), by following five processes (the **5 elements** – landscape partnership, shared understanding, landscape vision and collaborative planning, taking action, and monitoring and learning), within a multifunctional landscape (the **3 zones** – natural, combined and economic zones). This transformative approach takes place over a realistic time period (**minimum 20 years**). The process recognises the importance of inclusive governance and the role of laws and policies, and the need for finance to fund the transition to landscape restoration and markets, to ensure the long-term security of sustainable enterprises.

Box 14: Grassland, savannah and rangeland

Grassland, savannah and rangeland ecosystems are under extreme pressure from conversion, degradation and climate change. They cover 54% of the land⁴³⁶ yet over 40% have already been converted,⁴³⁷ and most of the rest is under some form of management. From 1998 to 2013, 19% of grasslands, and 27% of rangelands showed persistent declining productivity trends.⁴³⁸ Grasslands are poorly conserved, with in particular only 4.5% of temperate grasslands in protected areas,⁴³⁹ leaving the biome liable to fragmentation and loss.⁴⁴⁰ National laws are often too weak to provide security,⁴⁴¹ and international treaties often omitting mention of these ecosystems.

Yet ecosystem services from grasslands are far more valuable than often recognised.⁴⁴² They provide carbon stores to mitigate climate change,⁴⁴³ possibly more reliable than forests in places at high fire risk,⁴⁴⁴ with huge restoration potential.⁴⁴⁵ Grasslands reduce desertification⁴⁴⁶ and dust storms, protect water supplies⁴⁴⁷ and support food security.⁴⁴⁸ A quarter of the world's people live in the biome,⁴⁴⁹ and grasslands contain many sacred landscapes.⁴⁵⁰

Losses come from conversion to agricultural crops⁴⁵¹ and tree plantations,^{452, 453} the latter sometimes under the auspices of "reforestation policies";⁴⁵⁴ from reseeding for intensive livestock production;⁴⁵⁵ and through the impacts of urbanisation,⁴⁵⁶ transport infrastructure,⁴⁵⁷ mining⁴⁵⁸ and other factors. Equally serious, but harder to measure, are various forms of *degradation*, caused by changes in grazing pressure (both over-⁴⁵⁹ and under-grazing), drainage of wet grasslands, poor irrigation leading to salinisation,⁴⁶⁰ agrochemical^{461, 462} and other pollution, invasive species⁴⁶³ and recreational activities such as off-road driving.⁴⁶⁴ Climate change increases both droughts⁴⁶⁵ and floods, boosting the risk of disastrous fires⁴⁶⁶ and shifting the baseline for entire ecosystems.

Grassland, savannah and rangeland ecosystems are also places where conservation can often be integrated well with sustainable use, through controlled grazing for example, and are perhaps particularly suited to some forms of OECM development. Ensuring that the grassland biome does not get forgotten in 30x30 is a major priority for planners and communities.



9.1 Policy brief

All the targets of the Global Biodiversity Framework are required to conserve biodiversity and ecosystem services effectively. The benefits from protected and conserved areas rely on support from restoration and sustainable management over the rest of the planet.

Managers of protected and conserved areas – whether state employees, Indigenous Peoples, local communities, private individuals or companies – therefore need to be part of more broadscale approaches to conservation. This means looking beyond the boundaries of the site to consider the whole landscape and seascape mosaic and how different needs and wants can be balanced, which in turn will require careful negotiation and trade-offs.

Moving from site to landscape has implications for the way that conservation professionals are trained, for the indicators used to monitor progress, and for the many other stakeholders operating in the landscape or seascape. Ultimately it means that conservation needs to move from a niche activity to a key component of mainstream life.



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10.

Preparing for 30x30: A situation analysis, negotiation and preparedness

10. Preparing for 30x30: A situation analysis, negotiation and preparedness

Figure 12 lays out steps that authorities (in practical terms, this means governments, but ideally also many other institutions) need to take once a decision has been made to implement 30x30.

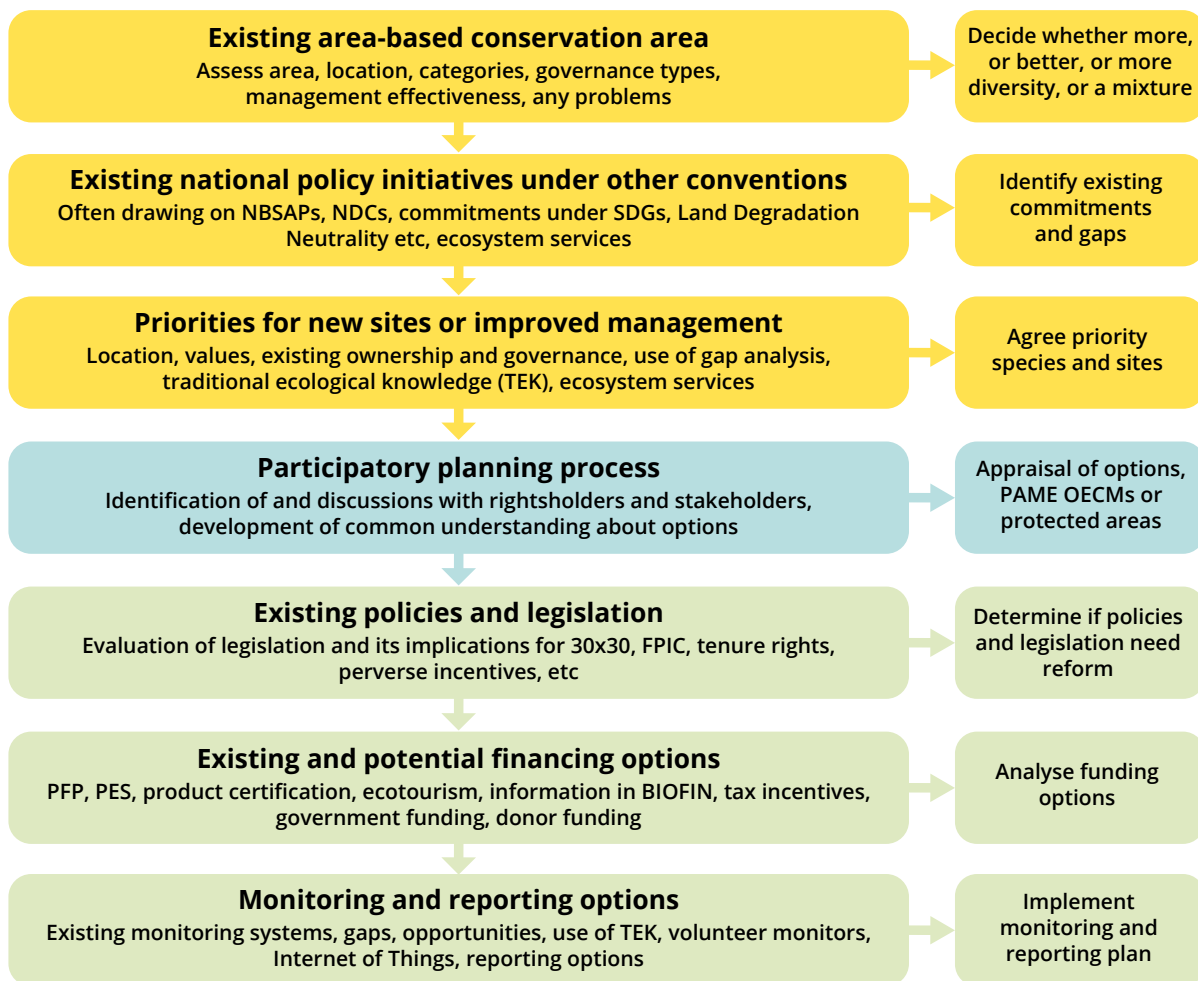


Figure 12: First steps in implementing 30x30

Steps 1-3 – yellow boxes – a situation analysis to find what area-based conservation is present and its effectiveness, any extra effort committed to through other initiatives, where important gaps remain in management effectiveness and area-based conservation, and the status and governance in areas with potential as additional sites (or current sites that are suboptimal). Assessment should be situated within broader planning exercises that consider other needs from available natural resources.

Step 4 – blue box – summarises the core activity; a thorough and participatory process to agree on where and how 30x30 might be implemented.

Steps 5-7 – green boxes – examines legislative, financial, monitoring and reporting needs (tenure, governance, enabling policies, incentives, management, capacity, financing) for the process once agreed.

10.1: A step by step guide

Presuming governments sign up to 30x30 through agreement of CBD draft Target 3 (and noting that many have already committed to this target in advance of the GBF), three stages are required in preparation.

1. **Situation analysis:** to understand what is already present, what has already been committed to, and to identify priorities for further action.
 - **Existing network of protected and conserved areas:** Analysis starts by determining how much area already meets the 30x30 target. This involves finding out how much land and water is already in protected and conserved areas, and whether the management of these sites meets the wider requirements of 30x30.

