# Achieving the Global Biodiversity Framework by Utilizing the Landscape Approach to Link Protection and Production

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Over the past decade, countries have made ambitious international climate and biodiversity commitments. In 2022, Parties to the Convention on Biological Diversity (CBD) adopted the Kunming-Montreal Global Biodiversity Framework (GBF), committing to halt and reverse biodiversity loss by 2030 through targets on climate, species and ecosystems. The 2015 United Nations Sustainable Development Goals (SDGs) complement the GBF, offering a blueprint for how humans can live in harmony with the planet. This brief outlines recommendations for how countries can utilize the landscape approach in their National Biodiversity Strategies and Action Plans (NBSAPs) under the CBD to achieve 'win-wins' for both area-based conservation and sustainable development.

This document is one in a series of policy briefs that Conservation International is producing to support countries' efforts on their NBSAPs. This brief will be particularly useful for countries as they work on their 30x30 target setting along with target 10 on productive sectors. Future topics for additional briefs will include how to ensure a rights-based approach for Indigenous peoples and local communities' (IPs and LCs) participation in the NBSAP process.

## Importance of the landscape approach to link protection and production

Agricultural lands currently make up 38% of all land on Earth[1] while wild lands comprise only 23% of all land[2]. GBF target 3 calls for the protection or conservation of 30% of the planet by 2030 (30x30). To meet 30x30 targets, it will be important to think about the interplay between these competing land uses. Agriculture is already occurring within 6% of the world's protected areas and is impacting the viability of all protected areas. Agriculture is a leading driver of land use change; for protected areas to be successful, it will be necessary to consider the complex mosaic landscapes where agriculture is a major land use.

Focusing exclusively on conservation or sustainable production in isolation has not proven effective at conserving biodiversity and ecosystem services while meeting the development needs of communities. Often, environmental protection and agricultural production are thought of as separate outcomes instead of as mutually reinforcing. To meet the ambitious global 30x30 target as well as the SDGs, we must find ways to support sustainable agriculture on existing pasture and cropland.

Conservation International and partners have successfully utilized a "**landscape approach**" to integrate "**protection and production**" efforts around the world. Experiences in a growing number of places are proving that it is possible to link conservation and agricultural development through policy solutions that allow large geographic areas – entire provinces, states, counties, departments and municipalities – to achieve biodiversity conservation goals while at the same time providing for improved agricultural output with associated jobs, incomes, food security and spiritual and cultural wellbeing.

**A landscape approach is broadly defined as a long-term process where diverse stakeholders collaborate to achieve a balance between multiple objectives on a landscape or seascape scale[3,4,5]. Linking "protection and production" – such that they become mutually reinforcing – is one way to move sectors and governments towards a more nature positive economic model that reduces drivers of biodiversity loss.**

[1] FAO. (2020) Land use in agriculture by the numbers. https://www.fao.org/sustainability/news/detail/en/c/1274219/.

[2] Watson, et al. (2018) Protect the last of the wild. Nature. Comment. https://doi.org/10.1038/d41586-018-07183-6.

[3] Sayer, Jeffrey, Chris Margules, Agni K. Boedhihartono, Terry Sunderland, James D. Langston, James Reed, Rebecca Riggs, et al. (2017) Measuring the Effectiveness of Landscape Approaches to Conservation and Development. Sustainability Science 12 (3): 465–76. https://link.springer.com/article/10.1007/s11625-016-0415-z.

[4] Sayer, Jeffrey, Terry Sunderland, Jaboury Ghazoul, Jean-Laurent Pfund, Douglas Sheil, Erik Meijaard, Michelle Venter, et al. (2013). Ten Principles for a Landscape Approach to Reconciling Agriculture, Conservation, and Other Competing Land Uses. Proceedings of the National Academy of Sciences 110 (21): 8349–56. https://doi.org/10.1073/pnas.1210595110.

[5] The term "**Jurisdictional Approach**" can also be applied in this context. The Jurisdictional Approach is a variant of the landscape approach in which boundaries correspond to governmental jurisdictions such that regulations, policies, or any commitments that require government support (e.g., enforcement) match the area alongside a coalition pursuing a sustainability agenda.

