An overview of Participatory, Integrated, and Biodiversity-Inclusive Spatial Planning and Target 1 under the Convention on Biological Diversity Kunming-Montreal Global Biodiversity Framework

IUCN WCPA Taskforce on Spatial Planning co-led by Hedley Grantham and Vanessa Adams

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Summary

- The Convention on Biological Diversity Kunming-Montreal Global Biodiversity Framework requires signatories to ensure that all areas within a country are under Participatory, Integrated, and Biodiversity-Inclusive Spatial Planning (referred to here as PI-BISP) to bring the loss of areas of high biodiversity importance and ecosystems of high integrity close to zero by 2030, while respecting the rights of Indigenous Peoples and local communities (Target 1).

- Here, we define PI-BISP as a systematic, holistic and inclusive approach to spatial planning, that integrates terrestrial, freshwater, and marine realms, identifying the spatial actions necessary to address the drivers of biodiversity loss.

- PI-BISP guides coordinated spatial interventions to manage, protect, and restore areas for improved biodiversity outcomes and avoid potential negative impacts on biodiversity. Effective implementation of Target 1 informs the planning and achievement of multiple other GBF targets, specially on restoration (Target 2), protection (Target 3), halting species extinction, protecting genetic diversity, and human-wildlife conflict (Target 4), and ensuring sustainable, safe, and legal harvesting and trade of wild species (Target 5), amongst others.

- PI-BISP needs to take stock of existing policies; have clear goals and objectives; follow a participatory process, ensuring rightsholders and interested parties, especially Indigenous Peoples and local communities, have buy-in; is transparent and data-driven, using the best-available datasets, including areas of biodiversity importance and ecosystems with high ecological integrity, and achieves outcomes for biodiversity.

- PI-BISP should be part of an adaptive management process, linked to monitoring and evaluation with a focus on the intent or pathway to implementation, ensuring plans are on track to achieve their goals and objectives, and be amendable to adaptation.

Background

The Convention on Biological Diversity's Kunming-Montreal Global Biodiversity Framework (GBF) is a comprehensive global plan designed to address the urgent need for biodiversity conservation and sustainable use of natural resources across the globe (CBD 2022). The GBF recognizes that delivering biodiversity outcomes requires actions for places of high biodiversity importance, and ecosystems of high ecological integrity. Furthermore, it does require the need to work across the entire spectrum of ecological integrity, working in both high integrity ecosystems and potentially also those that are modified or degraded and require restoration, chiefly those biodiversity assets listed as globally threatened. It calls for "whole-of-society" engagement, fostering cooperation among governments, businesses, and civil society to implement these goals effectively (Rice et al. 2020), and in doing so sets 23 ambitious targets for the period up to 2030, plus a vision and four goals for 2050 (CBD 2022). The framework highlights the need for effective monitoring, reporting, and accountability mechanisms to track progress and ensure transparency and equity.

The first goal (Goal A) of the GBF specifies four targets, the first of which (Target 1) outlines the importance of Participatory Integrated Biodiversity Inclusive Spatial Planning (hereafter PI-BISP). This goal in general, and PI-BISP in particular, is the focus of this IUCN WCPA Issues paper. Goal A has three components based on the three levels of biodiversity:

1. The integrity, connectivity, and resilience of **all ecosystems** are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050;

2. Human induced extinction of known **threatened species** is halted, and, by 2050, the extinction rate and risk of extinction of **all species** are reduced tenfold, and the abundance of native wild species is increased to healthy and resilient levels;

3. The **genetic diversity** within populations of wild and domesticated species, is maintained, safeguarding their adaptive potential.

Target 1 of Goal A aims to ensure that all areas are under PI-BISP addressing land, freshwater, 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 (IPs and LCs). While there is consensus that Target 1 is central to guide actions for a range of GBF targets, the precise definition and nature of PI-BISP has, to date, been vague. To address the need for a guiding set of definitions and planning principles, this IUCN WCPA Issues Paper reviews and synthesizes what PI-BISP is, what it is not, and which elements of best practice spatial planning are essential in the context of PI-BISP. It also includes several case studies from around the world.

Effective implementation of Target 1 is essential when considering what is needed to achieve many other GBF targets, as it places biodiversity and the rights of IPs and LCs at the centre of PI-BISP (Dudley & Stolton 2022). Indeed, successful execution of Target 1 provides information on areas of high biodiversity important and ecosystem of high ecological integrity, strategic information on where to restore 30% of degraded ecosystems (Target 2), conserve 30% of land, waters, and seas for biodiversity (Target 3), and manage land and sea to halt species extinction, protecting genetic diversity, and managing human-wildlife conflicts (Target 4) and ensure sustainable, safe, and legal harvesting and trade of wild species (Target 5). These spatial actions further interact with management planning across a range of land and sea uses, for example to reduce the introduction and impact of invasive alien species by 50% (Target 6), minimize the impacts of climate change on biodiversity and building resilience through nature-based solutions (Target 8), integrate biodiversity conservation more closely with food production (Target 10), restore and enhance nature's contributions to people (Target 11), and enhance green-spaces and urban planning for human well-being and biodiversity (Target 12) (Figure 1). Moreover, successful implementation of Target 1 will help ensure mainstreaming 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 (Target 14). By aligning decisions with the goals of multiple targets, we can create synergies and maximize the overall impact of conservation efforts.

By conceptualizing the relationships between these targets (Figure 1), PI-BISP aims to avoid biodiversity loss through a systematic spatial planning approach tailored to the region of interest, ensuring that biodiversity loss is halted and reversed. In doing so, this recognises that planning must be conducted across all landscapes, and seascapes if the broader goals of the GBF are to be achieved and get to the outcome of a transformation in society's relationship with biodiversity and the full realization of the 2050 Vision of "Living in Harmony with Nature" (CBD 2021). The effective integration of biodiversity into a range of planning processes and policies (as guided by Target 1), will progressively align all relevant public and private activities, particularly those with significant biodiversity impacts, as well as fiscal and financial flows with the goals and targets of the GBF (Xu et al. 2021).

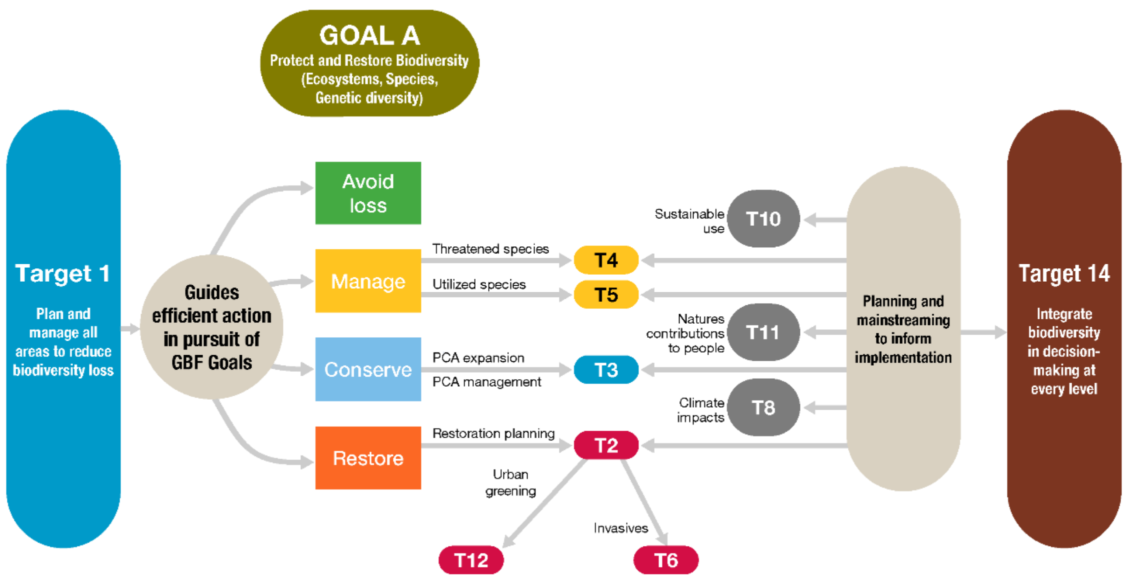

Figure 1. Relationship between Goal A, spatially explicit targets related to conserving, restoring, and managing are mapped to subsidiary non-spatial management actions that will provide critical policy underpinnings. To achieve Goal A, plans developed for Targets 1-5 must work together and in concert with a-spatial policies (e.g. T6, T8, T10, T11, T12), in particular such that biodiversity is mainstreamed into decision making at every level (Target 14). By mainstreaming biodiversity in decisions and across multiple goals, PI-BISP places biodiversity conservation and human well-being as central and interdependent elements of the targets

Defining PI-BISP and essential elements

We adapt existing definitions to define PI-BISP as a systematic, holistic and inclusive approach to spatial planning, that integrates terrestrial, freshwater, and marine realms, identifying the spatial actions necessary to address the drivers of biodiversity loss (UNDP 2023).