**Points to note:* some governments have tended to ignore non-state protected areas (privately protected areas, ICCAs etc) but these need to be factored in at this stage, which will increase total area in some countries, provided they meet relevant criteria relating to Target 3. Conversely, some governments are recognising that a proportion of their existing protected areas are not delivering nature conservation benefits well enough, or equitably enough, to truly qualify for 30x30.
 - **Existing commitments:** Next, it is important to understand what is already committed to via different institutions and processes; some of the decisions may already have been taken, or some of the future decisions made under efforts to achieve 30x30 are likely to benefit other areas of government. A clear understanding of overlaps and multiple benefits is important in making the political case for protected and conserved areas. Likely areas of overlap have been highlighted in section 8 and Figure 11.
 - **Gap analysis and priorities:** The information gained in the first two stages can be put together, along with data on location of important and/or threatened species, to identify gaps in the existing system of protected and conserved areas.

**Points to note:* gaps include both gaps in area coverage and gaps in effective and equitable management. Information should be drawn from multiple sources, including from relevant Indigenous Peoples and Local Communities (Traditional Ecological Knowledge). And importantly, 30% is a *global* target, not every country will necessarily meet this (nor need to), although the implication is that some other countries will need to devote more than 30% to make up the total. The final result will be a set of priority sites.
2. **Participatory planning:** The situation analysis outlines opportunities and constraints. A wide range of people should have already been involved in this process; a plan presented purely by “experts” will have much less possibility of gaining traction than one in which many stakeholders and rightsholders have already had the chance to provide their opinion.
 - The planning – likely the longest, most complex and time-consuming part of the process – is an engagement with many people, overwhelmingly those who will be directly affected by any plans, to work out if and how conservation moves forward. It is often a process of trade-offs and negotiation, between the needs and wants of people with ownership or rights over particular land and ocean areas and the wider needs of society and the environment. It will entail agreeing mutually acceptable management plans and often also compensation packages for benefits forgone. In the case of Indigenous Peoples, Free, Prior and Informed Consent is required. The expansion implied by the 30x30 target will generally be addressed in different ways than protected area planning and implementation in the past.

3. **Enabling conditions:** agreeing where and how to introduce, or increase the effectiveness of, area-based conservation is an important step forward. However, actions need to be supported, financed and measured over time.
 - **Policies and legislation:** Laws in many countries have evolved piecemeal and in post-colonial countries often still contain many aspects originally introduced under colonial rule. Laws may no longer be fit for purpose, perhaps too restrictive, inconsistent, contradictory, not giving the flexibility needed to facilitate a rapid expansion of protected and conserved areas or are too slow and bureaucratic. Examples include colonial-era laws that insist all inhabitants are relocated if a protected area is created, whether or not they are interfering with conservation management. Laws can take a long time to revise, policies are more flexible, but both need careful examination in the preparation phase for 30x30.
 - **Financing options:** Policies also need to be paid for. Worldwide, funding for conservation has been failing to keep up with the growth of protected areas, or the expectations of what those areas are supposed to supply. Finding adequate, long-term funding is a challenge; we summarise some of the options in section 7 above. A clear and realistic financing plan and capacity development plan should be in place before any development. This doesn't mean that all financing has been secured, but that there is an understanding of needs, some concrete proposals for how these will be met, and enough money to initiate action.
 - **Monitoring and reporting:** Monitoring systems are often under-valued; the first thing to be cut if there is a budget squeeze. But research shows that a good monitoring system is often the single most important element in a successful conservation and development project. Agreeing the indicators amongst stakeholders helps to ensure that a critical mass of people support the objectives. Monitoring these indicators – which need to cover biodiversity, ecosystem services and other social values – helps to track success and failure over time and to trigger management changes (adaptive management) if core values are declining. A thorough understanding of what does and does not work also helps generate lessons to facilitate future projects and scale up ambitions.



11.

Summary of key points

11. Summary of key points

The terms of reference from DEFRA included ten questions, the following sections answers each of these in turn and thereby serves to summarise key points from the report as a whole.

1. Which governance and management frameworks including national, local and IPLC and stakeholder-led frameworks, have proved most successful?

Success depends on finding the right combination of management and governance frameworks for a particular situation; there are over a hundred possibilities and we provide guidance for making smart choices. In general, the value of non-traditional approaches (locally owned, IPLC-driven, privately protected areas etc.) has often been underestimated. Operationalising and where necessary scaling up approaches will be a critical element in strengthening and expanding protected and conserved areas.

2. What are the most cost-effective ways of implementing effective area-based conservation policies?

We interpret “cost effective” as “*delivering long term biodiversity conservation, whilst meeting human rights and equity considerations, as efficiently as possible*” and needs to consider both direct and indirect costs. In general, taking the time to ensure that local rightsholders and stakeholders support, and where possible initiate and drive, the type of area-based conservation enacted will be more effective in the long-term, although start-up may take longer.

3. How can the critical gaps in ecological coverage and connectivity, and challenges with management effectiveness in the existing global PA system, be addressed in the most cost-effective way?

Effectiveness means being strategic about where to invest time and resources. In some situations, increasing effectiveness of existing protected areas may be more useful than identifying new protected areas, particularly where a country already has a large protected area estate. Bigger areas may not necessarily be better even though per hectare management costs may be lower, although wide-ranging species will need these large reserves. Smaller reserves need to be connected into a wider system. Protected areas close to cities may have higher running costs but produce more benefits in terms of recreation and exercise, and so on. We have developed a decision-tree to help governments decide how best to fill gaps, and many datasets and tools exist, summarised here.

4. What are the cost implications of providing support to strengthen IPLC custodianship over their lands, territories, and resources, compared to other forms of area-based measures that lead to outcomes beneficial for biodiversity?

There is now strong evidence that IPLC custodianship can and does provide effective biodiversity conservation. This still requires investment, to prevent illegal use and incursions, support capacity building and sometimes to pay for ecosystem services provided. Costs are generally lower than for a traditional state-run protected area, but it is important not to regard IPLC areas as inherently “free” or “cheap”; without proper support such areas are likely to undergo further losses of biodiversity due, e.g., to illegal use that communities do not have the power to resist.

5. How can critical complementary non-area-based measures, that may be needed to ensure area-based measures are effective, be implemented in the most cost-effective way?

Countries need a strong legal and policy framework to support protected and conserved areas; in some countries this will entail changes to policy and even legislation, which will take longer and cost more. Some additional measures are voluntary, like codes of practice for tourists. Depending on the country concerned, priorities might be addressing the illegal wildlife trade, Indigenous Peoples’ rights, pollution and any perverse subsidies that incentivise land clearing, including assessing impacts of imported goods. Reducing pressures on protected areas and OECMs also reduces management costs.

6. What is the most cost-effective way of replicating and scaling long-term sustainability of PAs?

By ensuring a strong level of local support and investing small sums regularly, for consultation and monitoring, to ensure that protected and conserved areas are delivering thus avoiding larger future investments in addressing serious problems. Scaling up is dependent largely on attitudes towards existing protected and conserved areas; if these are supported it becomes easier to encourage replication. Additionally, an integrated approach across landscapes and seascapes, and investment in reducing pressures as addressed in question 5, will also help reduce costs and thus support scaling up.

7. How can sustainable financing be embedded into the delivery of low-cost area-based conservation measures?

There are numerous models, we provide a guide to these and some advice on choice. Funding packages need to be designed to provide regular management support as well as individual projects; the latter generally fail unless day-to-day management is in place. A portfolio approach to funding is usually required, rather than a single source. While some protected and conserved areas generate enough funds to cover their management, this is not always the case. Some measure of stability is very important, ring-fencing minimal budgets for a protected or conserved area to provide long-term security.

8. Given the assessment of direct and indirect drivers of successful biodiversity outcomes in different types of area-based measures in different geographies, what are the most cost-effective combinations of drivers that could be implemented for successful biodiversity protection?

A systematic approach to identifying, negotiating and agreeing approaches to area-based conservation at a site scale needs to be backed up by a range of supportive approaches at national and landscape/seascape scale. Adequate, year-on-year, funding is a key driver. In countries concerned, a careful examination of legislation, policy and internal capacity is needed to support a shift to a more pluralistic and participatory approach to area-based conservation. In donor countries, a rethinking of policies is often needed, away from short-term funding based largely on infrastructure development towards longer-term aid packages aimed at building sustainable conservation models.

9. Which of the cost-effective actions identified would provide the greatest value in terms of impact and co-benefits across multiple targets of the post-2020 framework? How can these co-benefits be maximised, and how can any trade-offs be minimised?

This depends on the country concerned, there is no one right answer. We provide guidance and a decision-tree to help select the most cost-effective option depending on the situation (environmental, economic, social and political) in the country or region in question.

10. What should a good business case for the establishment of an effective area-based conservation measure cover? What are the best arguments to make in favour of the establishment of such a measure, and how can the upfront costs of establishing them be shown to be minimised?