Bogota Conservation Corridor reforestation project. © Conservation International/photo by Olaf Zerbock

## CASE STUDY:

**One example of the successful application of the landscape approach is in Colombia's Bogota Conservation Corridor (BCC). This area – over 6000 km2 – includes 22 municipalities, over 1,000,000 rural people, over 10,000,000 people in Colombia's capital city and some of the world's largest intact high Andean grassland 'paramos'. These paramos act as water sponges that steadily release enough water through several linked watersheds and rivers to meet the needs of nearly a quarter of Colombia's population. However, the expansion of dairy and potato farming resulted in the loss and degradation of the paramos and deforestation in watersheds caused erosion and sedimentation, both of which were exacerbated by climate change and put essential water supplies at risk.**

**In 2007, Conservation International, national and local government partners, civil society representatives and academic institutions came together to address these challenges. By collaboratively applying the best available social, natural and economic research, a spatial plan was developed to optimize the distribution of protection and production activities to best meet the needs of all involved. Over more than a decade of work, national and regional protected areas were created to protect and restore the paramos, deforestation in watersheds and river courses was halted and efforts were made to diversify the local productive sectors to make them more sustainable and resilient in the face of uncertainties created by climate change. As a result, Andean condors and spectacled bears now live in healthy paramos, rural people's livelihoods are more secure and Bogota's urban population enjoys a healthy, reliable supply of freshwater.**

## Using the landscape approach within NBSAPs

When conservation and food and fiber production policies are not established in an integrated manner and agreed to by the full range of stakeholders, opposing interests can compete and result in sub-optimal outcomes for both conservation and production. Further, political or economic opportunities often arise to 'cash out' nature by converting intact areas into additional agricultural lands (either intentionally through sale, provision of concessions or through lack of enforcement). The landscape approach addresses this problem by building and mobilizing inclusive coalitions of stakeholders that collectively evaluate the tradeoffs inherent to balancing the protection of biologically important areas with the need for the economic development and food security that agriculture provides.

Utilizing a landscape approach to planning within the NBSAP update and revision process can help to reduce trade-offs between competing land-uses by generating buy-in and managing external pressures to convert priority ecosystems to other land-uses. Therefore, the

landscape approach provides a tool to set ambitious, feasible national targets on conservation and sustainable production as part of the NBSAP update. These targets should align and harmonize subnational and local policy and ensure a cross-sectoral approach.

In particular, the landscape approach can contribute to many of the GBF targets including targets 1, 2, 3, 8, 10, 11, 14 and 15. The following series of steps outlines some key considerations related to integrating a landscape approach into countries' NBSAP revision process.

### Apply mapping tools to understand which activities are best suited for different areas.

The GBF calls for countries to consider how to contribute to global targets related to restoration, area-based management as well as numerous targets related to sustainable production systems such as agriculture and forestry. Efficient and effective planning and implementation of national targets can be supported by a number of mapping tools that can help with scenario planning.

Free, publicly accessible online mapping tools such as Trends.Earth, Global Forest Watch and Conservation International's Resilience Atlas can be utilized to help understand the benefits and tradeoffs associated with different land use options[6]. Additionally, for-subscription tools – such as LandScale – offer a robust, integrated monitoring framework for gathering baseline information and tracking change over time related to ecosystem health, human wellbeing, sustainable production and governance conditions. This information allows multistakeholder coalitions to develop integrated landscape action and finance plans that strike a fair and equitable balance between economic development and ecosystem conservation. In terms of the GBF, utilizing these mapping tools can provide clarity around which areas should be prioritized for delivering on GBF targets, such as which areas are most important for restoration (target 2), conservation (target 3), sustainable production (target 10) and for the delivery of ecosystem services (targets 8 and 11).