The essential elements of PI-BISP are therefore:

1. There are clear goals and objectives for the planning process focussed on addressing biodiversity loss and, where there are trade-offs with other objectives, these are made explicit. There is an emphasis on areas of high biodiversity importance, including ecosystems of high ecological integrity (**Biodiversity Inclusive**)

2. Planning is holistic and considers ecological connectivity (including action across connected realms (Adams et al. 2014; Álvarez-Romero et al. 2015)) (**Connected**)

3. Planning is spatial in nature and guides broadly what to do where across multiple actions for land, freshwater and sea uses (**Spatial** and **Integrated**)

4. Planning is participatory and inclusive of the diversity of social, cultural, and economic values that a place might hold (thus, often seeks to optimize or to guide multiple actions not siloed individual ones) (**Participatory**)

5. The emphasis of PI-BISP is to ensure that points 1-4 are aligned and is biodiversity and human wellbeing outcome driven. Thus, it must be adaptive with a strong monitoring and evaluation feedback to inform iterative planning and implementation. (**Outcome focused**)

The Kunming-Montreal GBF emphasizes biodiversity inclusive spatial planning as a core approach to guiding structured land, freshwater and sea uses that result in nature positive outcomes that ultimately result in beneficial outcomes to nature and people. While most targets have a range of meaningful indicators to monitor progress in implementation as well as ultimate desired outcomes, Target 1 indicators are less mature. Ensuring that PI-BISP has the desired nature positive outcomes requires indicators that can signal both early planning through to full implementation and downstream outcomes. We propose additional indicators (Box 1) here that align to the 6 essential elements identified in our definition above and discussed below.

PI-BISP **prioritizes biodiversity, elevating it to the forefront of spatial planning,** and considers the impacts of various human activities to identify beneficial outcomes, weigh trade-offs, and estimate potential losses for biodiversity to facilitate transparent decision-making. The goals are to maintain and, where possible, restore biodiversity, with a strong focus on **high biodiversity importance areas**, **ecosystems of high ecological integrity and where human interventions are needed to abate threats**.

Unlike siloed, single-action planning (e.g. just for new protected areas), PI-BISP i**ntegrates multiple, interrelated actions, taking into account connections across biomes to** manage areas for positive biodiversity outcomes, aiming to prevent biodiversity loss and promote biodiversity gains over time. As a result, areas align with multiple goals and targets identified for conservation, management and restoration action, or places to avoid negative outcomes. Clear definitions and guidelines are essential to understanding how different land, freshwater, and sea uses interact to influence biodiversity loss.

PI-BISP involves identifying **spatially explicit actions** across a wide range of land, freshwater and sea uses to ensure that biodiversity is considered and improving in status across all aspects of biodiversity (genetic, species, and ecosystems). In doing so, successful PI-BISP will necessarily consider where and when to deploy interventions such as protection, restoration, and management (Figure 1, Case study 1 Ecuador) and thus, deliver in part on multiple GBF Targets.

"Biodiversity-Inclusive" implies that **conservation practices are integrated across all human uses** through comprehensive spatial planning processes. In other words, it is critical that biodiversity planning is not relegated to a single focus like protected areas or conducted separately from economic and other planning exercises. Instead, holistic spatial planning must be conducted in a way that reflects the need to halt biodiversity loss in the context of human-uses like agriculture, energy, fishing, forestry, mining, and urban expansion and, including supporting infrastructure, and all other uses together (see Case Study 2 South Africa).

Holistic planning, such as described here, integrates actions across human uses and needs and thus requires institutional coordination (within government departments and across sectors) as well as balancing sometimes competing needs. This necessitates **participatory** approaches to planning that are designed to balance participation across a diversity of actor to encourage a whole-of-government or whole-of-society approach.

PI-BISP is **outcome focused with a priority on ensuring nature positive outcomes.** Therefore, monitoring and measuring these outcomes is essential as part of both the explicit up front objectives but also in monitoring and evaluating plan outcomes for biodiversity. This approach ensures that biodiversity is **mainstreamed** into all aspects of planning, promoting sustainable development and conservation efforts that align with global biodiversity goals.

Importantly, the implementation of PI-BISP should achieve additionality from conservation interventions, meaning that it should answer the question: “What baseline or trend do we want to change or avoid relative to no action or ongoing loss” (Baylis et al. 2015; Akçakaya et al. 2018; Adams et al. 2019a). Answering this question, specific to biodiversity outcomes, will ensure that PI-BISP is contributing to a nature positive future and ultimately meeting the GBF 2050 Goal A.

Box 1. Lack of a global indicator on PI-BISP and suggestions for moving forward

A current headline indicator for Target 1 is "percentage of land and seas covered by biodiversity-inclusive spatial plans". To date, no comprehensive and uniform data sources have been identified for Target 1, and there is need to develop one. While Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) approved methodological assessment on integrated biodiversity-inclusive spatial planning and connectivity (for consideration by the Plenary at its fourteenth session in 2027) will feed into processes to define and operationalise this indicator, it is many years away.

We propose that the definitional elements of PI-BISP discussed here provide the foundations for specific and measurables indicators to guide monitoring of the implementation and outcomes from PI-BISP. In Figure 2, we have adapted the Marine Spatial Planning Index (MSP) (Reimer et al. 2023) to create a structured framework that maps the defined features of PI-BISP to specific measurable elements. This framework enables the assessment of progress against Target 1 of the GBF, ensuring that each aspect of PI-BISP is systematically monitored and evaluated. More work is needed on this in the future Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) plans.

Adapting the approach presented by Reimer et al. (2023) for the MSP Index – there are six principles, and each principle has six features for a total of 36 features that receive a score. Reimer et al. 2023 recommend scoring each feature on a scale of 0 (absent) through to 3 (excellent) for a total of 108 points. Thus, the scores can allow for a total score at the plan level but also identification of particular principles within a plan that are present and well developed and vice versa (Figure 2).

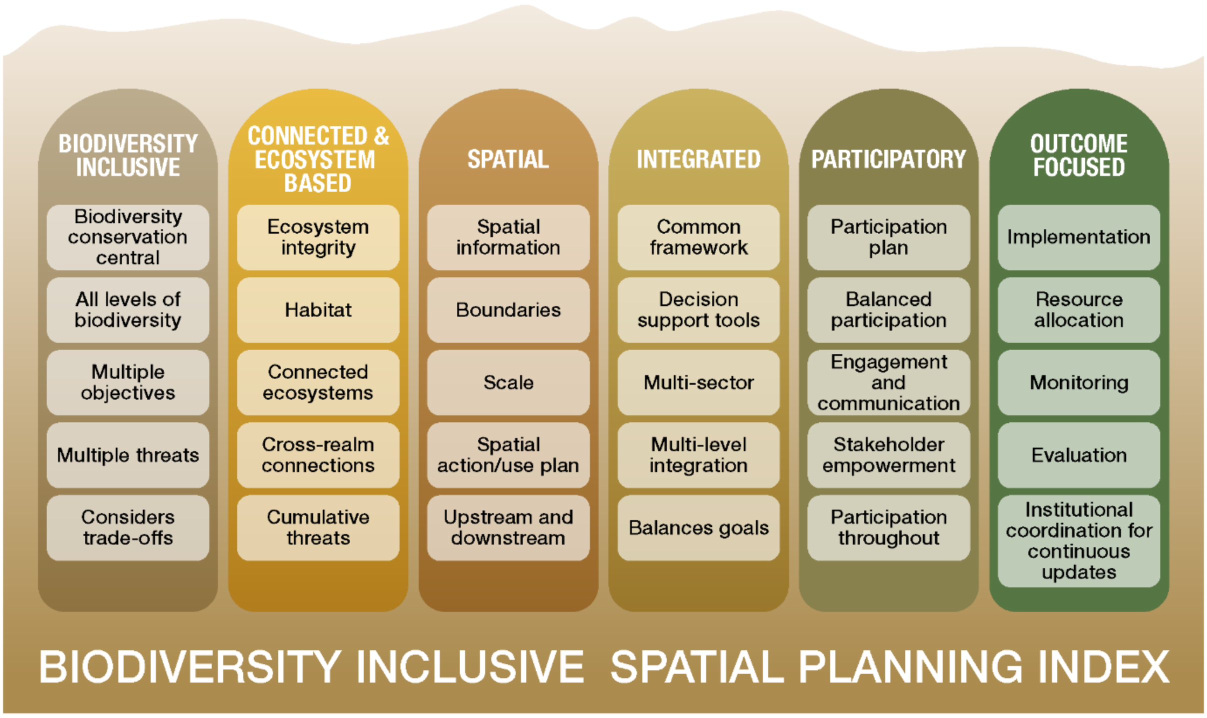

Figure 2. The 6 principles of PI-BISP and associated features that can be measured to monitor progress against Target 1. Here we have adapted the Marine Spatial Planning Index (Reimer et al. 2023) (top) to propose a Biodiversity Inclusive Spatial Planning Index (bottom).