A business case needs to focus on seven key elements: (i) what to invest in – whether new or existing area-based conservation; (ii) if the former, where to invest in terms of location; (iii) and how to maximise success through the most suitable governance and management approaches; (iv) how to invest – the most practical funding package for the situation; (v) what else needs to be in place including any supportive legislation and policies to ensure success; (vi) how to measure benefits including what additional benefits will accrue to help justify investment); and (vii) scaling up from individual projects to overall systematic change. This needs to be embedded into a wide planning framework. We supply an outline for the business case for area-based conservation and case studies showing how widely different countries have introduced successful models.



Appendices



Appendix 1: Case studies

The case studies provide examples of how different countries and jurisdictions have tackled the challenge of growing the conservation estate in recent years. Most case studies used a standard assessment (Table 10) to summarise approaches.

Table 10: Key for case studies measuring effectiveness of *intentions* at a system level

Criterion		Key		
Outcome effectiveness	Biodiversity	Approach is focused on delivery of the three major aspects of Target 3: biodiversity prioritisation, ecologically representation and connectivity	Approach will deliver aspects of Target 3 but is not specifically focused on them	Approach does not relate to Target 3
	Equity	The approach is designed to ensure equitable management	The approach considers equity but this is not central to the process	Issues of equity have not been adequately considered
	Social values (cultural values, tourism revenue ecosystem services)	The approach is set up to deliver positive social outcomes	The approach should deliver some positive social outcomes, but this is not central to its design	Social outcomes have not been adequately considered
Public investment	Establishment (land costs, compensation, infrastructure)	The approach aims to provide cost-effective, long-term and sustainable financial mechanism and has fully considered set-up costs.	The approach has made some efforts to provide cost-effective, long-term and sustainable financial mechanisms.	The approach has not really considered sustainable financial mechanisms or where set-up funding will come from.
	Engagement (or capacity)	The approach is focused on rightsholders and stakeholders who are already engaged in and support the aims, and where needed have the capacity to manage	The approach includes steps towards developing effective rightsholder and stakeholder engagement and where needed their capacity to manage	Few efforts have been made to engage with rightsholders and stakeholders or investigate their capacity to manage
	Ongoing management	Management plans are designed in light of capacity and with good confidence of delivery.	Management plans take note of capacity but some elements will need additional resources	Management plans are in large part not capable of implementation with current levels of capacity
Finance	Monitoring	A comprehensive monitoring system has been/is being developed and will be implemented regularly	There will be some monitoring, but on a rather ad hoc basis	There has been little consideration of monitoring
	Sustainability of finance	Funding is sufficient and secure	Finance is either insufficient and/or uncertain year by year, but there is enough funding to operate at some level	There is a chronic lack of finance and little security

Table 10: *continues*

Criterion		Key		
Governance	Stakeholder engagement	The approach aims to have constant engagement of rights-holders and stakeholders	Rights-holders and stakeholders will be engaged in an ad hoc manner	Rights-holders and stakeholders will not usually be engaged at all
	Permanence and tenure security	The approach is focused on areas which are set up in perpetuity and tenure is secure	The approach is focused on areas needing considerable negotiation to develop agreements for long-term conservation and often need to revise tenure agreements	The approach is focused on securing tenure and long-term conservation management, but is developed through short-term (e.g., less than 25 year) agreements
	Quality of governance	The approach is based on ensuring good governance arrangements (e.g., decisions making is appropriate, adaptive and fair for all parties involved)	The approach considers but does not put enough emphasis on good governance arrangements	The approach is unlikely to result in good governance arrangements due to failures in its design

China: Ecological Conservation Redline (ECRL) Systemⁱ

Outline China's protected area system previously covered 18% of the land⁴⁶⁷ with multiple categories including natural reserves, scenic areas, forest parks, wetland parks and geoparks. However, the effectiveness of these PAs is limited due to unsystematic spatial allocation and insufficient management. The quantity and distribution of PAs have not been adequate to encompass biodiversity and ecosystem services with many key areas still located outside the PA network. A critical innovation in China is the Ecological Conservation Red Line (ECRL) system which was proposed by the State Council in 2011 and implemented nationally in 2017. ECRL management aims to ensure no change in landcover, no net loss of biodiversity, and no degradation of other ecosystem services inside the ECRL,⁴⁶⁸ which can solve some of the challenges occurring in PAs.

Outcomes: Chinese government leaders identified the *ecological conservation red line (ECRL) concept* as a comprehensive spatial planning tool,⁴⁶⁹ combining data from remote sensing with local stakeholder input. Control is centralised in the Ministry of Natural Resources. ECRL includes *important areas according to three broad issues: ecological functions* (e.g., water sources, sand stabilisation, mitigation of climate change), *ecological fragility* (e.g., control of water and soil erosion, desertification, security of riparian and seashore habitat), and *biodiversity* (e.g., habitats of key species and ecosystems).⁴⁷⁰ Within ECRL

areas, urban development and industrialisation is banned, resource exploitation limited, management responsibility clarified and delegated, and strict protection and restoration applied where needed.^{471,472}

ECRL starts by combining existing protected areas with other additional priority areas identified as having critical ecological functions, more recently including carbon.⁴⁷³ Next areas are adjusted in line with other planning needs and to ensure connectivity and effective management. Finally, boundaries are further refined after discussions with local stakeholders, balancing a range of priorities.⁴⁷⁴ All protected areas are included in the ECRL and managed according to relevant laws and regulations, in addition to complying with ECRL management requirements. Many other ECRL areas are likely to correspond with OECMs. Payment for Ecosystem Service schemes have been introduced to help communities in these areas and efforts are being made to harmonise central and local government actions, with stronger penalties for infractions.⁴⁷⁵ The ECRL has already increased the area under effective conservation, e.g., in Sichuan, the area under protection increased from 17.4% by protected areas to 30.5% by ECRL and the protection coverage of the priority biodiversity areas identified in China's NBSAP increased from 22.7% in previous protected areas to 49.1% under the ECRL.⁴⁷⁶

i. Thanks to Ke Dong, Jin Tong and Xin Xu for assistance with this case study

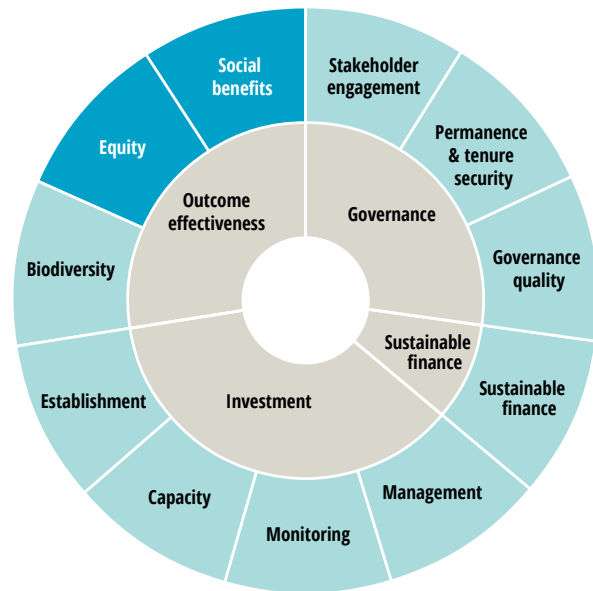


Business case

- Integrating biodiversity conservation with ecosystem services,⁴⁷⁷ including mitigating and adapting to climate change, helped build sufficient political momentum to bring about a wide-ranging response.
- The ECRL is based on outcomes, with responses including protected areas, OECMs and possibly management approaches outside either of these systems, chosen for their effectiveness.
- Adaptive management, and the potential to modify management approaches within ECRL areas depending on performance, will be critical to success.

South Africa: Incentivising landowners and communities as stewards of biodiversityⁱ

Outline: Detailed biodiversity spatial planning is used in South Africa to determine protected area expansion strategies. The National Biodiversity Stewardship Initiative secures land in biodiversity priority areas through agreements with private and communal landholders.⁴⁷⁸ Initiatives are managed by the provinces and generally with the support of conservation NGOs.⁴⁷⁹ The Protected Areas Act provides the legal framework for biodiversity stewardship, through Nature Reserves and National Parks, which provide the highest level of protection, followed by Protected Environments. These areas have the same legal standing as state-owned and managed protected areas and contribute to South Africa’s protected area estate. Nature Reserves and National Parks require a mandatory title deed endorsement through property law, securing the land’s protected area status regardless of subsequent changes to land ownership. Protected Environments are similar but allow for some form of production on the land, as long as this is integrated into an approved management plan. A dedicated biodiversity tax incentive, managed through the Income Tax Act, provides an extraordinary fiscal incentive⁴⁸⁰ and boosts financial resources for conservation management.⁴⁸¹ Provincial conservation authorities negotiate biodiversity stewardship agreements with landowners, provide ongoing support and conduct annual audits to ensure that landowners are complying with the agreements and to support their management activities. The typical length of the agreement is 30–99 years or in perpetuity.⁴⁸² The Land Reform Biodiversity



Stewardship Initiative was established in 2009 with the aim of helping ensure equitable land reform was coupled with privately protected area (PPA) declaration.⁴⁸³

Results: Between 2015 to 2020 the land-based protected area estate in South Africa increased by nearly 1.2 million ha, particularly due to large increases in Protected Environments, this resulted in a better representation of protected ecosystem types across South Africa’s terrestrial biomes.⁴⁸⁴ Private and communal conservation has proved effective in South Africa, in terms of biodiversity intactness.⁴⁸⁵ There has been a small amount of degazettement of PPAs⁴⁸⁶ of historical areas that are no longer compliant with the Protected Areas Act.

i. Thanks to Candice Stevens, Innovative Finance and Policy Head at the Wilderness Foundation Africa and Sustainable Landscape Finance Coalition for information and comments.