### Consider interrelatedness of targets.

Once ecosystems and land uses have been mapped, this data can be combined with existing national maps and used to create, supplement or update integrated land-use mapping and planning processes at the national and relevant sub-national levels. Questions for countries to ask to inform needed actions (conservation, restoration and sustainable management) may include:

- Where are protected areas located in relation to areas used for production (agriculture, forestry, etc.)?
- Are there opportunities to create new areas of protection/conservation near areas used for production (agriculture, forestry, etc.) to allow for ecosystem services from conservation to support production (e.g. watershed protection provides water for irrigation, pollination services, etc.)?
- Are there opportunities to create new areas of protection/conservation in places with high carbon and biodiversity?
- Are there 'gaps' in the protected area network that could be connected to facilitate movement of species?
- Where are IP and LCs currently living and managing areas of high carbon and biodiversity? Can their rights and resources be strengthened?

### Determine targets and implementation approaches.

This section outlines key recommendations for implementing the landscape approach to achieve 'win-wins' for both area-based conservation and productive sectors, while also working toward achieving the targets of the GBF. All of these recommendations support the achievement of GBF targets 8 and 11, along with the other target(s) listed.

- The landscape approach can be an effective way to **bring together a variety of stakeholders** to support improved management as well as to socialize the benefits of conservation to surrounding communities, ranging from livelihood, recreational and cultural benefits as well as ecosystem services such as climate mitigation. *Convening key stakeholders to highlight the benefits of conservation will be key in achieving GBF target 3.*
- Designating Protected Areas at **various scales** (e.g., national, regional, municipal or local level), Other Effective Conservation Measures (OECMs), such as Conservation Agreements with local landowners or community-managed forests, Indigenous Community and Conservation Areas (ICCAs) and strengthening the land and resource rights of IP & LCs are all effective ways to enhance area-based conservation. Conservation areas at various scales with different management approaches can exist together within a mosaic landscape, which serve as 'win-wins' for environmental protection and the empowerment

[6] Conservation International's Irrecoverable Carbon Resilience Atlas is available here: https://irrecoverable.resilienceatlas.org/map | Conservation International's Critical Natural Assets (ecosystem services) Resilience Atlas is available here: https://cna.resilienceatlas.org/map

of local populations. *These protection and management approaches will advance GBF target 3.*

- Where agriculture takes place, stakeholders should conduct **agroecological assessments**[7] (a framework used to evaluate the integration of ecological and social principles with sustainable agriculture) and **zoning processes** to identify the areas which are most suitable for agricultural use and those which should be managed for conservation or other purposes. These zoning processes provide clarity to stakeholders and are intended to balance need of production, conservation and economic needs by encouraging cultivation in areas where farmers have the greatest chance to be successful and to discourage cultivation in areas that are not suitable, not appropriate or illegal. In addition to current land-cover, agroecological assessments and zoning should assess soils, topography, current and ideally future climate scenarios and other criteria that are essential for successful agriculture. *Conducting agroecological assessments and zoning processes will maximize productivity and resilience, contributing to GBF target 10.*
- Various sustainable land-use activities may be suitable for landscapes not destined for protection or for mosaic production landscapes (areas where production takes place amongst natural areas that house biodiversity in isolated fragments, corridors or within larger intact areas), ranging from logging, agroforestry, silvopasture to non-timber forest product extraction. The **lowest impact activities should be prioritized** for each area destined for productive use, such as implementing Reduced Impact Logging for Climate (RIL-C) in high carbon forests that cannot be protected. *This approach aligns with GBF target 10 to manage production areas sustainably.*
- Attach **positive incentives to agroecological zoning** to encourage and enhance compliance. Encouraging investment to regenerate and improve productivity on these lands can provide opportunities to build and strengthen rural agricultural economies without driving further conversion of natural vegetation. Brazil's National Agro-ecological Zoning of Sugarcane Policy (ZAE Cana), for example, was linked to improved access to credit for producers in compliance with zoning and prohibited public finance to producers outside of zones in the ZAE plan. *Incentivizing agroecological zoning will encourage the production sector to increase efficiency, productivity and resilience – all central principles needed to achieve GBF target 10.*
- Encourage **regeneration and cultivation on previously cleared lands** that are suitable and appropriate for agriculture, but which have been degraded, abandoned and/or under-utilized. Estimates of degraded land globally range from 1-6 billion ha[8]. Many of these lands could provide important pathways for agricultural development without the need for further deforestation or conversion of natural vegetation. *Promoting agricultural development on lands that are not suitable for other activities will contribute to the sustainable production goals of GBF target 10, while also supporting the more suitable for conservation under GBF target 3.*
- Promote and incentivize **sustainable intensification.** Given the growing population and societal demands on land, increasing yields using appropriate sustainable intensification will be a key strategy. Agroecological practices including integrated crop livestock and silvo-pastoral systems, agroforestry, use of quality seeds and rejuvenation of tree crops with higher yielding varieties will all play a critical role in reducing our land footprint. Tree crops such as coffee, cocoa and palm oil present significant opportunities to increase yields through use of improved varieties. The livestock sector also has enormous potential to increase stocking rates through improved pasture management and rotational grazing, all resulting in significant land sparing. In Brazil alone, during the last 10 years, beef pasture area has been reduced by 8% (15 M hectares) and herd size has increased 8% due to an 18% increase in stocking rates resulting from improved pasture management and animal weight[9]. *Achieving GBF target 10 provides an opportunity to scale sustainable intensification globally.*
- **Create incentives for farmers to enhance productivity** of their farms beyond food production. Depending on practices used, agricultural lands