Best practice in spatial planning principles for PI-BISP

The consideration of policy at multiple scales is central to achieving Target 1 and integrating with spatial planning designed to meet nested related targets (Figure 1). Fundamentally, PI-BISP seeks to determine the optimal allocation of conservation efforts and resources across space and time, to preserve and restore biodiversity while mitigating and minimizing adverse impacts. It is a process that not only identifies important locations for biodiversity, but also recommends multiple spatial actions that should be taken in those areas (Brown et al. 2015; Tallis et al. 2021) and, ideally, identifies the financial or opportunity costs of those actions too. Box 2 demonstrates one possible set of design steps to achieve PI-BISP (Mapping Hope ELSA design steps).

Box 2. Planning process for PI-BISP

A well-designed planning process is essential for design and implementation of PI-BISP. The project 'Mapping Hope,' implemented by the United Nations Development Programme (UNDP), supports government to use integrated, biodiversity-inclusive spatial planning to identify where they can protect, sustainably manage, and restore their ecosystems for a better future for all (UNDP 2023). Within this framework, integrated spatial planning is an approach building on the "whole-of-government" approach, aiming to create land use maps that show pathways to achieving multiple outcomes at once, capitalizing on synergies between nature, climate, and sustainable development ambitions. The resulting maps, called Essential Life Support Areas (ELSAs) maps, can help solve complex development issues by indicating where action could propel a country towards its national development targets. The process to map ELSAs is underpinned by national policy commitments, national stakeholder leadership, spatial data, and systematic conservation planning tools (Figure 3).

Figure 3. Five steps for identifying Essential Life Support Areas (Venter et al. In prep)

As governments undertake PI-BISP analyses to guide their actions under the GBF, we need to adopt several principles to ensure that their planning is efficient and effective. We discuss each of these and draw upon case studies. The case studies presented throughout this report demonstrate key differences in PI-BISP to other types of spatial planning, but also emphasize commonalities in the types of data and tools used.

Key shared elements of these case studies are that they are regions that have a long experience in spatial data development and use in planning, that the policies and stakeholders had were committed, and that the planning was supported by decision support tools appropriate capable of accommodating complex problem statements, and spatial solutions aimed at maintaining, enhancing or restoring and averting loss to ecosystems and species.

Accounting for interrelated policies and targets to design appropriate planning processes

In planning for actions at nested scales and to respond to multiple global targets, PI-BISP must consider and respond to a range of policies. The ELSA case study is an excellent example (Case Study 1 Ecuador). The ELSA process begins by identifying up to ten key policy documents that outline a country's priorities for biodiversity, climate change, and sustainable development. A rapid policy analysis is conducted to identify nature-based commitments, and during a stakeholder consultation workshop, national stakeholders select the top ten commitments that can be mapped using spatial data.

The next step involves identifying nature-based actions—measures to protect, manage, and restore ecosystems—to support these commitments. Each action is defined in consultation with stakeholders, with area-based targets set to guide the analysis of land areas suitable for protection, restoration, and management (see Figure 1 and Case Study 1 ELSA in Ecuador).

Case Study 1. ELSA. Mapping Hope through integrated spatial planning: the case of Ecuador

The effective achievement of targets of the GBF relies on the effective use of integrated spatial planning frameworks that are adaptable to national circumstances. In this case study, we showcase ELSA mapping in Ecuador, where the use of real-time scenario analyses enabled diverse stakeholder groups to collaborate together to rank national priorities, view trade-offs that result from conflicting priorities, thereby fostering dialogue and collaboration (Venter et al. In prep).

Ecuador is home to globally significant biodiversity (both in density of species and number of threatened species) (Mestanza-Ramón et al. 2023). Through the project Mapping Hope in Ecuador, stakeholders identified 10 priority policy commitments that defined the national vision, curated national data to map the policy commitments, and co-created the ELSA map. The resulting ELSA map of Ecuador outlines an ambitious expansion of protected areas from 25.5% of the land area covered by existing protected areas to 30%. It also outlines critical areas to pursue sustainable management practices (5% of land areas) and ecosystem restoration (3% of land areas) to achieve multiple environmental outcomes. The map identifies large ELSAs within the relatively intact Amazon region for expanding protected areas; extensive areas for sustainable management within the heavily populated Andes region; and a range of ELSA zones across all three actions (Protect, Restore, Manage) in the coastal region of Ecuador (Fig. 4) (Venter et al. in prep).

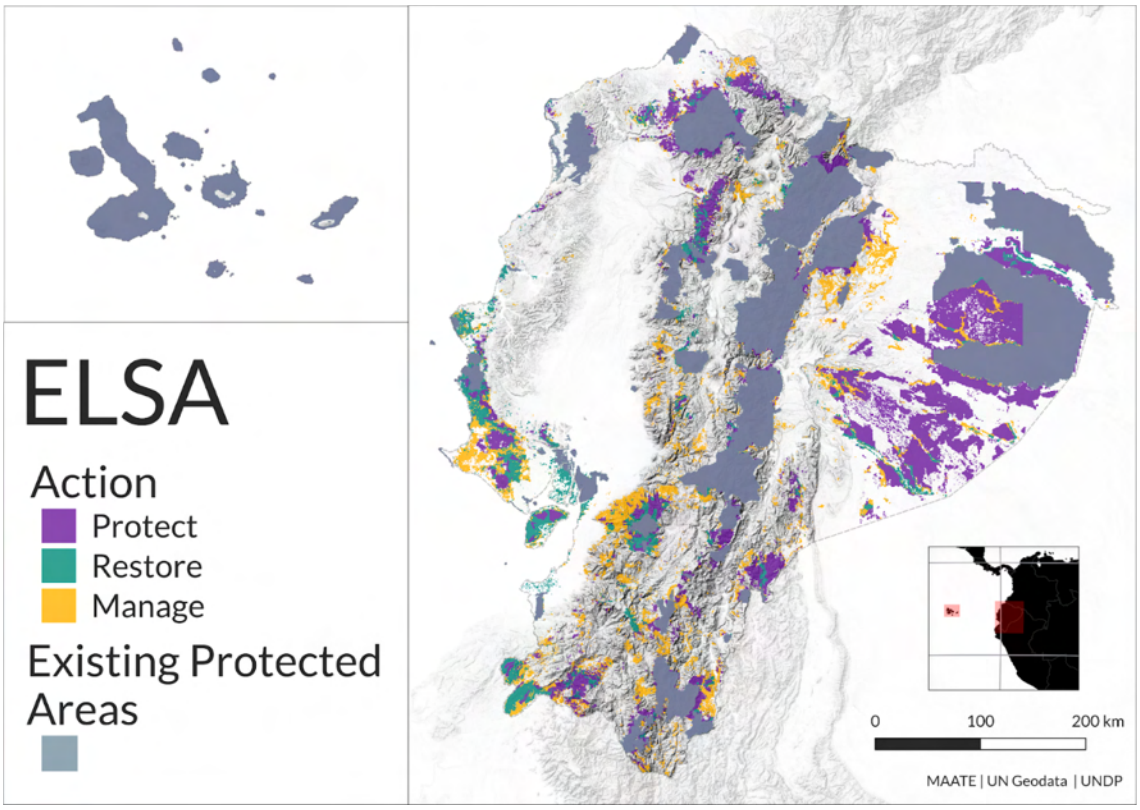

Figure 4. National validated ELSA map identifying where achieving an additional 4.5% protection, 5% management and 3% restoration can maximize combined representation across all planning features and achieve Ecuador's national vision for nature (Venter et al. In prep).

As the methodology behind "Mapping Hope" formalizes a process for fostering cooperation among governments and civil society, the process speaks to mainstreaming components of the GBF, especially Target 1, where it is to ensure that "all areas are under participatory, integrated and biodiversity inclusive spatial planning" (CBD 2022). To support all countries to undertake this type of analysis, an integrated spatial planning tool is being developed by the UN Biodiversity Lab partnership and will be released in 2025. This tool will allow the development of a map to identify areas for protection, restoration, sustainable management, and urban greening to best achieve the GBF. This could support ongoing national work around NBSAP revision and implementation, as well as planning for implementation of national targets in response to Targets 1, 2, 3 of the GBF, and other spatial targets and indicators. Innovations in spatial planning, such as the ELSA maps, can help Parties to take more effective action to transform society's relationship with nature by 2030.

A unique aspect of PI-BISP is that it will guide multiple uses and actions in a land or seascape and thus contribute to designing areas for Targets 1, 2, and 3. As such it will interface with multiple policies, commitments, and planning features. ELSA is designed to support this by mapping commitments to features and assigning specific actions across space. For example, see Fig. 5 for how stakeholders mapped national policy documents and commitments for ELSA in Ecuador.