Business case⁴⁸⁷

- To meet Aichi Target 11, South Africa’s National Protected Area Expansion policy specifically recognised and required the expansion of protected areas on private and communally owned land, as well as state land.⁴⁸⁸
- The policy aimed to resolve issues of limited resources, gaps in comprehensive coverage across all biomes, and high levels of private ownership (approx. 75% of South Africa’s land surface).⁴⁸⁹
- Innovative finance mechanisms such as South Africa’s biodiversity tax incentive are available to provide sustainable finance to protected area expansion and management.⁴⁹⁰
- It is reported that stewardship agreements are between 70 to 400 times less costly to establish (primarily savings on land purchase) and between 4 to 17 times lower to manage than government managed protected areas.⁴⁹¹

New Zealand: Farmer's conservation initiatives recording successⁱ

Outline: 70% of terrestrial New Zealand is in private ownership, so protecting biodiversity on privately owned lands and the waters within and flowing through them is critical to reversing the decline of indigenous biodiversity.⁴⁹² Many farmers, and other landowners, across New Zealand have made their holdings into protected areas because they believe “it is the right thing to do”.⁴⁹³ Many have secured this protection through covenants with the Queen Elizabeth II National Trust (QEII), a farmer-led initiative formed in 1977.⁴⁹⁴ The Trust operates largely independently from Government under its own legislation (Queen Elizabeth the Second National Trust Act 1977),⁴⁹⁵ which promotes provision, protection, preservation and enhancement of open space⁴⁹⁶ for the benefit of present and future generations.⁴⁹⁶ The annual operating budget of approx. NZ\$6 million (US\$4 million) is about 80% government-funded.⁴⁹⁷ This legally binding protection⁴⁹⁸ ensures that once protection intent is registered on the land title the area is managed for conservation purposes in perpetuity.⁴⁹⁹ Landowners retain land use rights, provided their activities do not interfere with the objectives of the covenant, and QEII agree public access conditions that reflect the wishes of individual landowners.⁵⁰⁰ QEII has regional representatives advising landowners on conservation, rigorously monitors covenants and undertakes advocacy and legal processes. QEII's board is a mix of directors appointed by the Minister of Conservation and elected by QEII members.⁵⁰¹

Results: QEII has an understanding with the Minister of Conservation that requires 90% of new protected land to meet national priorities for biodiversity protection.⁵⁰²



Forested land accounts for 44% of covenant land by area; grassland and tussock land for 28%; and wetland for 5%.⁵⁰³ Covenants are regularly monitored (approximately every two years) by QEII⁵⁰⁴. Studies on PPAs in New Zealand have shown their contribution to wetland conservation⁵⁰⁵ and kiwi species.⁵⁰⁶ Some environmentally conscious individuals have also purchased land rich in natural heritage with the intention of managing and protecting it for conservation purposes and covenant owners often encourage neighbours to protect adjacent natural areas to create larger, connected conservation areas.⁵⁰⁷ In 2021, QEII worked with UNEP-WCMC to list its covenants on the WDPA, increasing the country's coverage by nearly 1,600 km² and almost doubling of the number of protected areas recorded for New Zealand.⁵⁰⁸

i. Thanks to Carl McGuinness and James Fitzsimmons for help with this case study



Business case

- Covenants are not seen by landholders as a regulatory tool of government or NGOs but rather a partnership tool to support rural landholder aspirations for lasting conservation,⁵⁰⁹ although some landowners regard them as devaluing the property
- QEII's model is unusual internationally as no significant financial incentives (e.g., tax breaks or subsidies) are provided; so, landholders are liable for most ongoing costs of land stewardship and management.⁵¹⁰
- Government funding is primarily focused on monitoring and capacity development to ensure conservation status and outcomes of the covenanted estate.
- There may be a need for more flexibility in the conditions to appeal to a broader range of people – for instance allowing more for cultural utilisation or sustainable harvest

India: Community conservationⁱ

Outline: The state of Nagaland in northeast India lies within the Indo-Myanmar Biodiversity hotspot.⁵¹¹ There are about 15 culturally distinct tribal communities across the state.⁵¹² Unlike much of India, nearly 90% of land is under community ownership and 85% of the state is still under forest cover.⁵¹³ The Nagaland Village and Area Council Act, 1978, provides communities with the authority to manage and conserve biodiversity resources. Hunting wildlife is deeply rooted in the culture and tradition of the region, but an increase in recreational hunting and the effectiveness of firearms mean these traditions are no longer sustainable.⁵¹⁴ Coupled with a growing recognition of the need to conserve biodiversity for future generations, the communities of Nagaland have built a successful community-based conservation approach.

Established in 2014, the Nagaland Community Conserved Areas Forum (NCCAF) brings together community conserved areas (CCAs) and 80 villages, over half of the state total, in a platform where members share experiences, learn from their peers and advocate for Indigenous Peoples rights and biodiversity protection. NCCAF also supports skill building, ensures a common voice for all the CCAs in the state in terms of recognition and policy influence and allows representation of community initiatives at national and international platforms.⁵¹⁵

Using the powers awarded to them under the 1978 Act, village councils across the state have created 25 CCAs⁵¹⁶, including the Khonoma Nature Reserve and Tragopan Conservation Reserve in Khonoma village^{517,518}, a wildlife reserve in Luzuphuhu village⁵¹⁹ and a wildlife conservation area in Sendenyu.⁵²⁰ The Act indirectly provides support to CCAs and gives communities a legal tool to combat commercial and industrial pressures.



The CCAs have a number of elements in common:

1. Strong local leadership, with often one or more 'champions' that persuade landowners and communities toward conservation management.^{521,522}
2. A focus on areas with conservation values (Khonoma, for example, is recognised as an Important Bird Area (IBA), Eastern Himalayas Endemic Bird Area⁵²³ and Key Biodiversity Area (KBA)⁵²⁴).
3. Strong youth involvement⁵²⁵ and local governance, e.g., community trusts, to manage the sites. Several national conservation organisations support initiatives such as equitable tourism, education and outreach, and surveys of flora and fauna across the CCAs.⁵²⁶

Results: The development of CCAs are now part of the Nagaland culture. Monitoring is under resourced but several important bird species are reported as seemingly secure.⁵²⁷ Sites⁵²⁸ and their champions⁵²⁹ have received recognition of their achievements.

i. Thanks to Neema Pathak for help with this case study



Business case

- Private and community ownership, and associated legal frameworks, mean the communities of Nagaland have a high degree of authority in managing their village and surroundings.
- ICCAs in Nagaland have been built on community passion (often initially by one champion) rather than on a long-term financial model.
- Conservation initiatives often require trade-offs; with traditional resource use reduced (due to reduced availability of resources) and non-use values of

resources expanded (based on effective conservation outcomes). These trade-offs only succeed if the non-use values can provide sufficient income to replace the former dependency on natural resource uses. The recent pandemic has shown the limitations on the over-dependence on eco-tourism. More long-term community focused funding models are required.

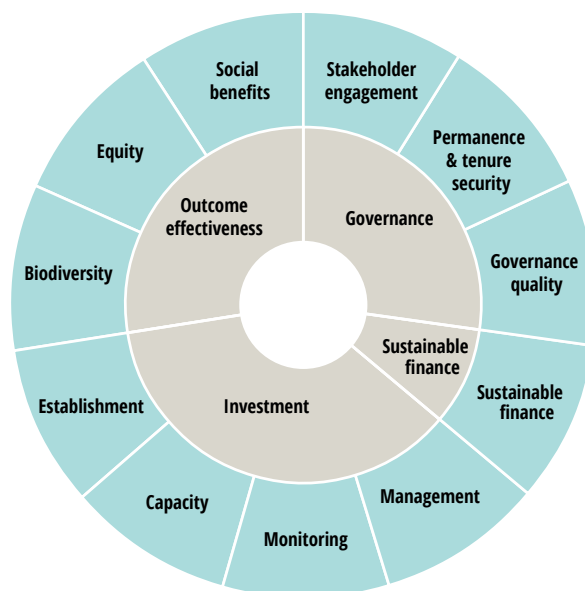
- The youth movement is strongly involved, which is vital for protecting and maintaining natural habitats and wildlife into the future.