[7] FAO. (n.d.) Agroecology Knowledge Hub. https://www.fao.org/agroecology/overview/en/.

[8] Gibbs H.K. and Salmon J.M. (2015). Mapping the world's degraded lands. Applied Geography. Vol. 57, Pages 12-21, https://doi.org/10.1016/j.apgeog.2014.11.024

[9] Brazilian Beef Exporters Association (ABIEC). 2022. Beef Report: Overview of Livestock in Brazil. https://www.abiec.com.br/en/publicacoes/beef-report-2022-2/.

can deliver essential ecosystem services in the form of carbon storage, watershed services, habitat provision and others. To maintain and increase the provision of these services, incentives will be required to change behaviors and practices as many farmers lack financial resources and can face risks in adopting new practices. Incentives should cover ecological services generated through improved farming practices as well as those delivered by conserving remaining natural vegetation on farms. Linking these incentives to emerging sources of carbon finance can help ensure scale and continuity of financing. *Incentivizing farmers to adopt sustainable practices and take advantage of the myriad of benefits that come from these behaviors will contribute to GBF target 10, while the maintenance and enhancement of ecosystem services contributes to GBF targets 8 and 11.*

- **Consider restoration activities as part of the broader landscape approach** strategy to enhance carbon and biodiversity outcomes and reduce degradation in intact ecosystems. Focusing restoration targets for areas in and around areas high in biodiversity, carbon and/or ecosystem services can maximize benefits for biodiversity by expanding habitats, reducing harmful edge effects and increasing connectivity, as well as increasing the ability to deploy low-cost natural regeneration methods. *Integrating restoration approaches within the production sector will support GBF target 2, while the maintenance and enhancement of ecosystem services contributes to GBF targets 8 and 11.*
- **Consider natural and active restoration.** Effective policy options for restoration may depend on whether areas will regenerate naturally, will need some assistance or will need active restoration. Natural regeneration can often be encouraged through similar policy instruments as protection, such as strengthening or reforming regulations related to property rights or tenure (as regenerating areas are often cleared to demonstrate ownership). *Both natural and active restoration approaches will help in meeting GBF target 2, while supporting tenure and rights contributes to GBF target 22.*
- **Establish economic policy instruments to encourage private actors to engage in restoration** due to the high costs of active restoration. Policy instruments can include carbon pricing to sell credits from growing trees or tax breaks for businesses along the restoration supply chain (e.g., seed-producers, nurseries). In addition to identifying suitable areas for restoration, land-use planning efforts should also identify the restoration method where possible, e.g., whether natural regeneration is possible or active restoration will be required. *Encouraging restoration through economic instruments will support GBF target 2, and mobilizing additional resources for restoration contributes to GBF goal D and targets 18 and 19.*
- Consider a **variety of policy instruments and measures** to develop or improve at various scales to implement the landscape approach in collaboration with key stakeholders on the ground. *Policy instruments that incentive sustainable production measures will support GBF target 18.*
    - Policy options to require and/or encourage sustainable land management vary widely depending on local contexts and land tenure arrangements. **Command-and-control options** – such as zoning, permitting or other property-rights based measures – can be useful for implementing land-use plans and meeting specific conservation targets. For example, Brazil's Forest Code mandates legally binding protection instruments for conservation on private lands[10].
    - **Economic policy instruments** – including taxes, subsidies, trading/market measures and pricing schemes – can be effective to guide private sector and community behavior toward more sustainable practices. For example, Costa Rica's fossil fuel tax and payments-for-ecosystem services (PES) program generates incentives for landowners to implement forest conservation, restoration and agroforestry[11]. A combination of many approaches is likely needed in any context.