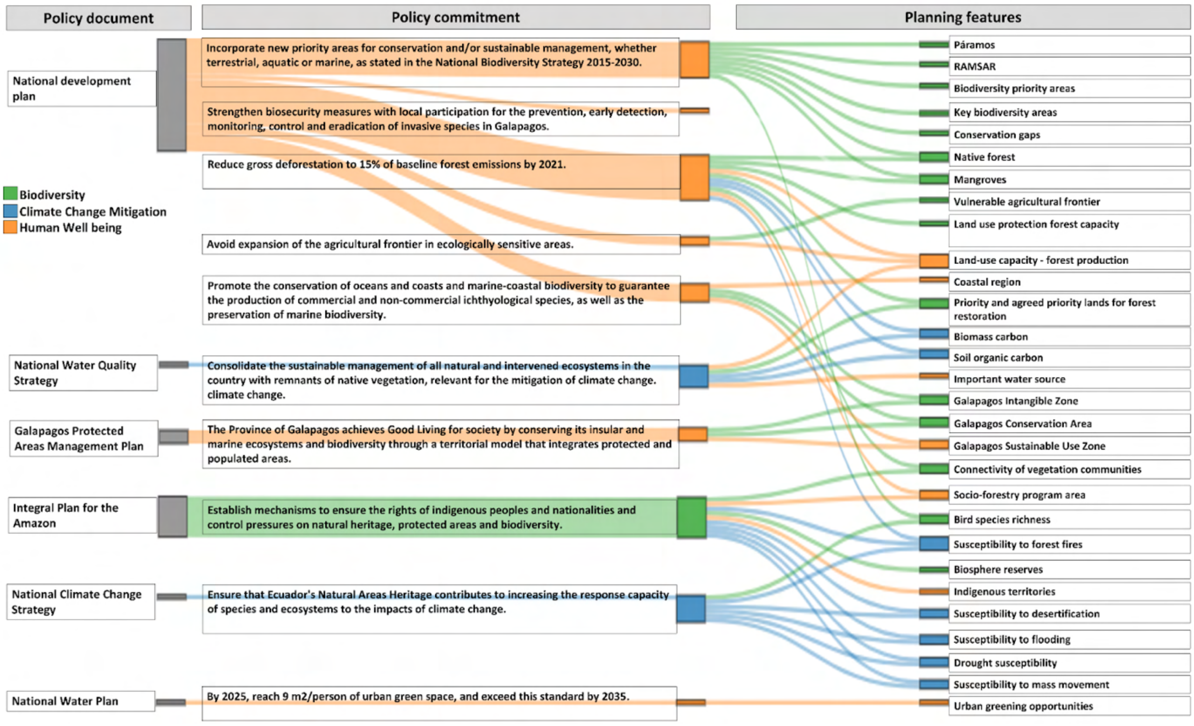

Figure 5. Stakeholders identified six national policy documents, from which they selected 10 priority policy commitments that defined the national vision for ELSA in Ecuador. They also identified national and global spatial data to serve as proxies for these commitments. Each of the spatial proxies were coded by stakeholders for biodiversity, climate mitigation, and adaptation, or human well-being to evaluate trade-offs among environmental values (step 5) (Venter et al. In prep).

Implementing best practices in spatial conservation planning, such as those used in protected areas, land use planning, freshwater planning, and marine spatial planning (Moberg et al. 2024; SANBI & UNEP-WCMC 2024; Jones et al. 2024), is critical for PI-BISP. Key aspects of these practices include setting effective IPs and LCs engagement throughout the planning process, setting clear objectives and goals, appropriate data matched to goals (social, ecological, and economic), and the utilization of decision-support processes and tools to ensure optimal planning outcomes. We provide details of these below and draw upon case studies to demonstrate aspects of good practices that can be deployed within PI-BISP processes.

Importance of meaningful engagement throughout

For PI-BISP to be successful, it requires a clearly articulated set of best-practice principles (Reimer et al. 2023), including the identification and engagement of stakeholder groups across different phases of the process, with a strong focus on equity considerations, and involvement inclusive of IPs and LCs. Conservation initiatives only work in the long-term if they are supported by people connected to the planning area.

Principles of Inclusiveness, Equity, Justice, and Free, Prior, and Informed Consent (FPIC) are thus strongly endorsed by the CBD and are crucial for successful PI-BISP. While this guidance focuses on developing spatial plans that prioritises biodiversity conservation, we note that any decisions, especially surrounding the establishment of new protected and conserved areas, must consider the social and cultural priorities of IPs and LCs (Heiner et al. 2019b). Furthermore, planning in certain geographies can and should be led by IPs and LCs. In these cases partnerships with NGOs or other planning organisations can support leadership by IPs and LCs in the development and implementation of conservation strategies (Hinchley et al. 2023). These principles not only uphold human rights in conservation, but also enhance the effectiveness, durability and resilience of conservation strategies, ensuring that conservation and other measures are equitable and beneficial for both biodiversity and local people.

There is certainly value in identifying areas that are essential for meeting the stated planning objectives, but this must be done with sensitivity to lands and waters formally or customarily governed by IPs and LCs. Proposing actions, such as protecting conserving or managing areas, in places where people live, farm, or practice their culture might cause negative outcomes unless these are identified and designed in concert with those impacted. Even if well-intentioned, conservation efforts have caused harm in the past (Brockington & Schmidt-Soltau 2004; Brockington & Igoe 2006; West et al. 2006). It is important for PI-BISP to both recognize these past harms and to support efforts for more equitable conservation practices moving forward, including through FPIC. IPs and LCs and other interested stakeholders should be involved throughout the planning; local or traditional ecological knowledge can often exceed that of incoming experts. For example, in Northern Australia incorporation Indigenous and local ecological knowledge (IK/LEK) has improved data, models, and ultimately conservation outcomes (Ens et al. 2012; Campbell et al. 2022; Russell et al. 2023).

To ensure that PI-BISP is effectively implemented, it must also link inputs and targets to systematic monitoring and impact evaluation, ensuring that implemented plans are assessed for their real-world effectiveness and applicability. Planning which relies solely on top-down processes for (and thus has superficial consultation (Adams et al. 2019b)) is inconsistent with our definition of PI-BISP. Instead, it should emphasize meaningful participation from IPs and LCs, moving as far as possible up the ladder of participation to ensure that plans that are equitably governed. Involving rightsholders through meaningful and participatory processes may inevitably increase the time and supporting planning processes required, but, if negotiations are successful, it also has a far higher chance of success. For example, a recent study reviewed 648 conservation studies and found that when IPs and LCs have a more equal role, rather than being treated merely as stakeholders, conservation initiatives are more likely to have better social and ecological outcomes (Dawson et al. 2024)

Setting goals and objectives

Setting clear goals and objectives centred around biodiversity conservation in PI-BISP is crucial for guiding the proposed spatial planning approach. Goals should provide a long-term vision, outlining the desired conservation outcomes for a region. They serve as a roadmap, ensuring that all planning activities align with the broader vision of biodiversity conservation and sustainable development that respects the rights of IPs and LCs.

Objectives, on the other hand, are specific and measurable actions or outcomes that help achieve these overarching goals. By establishing clear goals and objectives, planners can create a coherent strategy that addresses the needs of biodiversity, particularly areas of biodiversity importance and ecosystems of high ecological integrity, while considering the current impacts of human activities and anticipating future challenges and opportunities.

Moreover, goals and objectives in spatial planning are the basis for meaningful engagement and consensus-building. When IPs and LCs, government agencies, developers, and other stakeholders contribute to defining the intended outcomes of a planning initiative, they are more likely to support and collaborate on its implementation (Campbell et al. 2023). Clearly defined goals and objectives help communicate the benefits and trade-offs of proposed plans, making it easier to garner public support and address concerns. This collaborative approach ensures that the plans reflect the needs for addressing biodiversity loss, as well as the aspirations and needs of the rights holders and interested parties, leading to more successful and accepted outcomes.

Central to setting conservation goals and objectives is understanding the primary drivers of biodiversity loss and identifying places of high biodiversity importance and ecosystem of high ecological integrity based on threats and potential additionality of conservation actions for contributing to positive biodiversity outcomes. Identifying the drivers of biodiversity change involves identifying and examining drivers with significant impacts on the biodiversity of the planning region. Key drivers are likely to include habitat destruction, climate change, pollution, overexploitation, and invasive species.

To assess these drivers, a combination of field studies, expert knowledge (including Indigenous and local ecological knowledge), remote sensing, and ecological modelling might be required. By understanding how these drivers interact and affect biodiversity, planners can develop targeted conservation strategies to mitigate negative impacts and promote ecosystem resilience. This may result in multiple interacting plans that are linked by clear objectives. For example, the case of South Africa demonstrates how systematic conservation planning, with clearly articulated biodiversity objectives and targets, can be linked with broader goals to guide multiple plans for meaningful land and sea use (Case study 2 South Africa).

Case Study 2. South Africa's response to the biodiversity inclusive spatial planning target of the GBF

This case study presents spatial planning in South Africa as it expands from single intervention planning (e.g. Protected Areas) to broader land and sea use planning. In expanding to guide spatial uses that interface and meet multiple policy goals South Africa's spatial planning approaches have begun to guide multiple-objective planning. This case study thus emphasizes the need for clear objective and goals for planning and demonstrates how planning approaches can mature from single action planning (e.g. to meet Target 3) to PI-BISP.