Bhutan: Project finance for permanence

Outline: Bhutan is unique in many ways; a small land-locked country, until recently isolated from the world, with a new-found democracy and a strong conservation ethic born from both the Buddhist religion and a deep-held respect for the conservation-minded monarchy.⁵³⁰ The conservation estate is expansive, covering over half the country, in a system more akin to those found over much of Europe, with people living within protected areas making their living from, albeit limited, extraction of resources and tourism, primarily culturally focussed. Rapid changes across the country including linear infrastructure development and the impacts of climate change have resulted in greater conservation threats, and resultant management needs.

The first full assessment of management effectiveness in 2016, found that although protected areas were well managed, effectiveness was limited by a low level of resources (both financial and appropriate technical resources) and by gaps in monitoring and research data.⁵³¹ This assessment and the resulting *State of the Parks* report was used to set a baseline for enhancing protected area capacity within a major national conservation funding programme.⁵³²

‘Bhutan for Life’ is based on a Wall Street model of project finance for organizing and financing complex, expensive and well-defined projects (and associated project milestones)⁵³³. Termed ‘project finance for permanence’ this ‘multi-party, single closing’ approach ensures security of investment by multiple donors who commit funds which are not distributed until the total fundraising goal has been reached, and all agreed legal and financial conditions are met. This helps leverage funding by ensuring funders that their support will be used effectively. Bhutan for Life’s total fund holds roughly US\$43 million (US\$26 of which is from the Green Climate Fund) and US\$75 million from the Royal Government of Bhutan. Donated funds are



being distributed annually over 14 years, by which time the government of Bhutan will also increase its spending, in part by creating new funding sources, to fully assume conservation costs.⁵³⁴

Results: Fully operational since 2019, annual reports⁵³⁵ and funder reports⁵³⁶ assess achievements towards the agreed milestones. Bhutan for Life aims to more than double the annual budget for protected areas (from US\$3.6 in 2017) and to increase staff numbers by 80%. In 2020 protected area funding focussed on waste management, salaries, capacity building, genetic studies of tigers, roll-out of SMART monitoring, infrastructure and purchase of vehicles. The COVID-19 impact seriously impacted some activities.⁵³⁷ A country-specific version of the Management Effectiveness Tracking Tool (METT) has been developed and will be used every five-years to measure changes in management effectiveness.⁵³⁸ The experience in Bhutan is being replicated in other countries through the Enduring Earth partnership between WWF, The Nature Conservancy, The Pew Charitable Trusts and ZOMALAB.



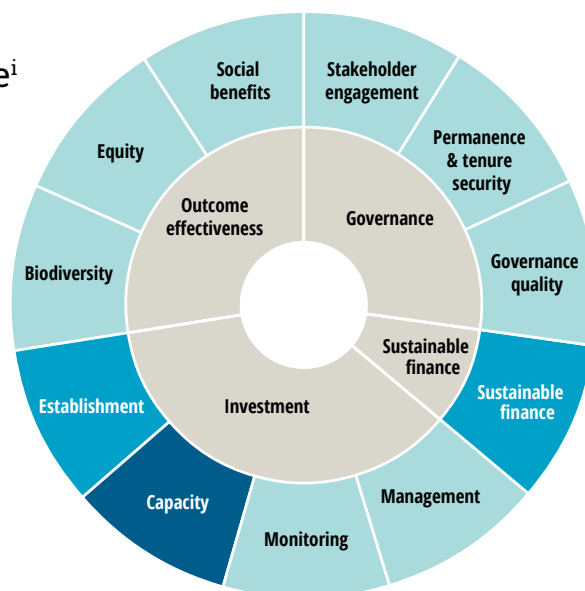
Business case

- Bhutan for Life builds on the governance reputation of Bhutan to ensure a sustainable future for the country and a well-managed protected area estate.
- The vision of permanent and effective protection is at the heart of the Project Finance for Permanence (PFP) approach.⁵³⁹
- The project was based on research and assessments which enabled the development of clear targets and milestones to demonstrate funding impact.
- PFP has a track record of raising large funds for iconic places with high biodiversity value: US\$215 million for Amazon Region Protected Areas, US\$55 million for Costa Rica Forever. Benefits include one overarching and ambitious programme (as opposed to multiple small projects) with long-term funding security.⁵⁴⁰
- PFP has proved attractive to large donors who “believe the PFP approach merits consideration for other large-scale projects to address critical conservation”.⁵⁴¹

Canada: Partnering the logging industry, conservationists and First Nations peopleⁱ

Outline: Over 90% of the Canadian province of British Columbia (BC) is publicly owned Crown land and around half is forested.⁵⁴² There was historical tension over forestry and land use between the many First Nations of BC and Crown governments.⁵⁴³ The 1980s were characterised as a period of conflict,⁵⁴⁴ stemming from different environmental, cultural and economic values of First Nations, industry and government. Through land-use planning and change in forest governance models there was decision to protect the Great Bear Rainforest. Roughly the size⁵⁴⁵ of Ireland, this is a quarter of the world's remaining coastal temperate rainforests, estimated to support 20% of the world's remaining wild salmon⁵⁴⁶ and includes territories of 27 coastal First Nations.⁵⁴⁷ Key success factors were use of Ecosystem Based Management (EBM) promoting human well-being and ecology, land-use planning, and formalising the government-to-government structure, development of enabling legislation and engaging key stakeholders and First Nations.

Several developments in the mid-1990s brought an end to the stalemate over logging in Great Bear: a successful consumer campaign to avoid products sourced from British Columbia's rainforests; a strengthening of First Nations rights;⁵⁴⁸ changes in forest governance from a focus on the forestry industry to EBM; and the development of environmental certification to support to sustainable forest management.⁵⁴⁹ The changing nature of forest governance is enabled by the land use planning processes and the development of legislation such as the designation of conservancies, co-management regimes and more recently atmospheric benefit sharing agreements.⁵⁵⁰ These developments permitted The Nature Conservancy to lead a private fundraising effort. Negotiations began in 1999, resulting in a single multiparty deal (a project for finance permanence) in 2006 mobilising funding and commitments to create the Coast Opportunities Funds.⁵⁵¹ The plan included a fund totalling C\$120 million today



(about US\$100 million at the time).⁵⁵² Half was from foundations in the US⁵⁵³ and the rest from provincial and federal government.⁵⁵⁴ Contributions were on condition that at least a third of the region was protected from logging, through designation of “conservancies”, and the rest implemented EBM forestry practices. Conservancies, a new legal designation in British Columbia, acknowledge and ensure cultural values and traditional use of the First Nations are upheld.⁵⁵⁵

Results: The fund continues to grow and in 2019, Kwikwasut'inuxw Haxwa'mis was the first First Nation donation to the Fund.⁵⁵⁶ The project brought consensus to protect 8.5 million hectares of coastal BC temperate rainforest⁵⁵⁷ supported local economic development and ended decades of conflict.⁵⁵⁸ As of November 2021, Coast Funds had approved C\$104.4 million towards 423 conservation, sustainable economic development and cultural revitalisation projects.⁵⁵⁹ First Nations are leading research to assess and restore habitats and have led 291 scientific research or habitat restoration initiatives, on 62 different species including whale, bear, wolverine, salmon and herring.⁵⁶⁰

ⁱ Thanks to Kaitlin Almack for help with this case study



Business case

- The key here was a government commitment to shared decision making with First Nations, changing policies and commitment and support from consumers who choose not to buy wood from Great Bear. The coming together of these groups led to a win, win, win for conservation, Indigenous Peoples and industry.
- The opportunity created by these changes and the outstanding importance of the area for conservation created the potential for large-scale conservation funding, brought together under one single project.
- This type of protected area, conservancies, was new to British Columbia. Traditional conservation approaches did not meet the needs of all parties in the negotiations, especially those of First Nations.
- The development of a long-term, growing fund coordinating hundreds of conservation, development, social and cultural projects had one overarching vision: First Nations exercising their rights to self-determination, ensuring healthy and thriving communities and ecosystems.⁵⁶¹

Australia: The critical role of strong science and tenure and funding diversity^{i,573}