[10] Walker WS, et al. (11 February 2021). The role of forest conversion, degradation, and disturbance in the carbon dynamics of Amazon indigenous territories and protected areas. Proc Natl Acad Sci U S A. 2020 Feb 11;117(6):3015-3025. Epub 2020 Jan 27. PMID: 31988116; PMCID: PMC7022157. https://doi.org/10.1073/pnas.1913321117.

[11] Payments for Environmental Services Program | Costa Rica. United Nations Climate Change. https://unfccc.int/climate-action/momentum-for-change/financing-for-climate-friendly-investment/payments-for-environmental-services-program

**Activities that provide 'win-wins' for both area-based conservation and productive sectors when done using the landscape approach to guide national biodiversity policy:**

- Designate Protected Areas at various scales with varied management approaches
- Conduct agroecological assessments and zoning processes
- Attach positive incentives to agroecological zoning
- Encourage regeneration and cultivation on previously cleared lands
- Promote sustainable intensification
- Create incentives for enhanced productivity
- Consider restoration activities as part of broader landscape approach
- Consider natural and active restoration
- Establish economic policy instruments to encourage private actors to engage in restoration
- Consider policy instruments and measures to implement the landscape approach

### Consider longer-term or unexpected outcomes of setting national targets.

Effective land-use planning processes must consider not only the current uses or designations, but also plan for sequencing land-use transitions, while anticipating medium and long-term land-use change pressures that may threaten biodiversity and climate outcomes.

While setting national conservation targets related to 30x30, it will be necessary to understand extent of conversion and related land use pressure in protected areas and intact natural habitats. Considering future climate conditions and habitat suitability shifts from climate change will be an important part of implementation of target 3 nationally[12]. Strong safeguards for communities regarding land tenure and rights is another critical element of ensuring success for this target.

Over the long-term, effective governance and enforcement of any new or existing policy is essential to reach the desired impact. Fully enforcing existing land-use laws in tropical countries could eliminate more than 40% of illegal commercial deforestation[13] and save forest countries more than $17 billion per year of losses[14].

## Conclusion

The current narrow, sectoral approach to meeting conservation and sustainable development goals has proven inadequate. Linking protection and production produces nature positive outcomes that benefit people, nature and the economy. The recommendations in this brief are meant to support the use of the landscape approach as part of countries' updated NBSAPs, implementation efforts and related policy-planning processes.

The GBF included a commitment to a whole-of-government and whole-of-society approach. The landscape approach is a proven methodology for how to translate this commitment into action. Utilizing this approach can help integrate policy solutions, on-the-ground area-based conservation efforts and agricultural development so that large geographic areas are able to achieve biodiversity conservation goals while simultaneously offering improved agricultural output with associated jobs, incomes, food security and spiritual and cultural wellbeing.

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[12] Tools like Conservation International's Climate Risk Safeguard map can help policymakers assess future climate risks: https://sparc-apps.shinyapps.io/climate_risk_safeguard/.

[13] Dummett, Cassie and Blundell, Arthur. (2021) Illicit Harvest, Complicit Goods: The State Of Illegal Deforestation For Agriculture. Forest Trends. https://www.forest-trends.org/wp-content/uploads/2021/05/Illicit-Harvest-Complicit-Goods_rev.pdf.

[14] Forest Trends. (2018) The Economic Impacts of Illegal Agro-Conversion on Tropical Forest Countries. https://www.forest-trends.org/wp-content/uploads/2018/06/Info-Brief-Costs-of-Illegal-Agro-Conversion_Final.pdf.