South Africa is well known as an early adopter of Systematic Conservation Planning (SCP) and for making substantial efforts to link biodiversity plans (as they are known in South Africa) to regulatory frameworks (Botts et al. 2019). SCPs have been conducted for all of South Africa's territory (land and sea; Figure 6). The plans are used in a wide range of processes – some uses are voluntary (e.g. strategic planning and priority setting by NGO's) other uses are mandated by government regulations (e.g. Bioregional Planning Regulations and the National EIA Screening Tool). A clear community of practice has emerged (i.e. Biodiversity Planning Forum) and Guidelines have been developed over time (Driver et al. 2017). There are officially recognised National, Provincial and Municipal biodiversity plans and a constellation of plans developed by NGOs, researchers and private companies for specific purposes and have been evaluated for effectiveness in a range of contexts (e.g., von Staden et al. 2022).

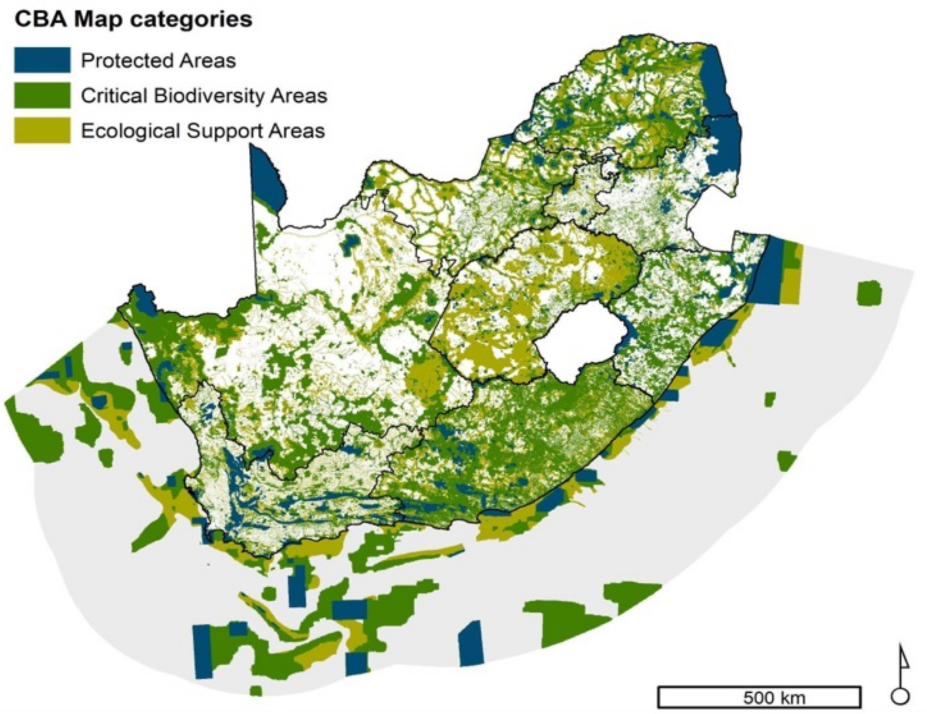

Figure 6. The spatial priority areas of Systematic Biodiversity Plans in South Africa are known as Critical Biodiversity Areas, and Ecological Support Areas. Plans and land/sea use guidelines now cover all of South Africa's territory (Driver et al. 2017).

While having good national coverage of Systematic Conservation Plans is a valid objective, the reason PI-BISP was included in the Global Biodiversity Framework was as a key action to ensure that the Goal of protecting and restore gall levels of biodiversity could be met by 2050. Consequently, the key considerations that have emerged when setting national targets for PI-BISP in South Africa are:

- What proportion of the SCPs have been formally incorporated into formal multi objective land and sea use plans that meet the definition of "participatory, integrated biodiversity inclusive spatial planning")? - primarily Spatial Development Frameworks & Marine Spatial Plans in the South African setting,
- How effectively have the spatial priorities and land/sea use guidelines from the SCPs been incorporated into legally binding planning frameworks,
- How up to date are the plans, and
- To what degree were they participatory.

In the South African case, most of the plans are participatory in nature. Biodiversity plans on the mainland have been included in formal national, provincial and municipal land use planning, but there are concerns that some municipal SDFs do not incorporate the priorities and guidelines of the biodiversity plans in a meaningful way, and that some provincial and municipal level biodiversity plans are over 5 years old. In the marine and coastal space, there is a recent, nationally endorsed marine and coastal Systematic Conservation Plan. However, the Marine Spatial Planning process (Government of South Africa 2019; Holness et al. 2022), into which the SCP should be incorporated, has only recently begun. As the MSP process rolls out region by region South Africa aims to approach the 100% Target for participatory, integrated, and biodiversity-inclusive spatial plans by 2030, to meet the ambition of Target 1 of the Kunming-Montreal GBF.

Setting goals and objectives also provides a framework for evaluating the effectiveness of PI-BISP. By establishing benchmarks and performance indicators linked to specific objectives, planners can monitor progress and make data-driven decisions. This continuous evaluation process allows for adjustments and improvements, ensuring that planning efforts remain relevant and effective over time. It also enables accountability, as stakeholders can assess whether the planning outcomes align with the initial goals and objectives, fostering transparency and trust in the planning process. Regular monitoring and evaluation of how effective BI-BISP is will help ensure that the process can be adaptive, most effective, and aligned with best practice. We present potential metrics against each feature of PI-BISP (as adapted form Reimer et al. 2023). These could be monitored at a country or regional level to understand how effective PI-BISP processes are and overall progress against Target 1 (see Box 1).

Selecting appropriate data

Robust data is required across the PI-BISP planning process, but particularly for the identification of areas of biodiversity importance, integrating information about threatened biodiversity (populations, species and ecosystems), ecosystem processes, ecological integrity, connectivity, threats to biodiversity, and broader social-cultural values associated with these. The minimum required data for undertaking PI-BISP is an ecosystem map, an understanding of ecosystem extent and condition, species (typically of conservation concern) occurrences, threats or risk status to ecosystems and species, and land uses. These products can then be integrated to identify spatial locations that best match management actions to improve biodiversity outcomes (e.g. to protect, manage, restore) (Figure 7). This data exists at global scales and we emphasize that data should not be a barrier to undertaking PI-BISP as participatory planning processes are often a meaningful way to embed data collection and multiple forms of knowledge into planning (Adams 2024a).

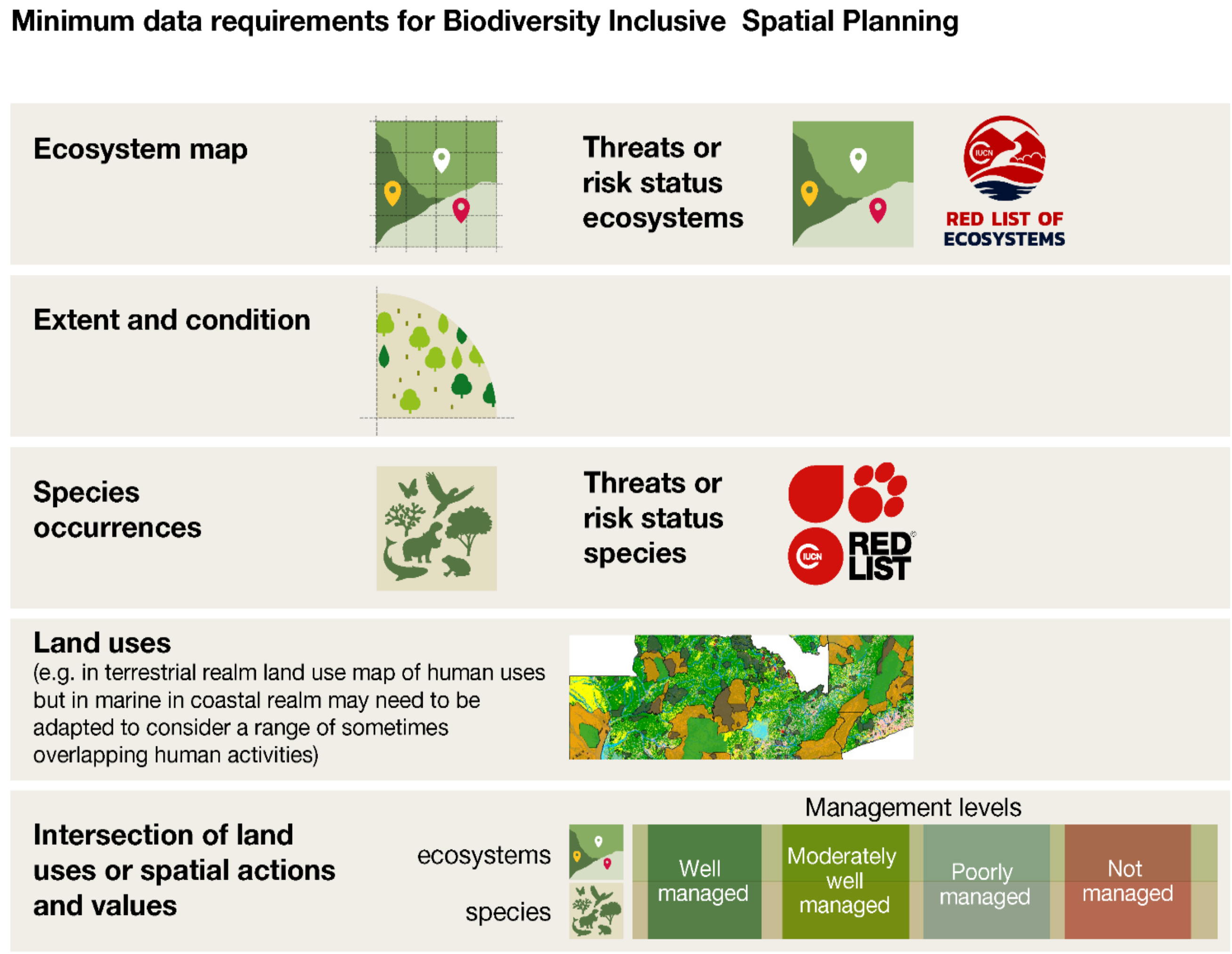

Figure 7. Minimum data requirements for biodiversity inclusive spatial planning with examples of sources (e.g. threat status of ecosystems and species can be sourced from the IUCN red list) (SANBI and WCMC 2024).