Outline: Australia is a federal nation with responsibility for land management, including public protected areas, remaining mostly with the six state and two mainland territory governments. Up until the mid-1990s, each state and territory developed their own protected area estates, mostly from public land, with little coordination. Upon ratifying the CBD, the Australian Government, states and territories agreed to work together to create a science-based National Reserve System (NRS) using the principles of comprehensiveness, adequacy and representativeness (CAR). This sought to ensure that a representative samples of ecosystems in each of Australia's more than 80 bioregions⁵⁶² were reserved in protected areas. This could not be achieved through increasing public protected areas alone, so focused on arrangements on private and Indigenous land. Beyond recognition in policy,⁵⁶³ the Australian Government funded two innovative programmes. The NRS Program provided up to two-thirds of the purchase price for strategic land acquisitions of private land by NGOs and state governments. The key criterion of purchases under the NRSP was to improve representation of the NRS (focusing on under-represented biogeographic regions and ecosystems). The Indigenous Protected Areas Program is based on voluntary, consulted agreements between the government and local Indigenous organisations to manage, with some government funding support to incorporate tenures into the NRS. Other mechanisms included strategic assessment and protected area designation in forested public lands, as part of legal Regional Forest Agreements between the government and respective state governments,⁵⁶⁴ regional investigations of public land use by state governments that used the principles of CAR,⁵⁶⁵ and expansion of conservation covenanting programmes on private land.⁵⁶⁶ The type and amount of financial incentives needed for landholders to sign conservation covenants varies, and combined with



a number of financial barriers, are in need of reform to further increase the participation of private landholders in protecting and managing conservation areas.⁵⁶⁷

Outcomes: From the mid-1990s to 2020, Australia increased protection of its landmass from 7% to ~20%. The NRSP (1996-2013) provided approximately Aus\$200 million to assist the purchase of 371 properties (around 10 million hectares).⁵⁶⁸ This funding covered up to two-thirds of the purchase price for private land acquired by state governments or land trusts/community groups for new public or privately protected areas (PPAs), respectively.⁵⁶⁹ The remaining funding was mostly from philanthropic sources, who were often stimulated by the leverage inherent in this model.⁵⁷⁰ Incorporation of PPAs in Australia's NRS has increased representation of bioregions and ecosystems.⁵⁷¹ There are currently 78 IPAs over 74 million hectares accounting for more than 46% of the National Reserve System, including in some of Australia's most ecological intact landscapes. Managing IPAs helps Indigenous communities protect the cultural values of their Country for future generations and results in significant health, education, economic and social benefits.

i. Thanks to James Fitzsimons for help with this case study



Business case

- Protected area expansion is guided by science and policy on public, private and Indigenous land
- A dedicated land acquisition budget over multiple years allowed confidence in the land acquisition process, which often spanned over multiple years of negotiation.
- Potential PPAs were only funded if they met national targets for increasing conservation of under-represented bioregions or ecosystems.
- Financial incentives were not the main driver for the ~5000 landholders protecting their properties in perpetuity through conservation covenants, but financial incentives were considered useful by most.⁵⁷²
- The development IPAs helped protect large areas of Australia's most ecologically intact landscapes.

Finland: Economic benefits of protected areasⁱ

Outline: Economic valuation can help governments justify investment in protected and conserved areas. Around 2010, faced with the possibility of major budget cuts, the Finnish protected area agency Metsähallitus, Parks & Wildlife Finland, undertook a study of the economic benefits of the protected area system.⁵⁷⁴ An analysis of Total Economic Value would include a full range of ecosystem services, from water to carbon sequestration. However, this study focused on a subset, the local economic impacts of visitor spending, to demonstrate immediate benefits of visitor spending to local economies. It considered direct and total income and employment effects using a simple analytical tool based on the Money Generation Model originally developed for the US National Park Service by Michigan State University.⁵⁷⁵ Estimates have since been made annually for each national park, and at a cumulative, state-level, through visitor monitoring.^{576,577} Total visitor spending is subdivided to identify when visitors came solely or mainly because there was a protected area. After this development project, Parks & Wildlife Finland has further developed estimates of other economic benefits of protected area management, such as impacts of investments, large scale projects and on-going management.

Outcomes: The 2010 study showed high economic values for the national parks, and these have continued to increase over time.⁵⁷⁸ In 2021, the total income and job impacts of all forty national parks were €310.3 million and about 2,452 jobs (full-time equivalent, FTE).⁵⁷⁹ Much of the visitation is domestic, which may explain significantly increased use during of the period of the COVID-19



pandemic. Additionally, visitors are asked to evaluate their health and well-being benefits on a monetary basis; with a median of €100 per visit.⁵⁸⁰ Impacts are largest in the northern parks, located near a tourist centre, where there are fewer alternative job opportunities, thus increasing the net social benefits gained. Research in 2010 and since has helped make the case for continued public investment, showing that money spent on management comes back many-fold to local economies.

The biggest economic impacts occur in tourism centres where the visitors stay for a longer period and the supply of tourism services is larger. In 2021, visitation numbers in Nuuksio National Park in the Helsinki Metropolitan area were 314,500 and those in Koli National Park 256,900. Yet the local economic impacts were much more important in Koli, which generated €24.9 million, whereas Nuuksio generated only €3.7 million.⁵⁸¹

i. Thanks to Matti Tapaninen, Sanna-Kaisa Juvonen and Mervi Heinonen for help with this case study



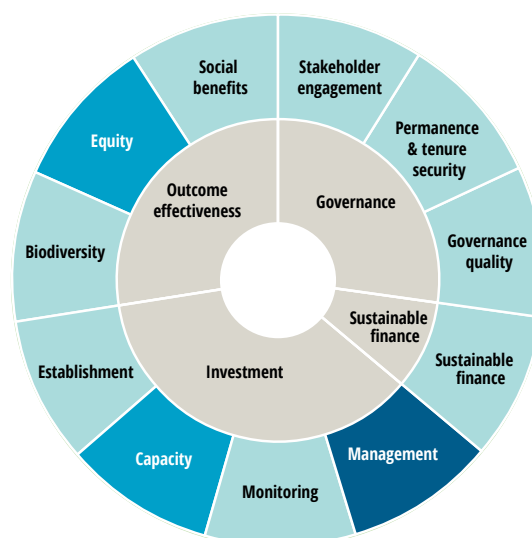
Business case

- Applied correctly, economic valuation can help to generate and secure funds for area-based conservation.
- Values need to be contextualised; value in a rural area with few other income generating opportunities is proportionately more important.
- The majority of economic values occur around remote national parks, where visitors are likely to stay longer, assuming that tourist services are available.

Belize: Debt swap to protect critically important coral reefⁱ

Outline: The Belize platform, a submerged area of karst, contains the world’s second largest coral reef, the longest in the Northern and Western hemispheres. The area has multiple coral habitats, offshore atolls, seagrass meadows, mangrove and sand cays, supporting a huge biodiversity including rare species of turtles, manatees and marine crocodiles.⁵⁸² It was put on the UNESCO World Heritage List in 1996. Protection of the reef by the Belize Barrier Reef Reserve System is critically important from the perspective of biodiversity conservation,⁵⁸³ ecosystem services⁵⁸⁴ and in line with multiple international legal obligations.⁵⁸⁵ The reef is also critically important to the economy. Commercial fisheries alone contribute US\$30 million to Belize’s annual GDP. Over 200,000 visitors visit the region annually, where they spend US\$81 million. Tourism—an estimated 25 percent of which is reef based—generates 41% of the national income. However, the reef is under increasing pressure from some of these same activities, including poorly managed tourism⁵⁸⁶ and overfishing,⁵⁸⁷ along with pollution from agrochemicals⁵⁸⁸ and microplastics.⁵⁸⁹ The government of Belize has committed to conservation of the ecosystem. Important steps include enshrining these commitments in legal and policy terms and securing sufficient finance for their implementation. A debt for nature swap was proposed as one concrete way in which this could be achieved.

Results: In 2021, The Nature Conservancy (TNC) and the Government of Belize announced completion of a US\$364 million debt conversion for marine conservation that reduced Belize’s debt by 12% of GDP. This is the world’s largest debt refinancing for ocean conservation to date. The debt conversion enabled Belize to repurchase US\$553 million, a quarter of the country’s total public debt, from



bondholders at a 45% discount through a “Blue Loan” arranged by TNC. The “debt conversion” resulted in a US\$189 million reduction in principal outstanding and allowed Belize to divert US\$180 million in conservation funding over 20 years. The government committed to placing 30% of its marine area, including parts of the Mesoamerican Reef, under protection by 2026, using a transparent, participatory Marine Spatial Planning process, and establishing an independent Conservation Fund for in-country partners. In addition to conservation commitment for 30% protection, the project also includes commitments for regulations for a high-value, sustainable aquaculture and mariculture industry, governance frameworks for domestic and high seas fisheries, as well as to a regulatory framework for development of coastal blue carbon projects Credit Suisse arranged and financed the Blue Bond. The structure was credit enhanced by the United States International Development Finance Corporation and incorporated a commercial parametric insurance policy to mitigate the financial impact of natural disasters.⁵⁹⁰

i. Thanks to Melissa Garvey for help with this case study



Business case

- The scheme builds on long term commitment to marine conservation by the Government of Belize
- There are also very strong financial incentives for maintaining the biodiversity and ecosystem services of the reef system, with evidence of these values collected over a long period of time, from many researchers.^{591, 592}
- The “deal” combines hard policy assurances with long-term financing support, effectively locking in place agreements for protected areas and sustainable management.
- Participatory planning ensures that local rightsholders and stakeholders are fully aware of the proposals and have a chance to shape these to ensure that their own needs and interests receive sufficient attention.

Appendix 2: Acronyms

CBD:	Convention on Biological Diversity	MPA:	Marine protected area
DRR:	Disaster Risk Reduction	NGO:	Non-governmental organisation
FPIC:	Free, Prior and Informed Consent	OECM:	Other effective area-based conservation mechanism
GBF:	Global Biodiversity Framework	PPA:	Privately protected area
GDP:	Gross Domestic Product	PADDD:	Protected area downgrading, downsizing and degazettement
ICCA:	Territories and areas conserved by Indigenous Peoples and Local Communities or territories of life	SDG:	UN Sustainable Development Goals
IPA:	Indigenous protected area	UNFCCC:	UN Framework Convention on Climate Change
IPLC:	Indigenous Peoples and Local Communities	WCPA:	IUCN World Commission on Protected Areas
IUCN:	International Union for Conservation of Nature	WDPA:	World Database on Protected Areas
KBA:	Key biodiversity area		

Appendix 3: Important information gaps

The 30x30 target presents big opportunities but also some big challenges, not least that there are still important gaps in our knowledge and available tools. A brief summary of key gaps follows.

The effectiveness of protected landscapes (IUCN management category V) in protecting biodiversity. Surprisingly, given the number of category V protected areas in Europe, little quantifiable data exists to compare biodiversity conservation in category V with control landscapes/seascapes outside,⁵⁹³ or to distinguish the impacts of the protected landscape designation from that of smaller, more strictly protected areas inside the category V area.

The effectiveness of IPLC territories for species conservation: Evidence on the effectiveness of IPLC territories for conserving vegetation has increased enormously,⁵⁹⁴ along with evidence for the role of IPLCs as managers and resulting wellbeing benefits.⁵⁹⁵ But we still have little quantitative data on the success of IPLC territories in conserving species. One exception is the case of sacred natural sites, with over 200 research projects available;⁵⁹⁶ the same is now needed more generally.

Integration of OECMs into established prioritisation approaches, such as systematic conservation planning and protected area gap analysis. OECMs are by their definition usually not determined primarily by biodiversity conservation⁵⁹⁷ and therefore their integration into a national system will not fall neatly into traditional approaches. How to integrate these “accidental” conservation areas into a coherent national system has still not been explored in any depth.

The role of restoration in reaching 30x30: Some preliminary analyses exist.⁵⁹⁸ But many such analyses are focused on forests (grassland and savannah are generally under-represented in discussions about 30x30)⁵⁹⁹ and have barely touched marine systems. An understanding of the most strategic places to invest in restoration to boost ecosystem services and biodiversity⁶⁰⁰ (along with funding options such as REDD+) would be useful.

Methods for mapping ecosystem services: There is no globally agreed methodology for mapping ecosystem services as a whole, nor even for mapping individual services such as carbon and water. Lack of clarity on reporting was one possible reason why ecosystem services performed badly in the Aichi Targets. With OECMs relying heavily on land and water set aside because of the ecosystem services, this is becoming a critical gap in available tools to implement 30x30.

Understanding financial benefits of protected areas: It is difficult to get information on the direct financial benefits from protected areas (money earned or costs directly foregone), nor is there any standardised way of reporting,⁶⁰¹ which makes comparisons between sites more difficult. A better understanding of real and immediate economic benefits from protected and conserved areas would support system planning and reassure investor governments that money was being well spent.

Clarity about the distinction between protected area category V and OECMs: This is less of a research question than a policy debate but needs to be addressed. Although in theory the distinction between protected areas and OECMs is precise, in practice many IUCN Category V protected areas resemble OECMs very closely and many governments are confused.

Appendix 4: Acknowledgements

The Nature Conservancy – project leads

Sara Mascola, Deputy Director, Protect Oceans Lands and Waters

Linda Krueger, Director of Biodiversity & Infrastructure Policy

Melly Reuling: Director, 30x30 Biodiversity Initiative

Carolina Hazin: Senior Policy Adviser, Area-Based Conservation Measures

Andrea Akall’eq Burgess, Global Director of Conservation in Partnership with Indigenous Peoples and Local Communities, USA; **Kaitlin Almack**, Indigenous Peoples and Local Communities Advisor, Canada; **Jaka Ariun**, Community Based Conservation Lead, Mongolia; **Rony Brodsky**, Director of Community-Led Finance, Global Program for Conservation in Partnership with Indigenous Peoples and Local Communities, USA; **Gala Davaa**, Director of Conservation, Mongolia; **James Fitzsimons**, Director of Conservation and Science, Australia Programme. Senior advisor to the Global Protect team; **Melissa Garvey**, Global Director, Ocean Protection, USA; **Ivan Gil**, Protected Area Specialist, Colombia; **Michael Heiner**, Conservation Scientist (with a focus on Mongolia/Gabon), USA; **Ke Dong**, Director, China Global Engagement; **Christina Kennedy**, Senior Scientists, Global Protect Oceans, Lands and Waters; **Joe Kiesecker**, Lead Scientist, Protect, USA; **Jennifer McGowan**, Spatial Planning Technical Coordinator, USA; **Carl McGuinness**, Director of Conservation, New Zealand; **Tara Moberg**, Global Freshwater Strategy Advisor, USA; **Eleanor Phillips**, Caribbean External Affairs Director, Bahamas; **Chrissy Schwinn**, Coastal Community-based Conservation Advisor, USA; **Joanna Smith**, Director Ocean Planning and Mapping, Canada; **Kei Sochi**, Spatial Ecologist, Development by Design; **Phil Tabas**, Senior Advisor, USA; **Jin Tong**, Science Director, China Programme; **Catalina Gongora Torres**, Public Policy Specialist, Colombia; **Xin Xu**, External Affairs Senior Manager, The Nature Conservancy Beijing Representative Office; **Noor Yafai-Stroband**, Europe Director Global Policy and Institutional Partnerships.

Other contacts and advisors

Madhu Rao, Chair IUCN World Commission on Protected Areas and the Wildlife Conservation Society

Anthony Waldron, University of Cambridge – wrote the section on finance.

Natasha Ali, Senior Programme Officer, UNEP WCMC, UK and Secretariat for the Biodiversity Indicators Partnership; **Heather Bingham**, Senior Programme Officer, Protected Planet Initiative | Conserving Land And Seascapes, UNEP WCMC, UK; **Tracey Cummings**, Technical Advisor for the UNDP Biodiversity Finance Initiative (BIOFIN) and member of the CBD’s ‘Panel of Experts’ on Resource Mobilisation for the post-2020 global biodiversity framework, Canada/South Africa; **Neil Dawson**, Research fellow at the Universities of East Anglia and Aberdeen, UK and IUCN Commission on Economic, Environmental and Social Policy; **Katie Deul**, Centre for Large Landscape Conservation; **Donald Djossi**, Central African Forest Observatory (OFAC, Cameroon); **Charles Doumenge**, Research Unit Forêts & Sociétés, CIRAD, France; **Phil Franks**, International Institute for Environment and Development; **James Hardcastle**, Head, IUCN Protected and Conserved Areas, Switzerland; **Mervi Heinonen**, Metsähallitus, Finland; **Harry Jonas**, WWF US; **Annika Keeley**, Centre for Large Landscape Conservation; **Aaron Laur**, Centre for Large Landscape Conservation;

Sanna-Kaisa Juvonen, Senior Advisor at Metsähallitus, Finland; **David Meyers**, Executive Director at the Conservation Finance Alliance, USA; **Brent Mitchell**, Vice President, Stewardship, QLF Atlantic Center for the Environment and Thematic Vice Chair, Scaling Natural Solutions, IUCN WCPA, USA; **John Morrison**, Director of Conservation Planning and Measures, WWF-US, USA; **Neema Pathak-Broome**, Kalpavriksh, India and ICCA consortium Regional Coordinator for South Asia; **Florence Palla**, Central African Forest Observatory (OFAC) and Regional Vice Chair, West and Central Africa, IUCN WCPA, Cameroon; **Sonia Peña Moreno**, Senior Policy Officer for Biodiversity, Global Policy Unit, IUCN, Switzerland; **Ilka Petersen**, WWF Germany; **Ameyali Ramos**, Deputy Chair of the IUCN Commission on Environmental, Economic and Social Policy (IUCN-CEESP), Mexico; **Bob Smith**, Director of the Durrell Institute of Conservation and Ecology, School of Anthropology and Conservation, University of Kent, UK; **Jenny Springer**, Director, IUCN Global Programme on Governance and Rights, USA; **Candice Stevens**, Wilderness Foundation Africa; **Matti Tapaninen**, Senior Advisor for Metsähallitus Parks & Wildlife Finland; **Kristen Walker Painemilla**, Senior Vice President and Managing Director of the Center for Communities and Conservation, Conservation International, and Chair of IUCN's Commission on Environment, Economic and Social Policy (CEESP), USA; **Gary Tabor**, Centre for Large Landscape Conservation; **Marina von Weissenberg**, Finnish Ministry of the Environment; **Stephen Woodley**, Thematic Vice Chair, Biodiversity Science, IUCN WCPA, Canada.