Where data is available, PI-BISP should consider as many levels of biodiversity as possible (Box 3). Incorporating data on both distribution and threat status of both species and ecosystems enables the development of spatial plans that are representative of, and adequate for conserving, all levels of biodiversity. Global IUCN standards including Key Biodiversity Areas, Red List of Threatened Species and Red List of Ecosystems (including the IUCN Ecosystem Typology) can help with this, though recognising all are incomplete and heavily biased geographically and thematically, and nations should use data sets that best meet their needs. Where ecosystem maps are unavailable, combinations of biophysical drives can be used to quickly create surrogates for ecosystem maps (for example temperature, rainfall and soil type on the land – and depth, productivity from satellites, current speed and bottom type, for the ocean) which are usually reasonable surrogates for species too.

Along with considering the distribution of biodiversity, it is also essential to use data on the ecological integrity or condition of ecosystems, which can inform identification of ecosystem of ecological integrity as targets for protection, and degraded areas as targets for restoration. By utilising these types of datasets (and the methods behind them), nations can identify patterns of biodiversity and management needs for biodiversity across a range of management strategies. In many environments these data may not yet exist, or be incomplete. Thus, investment in data acquisition and modelling to support PI-BISP may be an essential first step. The MSP planning in the High Seas Case Study demonstrates how investment in data acquisition and modelling to develop appropriate data products for PI-BISP can support planning and implementation of biodiversity inclusive marine uses (Case Study 3 High Seas).

Box 3. Key types of biodiversity and threat mapping data

In terms of identifying areas of high biodiversity importance and ecosystems of high ecological integrity, there are numerous biodiversity elements that can be considered, data permitting, including the following (see (Watson et al. 2023)):

1. Rare or threatened species and habitats, and the ecosystems that support them
2. Threatened and/or collapsing ecosystems
3. Endemic and range-restricted species and ecosystems in natural settings
4. Globally significant ecosystems (e.g., significant wetlands, Gondwanan rainforests, coral reefs)
5. Areas with a high level of ecological integrity
6. Ecosystems especially important for species life stages, such as feeding, resting, moulting and breeding
7. Important species aggregations, including during breeding, feeding, resting, migration or spawning
8. Climate refugia and corridors for species and ecosystems
9. Ecosystems containing high levels of carbon in either above ground, or below ground, biomass
10. Representative natural ecosystems
11. Areas of importance for ecological connectivity or that are important to complete a conservation network within a landscape or seascape
12. Areas important to sustain ecological and evolutionary processes and ecosystem functions
13. Focal species, including umbrella, keystone, migratory, and culturally or economically important.
14. Areas important to sustain ecosystem services or nature’s contributions to people

In planning for a range of actions, aligned with GBF Targets to Avoid loss, Protect, Conserve, Manage and Restore, understanding the spatial distribution of threats to biodiversity is another core consideration (Tulloch et al. 2015). Common major threat groups (Kearney et al. 2023) which can be mapped individually (Ostwald et al. 2021) or cumulatively include (Halpern et al. 2015):

1. Habitat destruction and degradation
2. Species over-exploitation
3. Invasive species and diseases
4. Altered disturbance regimes (e.g. fire regimes, disrupted nutrient cycles)
5. Pollution
6. Climate change
7. Many others

The resolution and quality of data must be considered relative to the scale and scope of the planning. Global data should be considered only where there is an absence of appropriate national or local data sets, and investment to improve data is essential over time. In particular, alternate sources of data including local ecological knowledge (De Freitas & Tagliani 2009; Ens et al. 2012; Ban et al. 2013; Russell et al. 2023), crowd-sourced data (Chowdhury et al. 2023a; Chowdhury et al. 2023b; Adams 2024b), social media sources for community engagement, and other non-traditional data sources should be elicited and integrated with traditional data sources to support decision making. This has been demonstrated to improve decision making capacity (Chamberlain 2018; Adams 2024b).

The South Africa case (Case Study 2) provides as an example of how biodiversity mapping (in this case Critical Biodiversity Areas) has evolved over time and guided land use decisions inside and outside of protected and conserved areas as a key underlying principle for effective PI-BISP. It also provides an example of Critical Biodiversity Areas crossing land, freshwater and marine realms and demonstrates how the mitigation hierarchy can be considered as areas critical for biodiversity are considered within a variety of relevant land, freshwater, and sea use decisions.

Ultimately, PI-BISP should consider major drivers of biodiversity loss, and thus, should map and consider guiding areas suitable for new development and areas most vulnerable to damaging human-uses, and climate change particularly in areas of high biodiversity importance — where negative impact should be avoided. In addition, planned actions should abate threats to provide real, additional benefits.

Data on ecological integrity are also crucial and can be used to target different conservation actions, e.g., protecting high integrity ecosystem areas, restoring degraded areas of potentially high importance biodiversity, and managing invasive species. Ecological integrity refers to the extent to which an ecosystem's composition, structure, and function are within a natural range of variation and free from significant human modification (Nicholson et al. 2021). Mapping of ecological integrity can be based on direct indicators of different direct components of ecological integrity, and/or indirectly through levels of human pressures (Riggio et al. 2020; Theobald et al. 2020; Mu et al. 2022).

Incorporating maps that consider other potential human uses and areas suitable for development expansion will also be essential for the design of realistic and achievable conservation efforts. Doing so will help proactively identify where land conversion is likely to occur and where conservation interventions are more urgently needed to avoid future loss to biodiversity and to mitigate potential negative impacts to people (Neugarten et al. 2024; Oakleaf et al. 2024). This is especially true for uses essential to providing basic human needs (e.g. agriculture, fishing, fresh water), or which are important for the energy transition required to combat climate change (e.g. rare earth minerals, transmission lines).

Case Study 3. Marine Spatial Planning in the High Seas of the South Pacific. A summary based on Rowden et al., (in review).

Here, we provide a case study of development and implementation of biodiversity inclusive marine spatial planning by the South Pacific Regional Fisheries Management Organisation (SPRFMO), which is responsible for managing a Convention Area covering about a quarter of the Earth's high-seas areas (Figure 7).

The South Pacific Regional Fisheries Management Organisation manages a relatively low-catch and effort demersal fishery concentrated in the western part of the SPRFMO Convention Area (grey in Figure 8). In 2014, SPRFMO members agreed on the need to implement an area-based management approach for bottom fisheries to protect Vulnerable Marine Ecosystems from significant adverse impacts while enabling viable fisheries to operate (SPRFMO, 2014). To enable this, they undertook spatial planning for priority areas for spatial fishing management closures to deliver on biodiversity and fisheries objectives. This meets the definition of PI-BISP as it is spatial in nature, was planning for more than a single intervention, and had biodiversity central in the planning.

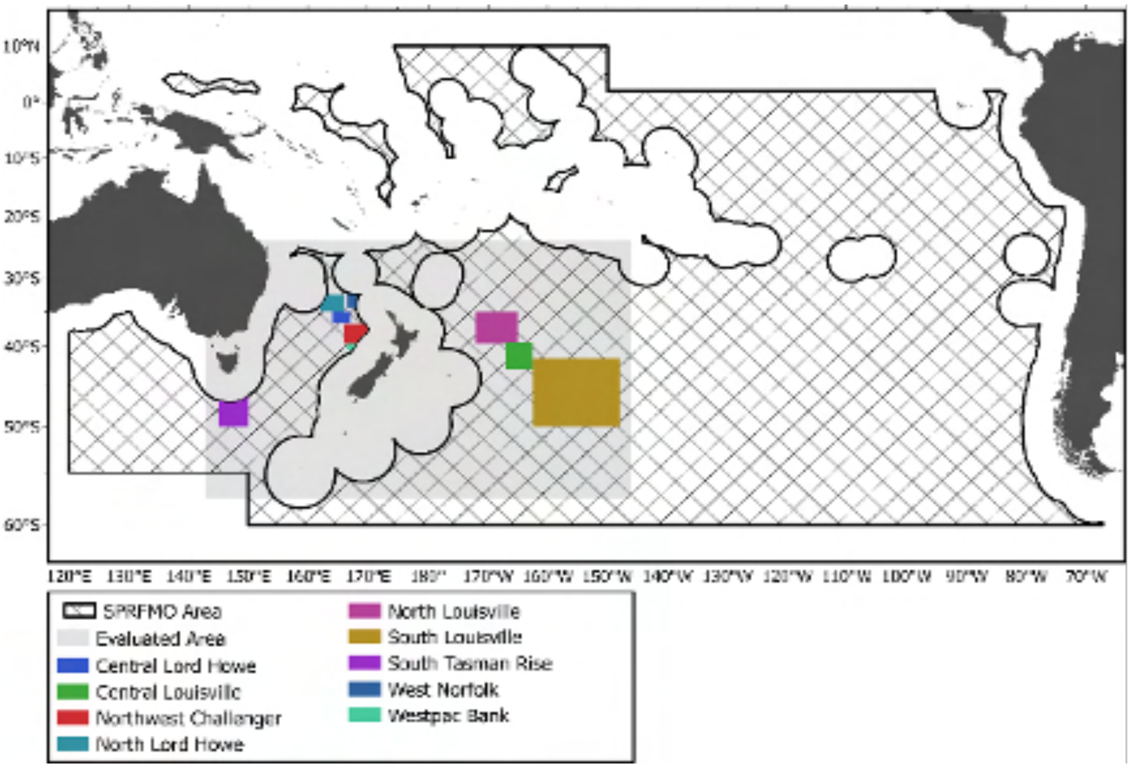

Figure 8. The SPRFMO Convention Area (hatched) with the location of the Evaluated Area (grey box – the area in which the bottom fishery operates) and Fisheries Management Areas (FMAs) (coloured areas). From Rowden et al. (in review)

To support this recommendation, members agreed to progress two key pieces of work:
1. The collation of key spatial layers representing the best available estimates of Vulnerable Marine Ecosystems distribution (using habitat suitability models, (Anderson et al. 2016; Stephenson et al. 2021; Bennion et al. 2024)) and distribution of value to the fishery developed by the fishing industry that identified core areas of fisheries value
2. The use of a spatial decision-support tool to assist with a systematic and transparent approach to design fisheries management areas.

Through an iterative approach lasting four years (2016 – 2019) which included: generating the spatial datasets; stakeholder consultation (at national and international level); and scenario testing using the spatial decision-support tool Zonation (Moilanen et al. 2014), priority areas closed to fishing (to prevent significant adverse impacts) and open to fishing (to provide for a viable fishery) were identified. This spatial management measure confined fishing to Bottom Trawl Management Areas; i.e., all areas outside of these areas were, in effect, protected in order to prevent significant adverse impacts (SPRFMO 2019). The measure also included a new Vulnerable Marine Ecosystems encounter protocol, whereby an area of 1 nautical mile around the whole length of a bottom trawl tow would be closed if indicator taxa were caught above prescribed weight or biodiversity threshold limits.

The key metrics of the likely effectiveness of the area-based management measure implemented in 2019 were the estimated proportion of suitable habitat for each Vulnerable Marine Ecosystem indicator taxon protected, and the value to the fishery retained. When these measures were compared to voluntary interim spatial management areas implemented in 2012 (which were designated using the historic footprint of the fishery from 2002-2006), to the Bottom Trawl Management Areas designated in 2019, the latter provided substantially greater protection for indicator taxa while also providing for greater retained value to the demersal fishery. Specifically, the 2019 Bottom Trawl Management Areas represents 50,272 km2, or 5.6% of seafloor between 200 and 3000m of the evaluated area (compared to the larger 107,534 km2 or 12.1% of seafloor of the interim measure). The estimated proportion of the distribution of suitable habitat for indicator taxa protected from any adverse effects of bottom trawling in the evaluated area was estimated to increase for all taxa from a mean of 79% (minimum 40% for stony coral *Goniocorella dumosa* and maximum 92% for *Pennatulacea* (sea pens)) in the interim spatial management areas to a mean of 89% (minimum 72% for stony coral *Enallopsammia rostrata* and maximum 97% for *Porifera Demospongiae* (sponges)) for the 2019 a Bottom Trawl Management Areas. Despite the much smaller size of the Bottom Trawl Management Areas the retained value to the fishery increased from 89% to 92% compared to the interim spatial management areas. Overall, the case study described above provides an example of 'win-win' area-based management as well as an example of biodiversity spatial planning where important ecosystems and associated biodiversity are an integral consideration in the spatial planning process in the marine environment.

Using decision support tools to design connected land, freshwater, and seascapes

PI-BISP is a key component of existing strategic frameworks for conservation with many tested and tried decision support tools and frameworks. The Conservation Evidence database (www.*conservationevidence*.com) summarises knowledge on the effectiveness of various conservation interventions, aiding decision-making based on empirical evidence. These tools collectively support informed decision-making, enabling more efficient and targeted conservation strategies to protect threatened species and ecosystems.

There a is a 30+ year literature on systematic conservation planning, that has driven much of the development of PI-BISP relevant planning processes and tools (Groves & Game 2016; Sinclair et al. 2018). Systematic conservation planning is a data driven planning approach to designing the spatial location of conservation actions (traditionally protected areas but now applied to a range of area-based conservation measures). Complementary to SCP are place based management planning processes such as the Open Standards for the Practice of Conservation (CMP 2020). The Open Standards offers a set of principles and practices compiled over decades by a large global community of practice to guide the collaborative strategic process of conservation project design, management, and monitoring. Healthy Country Planning (Carr et al. 2017) is an adaptation of the Open Standards for planning by IPs and LCs to incorporate traditional knowledge and community values.

Collectively, SCP and the Open Standards/ Healthy Country Planning approaches to locating and then managing areas for conservation offer a set of well tested and globally relevant approaches. These are explicitly designed for Protected and Conserved areas as well as broader conservation managed areas and thus, are essential to Targets 2 and 3 of the Kunming-Montreal GBF. However, the same tools have been used in other contexts such as planning for development (Kiesecker et al. 2010), multi-objective spatial planning (Adams et al. 2014), land use optimization (Adams et al. 2016), integrated watershed planning (Goyette et al.

2021), restoration planning (Smith et al. 2022), and marine spatial planning (Allnutt et al. 2012). When applying these tools to development and integrated landscapes, the mitigation hierarchy is a critical policy tool to manage development impacts, embedded in government, lender, and corporate policies, but it faces obstacles, in particular deciding when impacts should be avoided and how to locate and design offsets. TNC's Development by Design strategy (Kiesecker et al. 2010) seeks to balance conservation with economic development by integrating landscape-level spatial conservation planning into regional economic development to effectively apply the mitigation hierarchy and specifically the first critical step of avoidance (see Case Study 4 Mongolia).

Decision support tools that were original designed for SCP but have now been applied in a range of broader uses include Marxan, prioritizr, C-Plan, and Zonation (Ball et al. 2009). While accessibility of these tools remains a challenge, efforts are built to ensure conservation networks follow the underway to make them more inclusive and user-friendly. For example, the Marxan Planning Platform (to be launched at CoP 2024 https://marxanplanning.org/) is designed to engage non-expert stakeholders, leveraging advanced algorithms and data analytics, and fostering participatory spatial planning. These tools are built around the CARE principles (Comprehensive, Adequate, Representative and Efficient) which are essential aspects of protected and conserved area design (Margules & Pressey 2000; Moilanen et al. 2009; Pressey & Bottrill 2009; Adams et al. 2019b). These tools have been used in all four of the case study presented in this report.

Beyond spatial conservation prioritisation tools, there are other useful modelling approaches to inform PI-BISP that can ensure plans account for and support connected landscape design and management. Connectivity modelling tools like LinkageMapper and CircuitScape are used to identify barriers, assess other threats to habitat connectivity, and design corridors, ensuring that the protected and conserved areas will be well-connected (Keeley et al. 2019; Williams et al. 2020; Beger et al. 2022; Brennan et al. 2022; Palfrey et al. 2022). Others, like Marxan Connect, combine conservation planning tools and connectivity theory to help planners include various aspects of connectivity (such as larval, genetic, and landscape connectivity) in their conservation area network planning, guiding them through the process of identifying important connectivity aspects and highlighting the necessary data (Daigle et al. 2020).

The tools presented thus far are specific to the design of area-based measures. These tools help identify optimal locations for conservation actions and sustainable development, balancing ecological and economic objectives. However, to move plans to implementation appropriate planning processes and engagement are needed throughout (Adams et al. 2019b). Engagement tools and participatory approaches to planning that facilitate data input and dynamic decision making are therefore critical. They ensure that the planning process is inclusive, transparent, and reflective of diverse interests and knowledge systems (Campbell et al. 2023; Dawson et al. 2024). By leveraging these data and tools, biodiversity-inclusive spatial planning can achieve more effective and equitable conservation outcomes.