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Any remaining errors of fact or opinion are our own responsibility.

Appendix 5: Additional tables

Table 11: Planetary boundaries and protected areas

Boundary	Impacts on area-based conservation
Climate change	Ecosystem change, range shifts, frequent and severe extreme weather events.
⁶⁰² Ocean acidification	Major impacts on coral reef, also wider threats to ocean productivity.
⁶⁰³ Ozone depletion	Wide-range ecosystem impacts.
⁶⁰⁴ Aerosol loading	Including impacts from nitrogen, sulphur, iron, phosphorus, and base cations.
⁶⁰⁵ Biochemical flows	Nitrogen ⁶⁰⁶ and phosphorus ⁶⁰⁷ loading, freshwater and marine eutrophication.
⁶⁰⁸ Freshwater use	Drying ecosystems, ⁶⁰⁹ dams reducing water flow and blocking fish migration routes.
⁶¹⁰ Novel entities	Wide-ranging impacts of biocides, POPs ⁶¹¹ etc including within protected areas.
⁶¹² Land-use change	Land use change threatens many species ⁶¹³ and isolates protected areas and OECMs.
⁶¹⁴ Biodiversity loss	Leading to genetic isolation of species inside protected areas. ⁶¹⁵

Table 12: Checklist for the (key) contributions of area-based conservation to SDGs⁶¹⁶

Key SDGs	Contribution from draft Target 3
<p>SDG 1: No poverty SDG 1 aims to eliminate extreme poverty by 2030. But it also has wider aims: 1.4: <i>“build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters”</i></p>	Protected areas providing income-generating opportunities, especially to poor people or those without obvious alternatives. ⁶¹⁷
<p>SDG 2: Zero hunger Target 2.3: protect <i>“small-scale food producers, in particular women, Indigenous Peoples, family farmers, pastoralists and fishers”</i>. 2.4: <i>“ensure sustainable food production...and... resilient agricultural practices, that help maintain ecosystems, that strengthen capacity for adaptation ... and progressively improve land and soil quality”</i>. 2.5: <i>“maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species...”</i></p>	<p>Maintaining species collected from the wild, particularly fish</p> <p>Supplying ecosystem services (e.g., irrigation water)</p> <p>Conserving supportive wild species (e.g., pollinators)⁶¹⁸</p> <p>Stabilising and rebuilding soil and beneficial soil organisms</p> <p>Conserving crop and livestock wild relatives</p> <p>Cultural ecosystems with traditional agriculture and grazing</p>
<p>SDG 3: Good health & wellbeing Several linked targets, 3.2: <i>“reduce...under-5 mortality to at least as low as 25 per 1,000 live births”</i>, 3.4: <i>“reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being”</i>, 3.9: <i>“substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination”</i></p>	<p>Access to green space</p> <p>Improved air and water quality and cooling in cities</p> <p>Sources of local and global medicines</p> <p>Intact ecosystems forming buffers against certain diseases</p> <p>Physical and mental health benefits from recreation, etc.</p>
<p>SDG 5: Gender equality 5.1: <i>“End all forms of discrimination against all women and girls everywhere”</i> and 5.5: <i>“Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision making in political, economic and public life.”</i></p>	<p>Supporting gender equality</p> <p>Taking steps against gender-based violence</p>

Key SDGs	Contribution from draft Target 3
<p>SDG 6: Clean water and sanitation The overall aims are to “Ensure availability and sustainable management of water and sanitation for all”. T 6.1 “achieve universal and equitable access to safe and affordable drinking water for all”, Target 6.5 “implement integrated water resources management at all levels, including through transboundary cooperation as appropriate” and T 6.6 to “protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes”. This last will be revised in line with the CBD.</p>	<p>Improving the quality of water flowing from a catchment</p> <hr/> <p>Increasing the amount of water flowing from a catchment</p> <hr/> <p>Storing water and maintaining flow to avoid floods and droughts</p>
<p>SDG 10: Reduced inequality 10.1 aims to: “...progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average”. 10.2: “...empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status”. 10.3: “Ensure equal opportunity and reduce inequalities of outcome...”, including promoting supportive policies.</p>	<p>Actively promoting social inclusion</p> <hr/> <p>Ensuring equal opportunities</p> <hr/> <p>Inclusive governance mechanisms for ecosystem services</p> <hr/> <p>Access to ecosystem services for disadvantaged in society</p>
<p>SDG 11: Sustainable cities and communities 11.5 “significantly reduce the number of deaths and the number of people affected ... caused by disasters, including water-related disasters, with a focus on protecting the poor ...”. 11.6: “reduce the adverse per capita environmental impact of cities...”, 11.7: “universal access to safe, inclusive and accessible, green and public spaces...”. 11.4 is to “Strengthen efforts to protect and safeguard the world’s cultural and natural heritage” (slightly out of place here)</p>	<p>Disaster risk reduction for urban dwellers</p> <hr/> <p>Improving air quality</p> <hr/> <p>Managing urban reserves as green spaces</p> <hr/> <p>Sustainable livelihoods for communities</p> <hr/> <p>Maintaining biological connectivity in urban areas</p>
<p>SDG 13: Climate action SDG 13 has the overall aim to “take urgent action to combat climate change and its impacts”. 13.1: “Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries”, 13.2: “Integrate climate change measures into national policies, strategies and planning”.</p>	<p>Disaster risk reduction</p> <hr/> <p>Other ecosystem services to help climate change adaptation</p> <hr/> <p>Storage and sequestration of carbon</p> <hr/> <p>Natural laboratories for assessing impacts of climate change</p> <hr/> <p>Demonstrating impacts of climate change</p>
<p>SDG 15: Life on land</p>	<p>Biodiversity conservation on land and in freshwater</p>
<p>SDG 14: Life below water</p>	<p>Biodiversity conservation in coastal and marine areas</p>
<p>SDG 16: Peace, justice & strong institutions Amongst others, 16.3: “Promote the rule of law at the national and international levels and ensure equal access to justice for all”, T4 “...combat all forms of organised crime”, 16.7: “Ensure responsive, inclusive, participatory and representative decision-making at all levels”</p>	<p>Conflict prevention</p> <hr/> <p>Conflict mitigation and resolution</p> <hr/> <p>Post-conflict rebuilding</p>

Appendix 6: Planning an ecological corridor

Determine the focal landscape or seascape

Identify and collaborate with stakeholders and partners across diverse sectors

All potential implementers (e.g., managers and planners, Indigenous Peoples', owners of working lands and waters, wildlife and transportation agencies, conservation NGOs, research institutions) should be engaged from the start to promote coordination and partnerships across jurisdictional boundaries. Be inclusive. Determine who manages and/or has rights to resources in potential corridors, who is positively or negatively impacted by conservation, and who is interested in connectivity conservation. Identify an independent catalyst to lead the process. Work collaboratively with stakeholders and partners throughout the process, from planning and design to implementation and monitoring.

Assess capacity and expertise

Assess human, financial, and technical capacities that stakeholders and partners bring to the process. Identify existing or potential tools, e.g., formal agreements, steering committees and collaborative groups to facilitate coordination and communication among diverse actors.

Map connectivity

Decide what to connect (e.g., only protected and conserved areas or also intact unprotected areas?). Select a suite of diverse, focal species to represent habitat requirements and movement needs or choose a structural connectivity model. Base species models on empirical data (e.g., wildlife movement) if possible. Decide on the scale of the model: how large the study area and how small each pixel? A coarse-scale, naturalness-based assessment ("vision map") may be followed by studies for a suite of species or at a finer spatial scale ("shovel-ready plans"). Use maps to identify lands to be conserved to maintain or restore functional connections for all species or ecological processes of interest.

Assess utility of corridors

Conduct fieldwork to ground-truth analyses, identify barriers, and document conservation management needs. Compile results of analyses and fieldwork into a report with recommended conservation and restoration opportunities for conserving optimal corridors to sustain ecological and evolutionary processes and ecosystem services.

Identify threats and pressures

Identify and characterize the location, magnitude, and likelihood of occurrence of negative impacts to connectivity (e.g., from linear infrastructure, energy extraction, human population expansion, agricultural conversion, grazing practices and patterns, tourism, climate change) in each corridor.

Assess the condition

Assess how key ecological and social factors vary across the landscape/seascape to clarify the status of, opportunities for, and obstacles to connectivity. Factors to assess may include land/water use, value for biodiversity, species' needs, ecological processes, climate impacts, environmental policies, and social, political, and economic characteristics. This assessment may provide a baseline against which future changes in connectivity can be assessed.



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7. Sustainable Finance in Protected Areas: a guide for post-2020 Target 3 ("30x30")

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Appendix 5: Additional tables

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Best Practice in Delivering the 30x30 Target

Protected Areas and Other Effective Area-Based
Conservation Measures