Case Study 4. Systematic conservation planning and landscape-level mitigation in Mongolia

This case study draws upon a decadal long investment in participatory planning that has influenced protected and conserved areas, development locations, and broader considerations of landscape connectivity (e.g. freshwater and terrestrial connections) thus emphasizing how decision support tools can be embedded into broader planning processes to guide PI-BISP to meet multiple goals.

Mongolia contains the largest steppe ecosystem in the world that still supports its historic wildlife assemblage, including long distance wildlife migrations, as well as traditional nomadic pastoralism. However, the biodiversity and pastoral livelihoods of this area are threatened by rapid growth of mining and related infrastructure. In 1998, in anticipation of growth in the mining sector, the Mongolian government established a goal of designating 30% of the country's land as national and local protected areas.

The Mongolian government has developed a national, landscape-level mitigation framework to designate new protected areas and guide biodiversity offset design based on systematic conservation planning. The participatory planning process was completed between 2009 – 2017, engaging a large community of stakeholders at national and local levels including government ministries and resource management agencies, academia, research institutions, and NGOs. The framework follows the Development by Design approach that integrates systematic conservation planning (Groves 2003) and landscape-level mitigation of economic development to effectively implement mitigation policy (Kiesecker et al. 2010). The data-driven conservation portfolio design was based on ecosystem representation, ecological integrity (spatial index of cumulative anthropogenic impacts), and development potential (mining exploration leases) and supported by the Marxan conservation planning software (Ball et al. 2009). This has led to protection of over 150,000 sq.km. in new national and local protected areas, protection of 82,000 sq.km. of riparian areas from industrial development to implement a water resource protection law, and development of an offset design mechanism based on the conservation plans (Heiner et al. 2019a; Surenkhorloo et al. 2021) (Figure 9). An assessment is underway to advance freshwater biodiversity protection based on the key ecological attributes of freshwater ecosystems, including habitat and species representation, longitudinal connectivity, and watershed-level ecological integrity (Higgins et al. 2021).

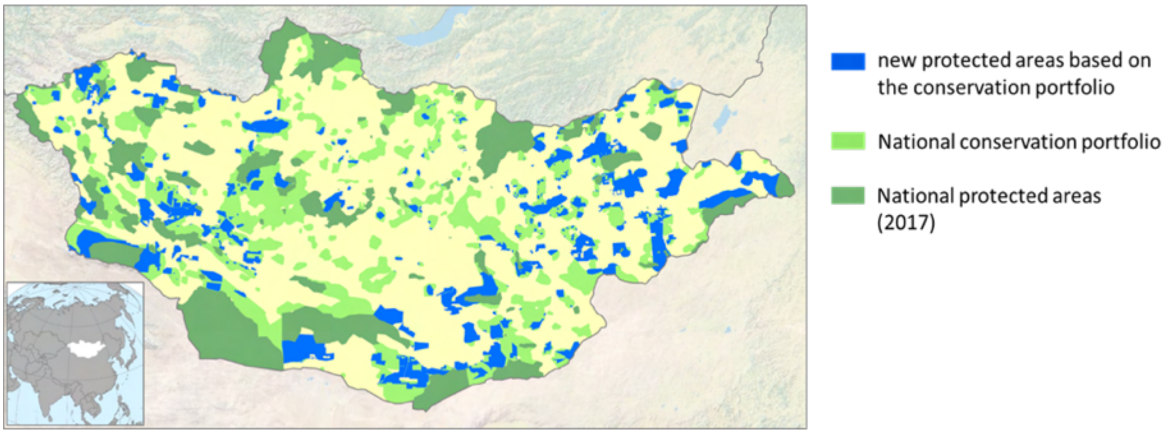

Figure 9: Mongolia's national conservation portfolio and new protected areas.

What is not PI-BISP?

PI-BISP as defined above is a strategic approach that considers all aspects of biodiversity with a particular focus on areas of high biodiversity importance and ecosystem with high ecological integrity and identifies a range of spatial actions to address biodiversity loss. Thus, spatial plans with narrow inclusion of biodiversity elements (e.g. threatened species but not ecosystems), or few selected taxa, limited consideration of possible actions (e.g. focused solely on a single conservation intervention or development goals), or use of decision support tools without effective stakeholder participation, all which do not consider the complexity of biodiversity and actions needed to guide on ground PI-BISP spatial actions are not considered to be PI-BISP.

Key Biodiversity Areas (KBAs) are not, by itself, a PI- BISP product, but are specific sites identified globally based on scientific criteria as critical for biodiversity persistence. While KBAs are important for showing places important for the persistence of biodiversity (and therefore can be important to include as input data in a PI-BISP process (see Case Study 1 Ecuador), PI- BISP encompass broader strategic goals and objectives, involving IPs and LCs and other interested stakeholders, addressing multiple human uses and threats, and implements adaptive management strategies. Thus, while KBAs serve to inform conservation efforts, particularly when incorporated into systematic conservation planning efforts (Smith et al. 2019), integrated spatial plans are essential for mainstreaming biodiversity conservation into broader societal and developmental contexts.

Conventional spatial planning often falls short by limiting its focus mainly on protected areas (PAs) and Other Effective area-based Conservation Measures (OECMs), and not considering a broader range of potential actions and strategies to avoid harmful biodiversity loss. PI-BISP should include a wide range of interventions, including traditional protection actions but also those which integrate and mainstream biodiversity considerations into land, freshwater and sea uses and activities, especially strategic restoration areas (see Case Studies 2,3,4 for examples across these three realms). We note that many existing plans or planning approaches tailored to Target 2 and 3, could be readily expanded to meet our PI-BISP definition by considering biodiversity focused actions across other management strategies (e.g., Grantham et al. 2013; Jumin et al. 2018). Case Study 1 Ecuador is a useful example of this.

Typical mitigation planning aimed at reducing impacts of development projects is generally economically focused, as it often focuses narrowly on avoiding areas of high biodiversity and/or ecosystem services and is done on a project-by-project basis, without considering cumulative impacts of multiple projects. This gap is particularly evident in urban and peri-urban fringe planning, where biodiversity is often undervalued or overlooked, and in national energy, mineral, and infrastructure development. Development planning should not be reduced to green or red lighting land use zones based on minimal data or assumptions about biodiversity absence. Instead, it should incorporate clear goals and objectives, and comprehensive data and a nuanced understanding of biodiversity importance to make informed, strategic decisions that operate at the scale of landscapes, riverscapes, and seascapes to balance trade-offs between economic development and conservation goals. The mitigation hierarchy is a critical policy tool to manage development impacts, embedded in government, lender, and corporate policies, but it faces obstacles, in particular deciding when impacts should be avoided and how to locate and design offsets (Kujala et al. 2022).

To provide spatial planning support and strategic guidance across multiple actions and land and sea uses, PI-BISP requires more than basic analyses or isolated expert opinions. Traditional methods like biodiversity hotspot analyses and simple overlays of spatial data, while potentially useful as inputs, do not constitute PI-BISP. Similarly, poorly documented and executed expert prioritizations often lack the robustness needed for effective biodiversity conservation.

Summary of best practice in spatial planning principles for PI-BISP

To ensure the success of PI-BISP, it is essential to adhere to best-practice principles that emphasize engagement, equity, and the inclusion of IPs and LCs. PI-BISP aims to optimize the allocation of conservation efforts and resources across space and time, identifying key locations for biodiversity protection and recommending specific spatial actions. Effective PI-BISP involves utilizing decision-support tools and processes that integrate social, ecological, and economic data, enabling governments and others to make informed and strategic decisions. Equitable and inclusive decision-making, and the integration of robust data are critical components of PI-BISP. Involving IPs and LCs and other key stakeholders throughout the planning process ensures that conservation measures are equitable, culturally appropriate, and supported by those most affected. Data on biodiversity (e.g., ecosystems, threatened species, ecological integrity, and human impacts) must be used to identify areas of high biodiversity importance and to guide conservation actions. Tools like spatial decision-support systems help planners balance ecological needs with socio-economic considerations, ensuring that protected areas and other conservation measures are optimally placed and managed. Goal setting and continuous evaluation are also crucial to PI-BISP's effectiveness. Clear goals provide a long-term vision for conservation, while measurable objectives guide specific actions. Monitoring and evaluating the outcomes of spatial plans allow for adaptive management, ensuring that conservation strategies remain relevant and effective. PI-BISP not only aims to protect biodiversity but also to balance conservation with sustainable use, making it a valuable approach for mitigating biodiversity loss in the face of ongoing environmental challenges.

We emphasize that our definition of PI-BISP is about moving beyond plans to implementation to ensure that plans are designed to guide land, freshwater, and sea uses in a way that achieves the ultimate goals of biodiversity gain for nature and people. This requires considering mainstreaming processes early in the planning process (Target 14) rather than at the end. Target 14 and Target 1 should be considered actions that work in concert to create the needed enabling conditions for successful biodiversity inclusive planning and implementation. Thus, we return here to Figure 1 where these two targets are portrayed as book ends of the process, exerting enabling pressure to guide actions (protect, restore, manage) to achieve Goal A of protecting and restoring all levels of biodiversity (ecosystems, species, genetic resources).

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