

1 **Achieving Target 1 through effective spatial planning underpins the**
2 **long-term success of the Convention on Biological Diversity’s Global**
3 **Biodiversity Framework**

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43 **Abstract**

44 The first target of the Kunming–Montreal Global Biodiversity Framework (KM-GBF)
45 mandates signatory nations of the Convention on Biological Diversity (CBD) to address
46 biodiversity loss across all regions within their national jurisdictions by 2030 by
47 implementing Participatory, Integrated, and Biodiversity-Inclusive Spatial Planning (BISP).
48 Delivering Target 1 through coordinated, inclusive spatial planning is foundational to the
49 majority of KM–GBF targets, directing restoration (Target 2), optimising protected area
50 networks (Target 3), and enabling actions to prevent extinctions (Target 4). BISP will also
51 improve decisions to address biodiversity threats (Targets 6–8) and guide sustainable use
52 across production systems and urban landscapes (Targets 5, 9–12). By being participatory
53 and inclusive, such spatial planning also advances equity objectives such as fair benefit-
54 sharing and the recognition of Indigenous Peoples and local communities, and influencing all
55 levels of decision-making (Target 14, 21-23). While some case studies successfully capture
56 all components of Target 1, the central challenge is to move beyond siloed approaches—
57 where protected areas, restoration, and sustainable use are planned separately—and
58 integrate these into a unified spatial planning framework that improves coherence,
59 maximises benefits, and reduces trade-offs. We argue that the ambitions of the KM-GBF will
60 only be achieved if Parties to the CBD prioritise Target 1 as an enabling, keystone target. The
61 future challenge is not conceptual innovation but integration—aligning existing planning
62 elements, tools, and approaches into coherent spatial strategies capable of systemically
63 halting and reversing biodiversity loss.

64

65 **Introduction**

66 The Convention on Biological Diversity’s Kunming–Montreal Global Biodiversity Framework
67 (KM-GBF) provides a global strategy to halt and reverse biodiversity loss and promote
68 sustainable use and development ¹. Delivering on its vision requires proactive action to
69 secure areas of high biodiversity value, including those supporting rich, unique, or highly
70 threatened species and ecosystems, and areas with high ecological integrity ², as well as
71 restorative actions in modified or degraded ecosystems to enable species and ecosystem
72 recovery ^{3,4}. The KM-GBF therefore covers conservation efforts across intact ecosystems,
73 working landscapes and seascapes, and urban areas across different realms (Fig. 1). The
74 framework emphasises “whole-of-society” engagement, calling for coordinated action by
75 governments, businesses, Indigenous peoples, local communities, and civil society ⁵. It
76 establishes 23 targets for 2030, which in turn support four overarching goals and a 2050
77 vision, and highlights the need for effective monitoring, reporting, and accountability to
78 ensure transparency, equity, and measurable progress (Table 1) (CBD, 2022).

79 While the KM-GBF retains or expands many elements of the previous Aichi targets ^{2,6}, it also
80 introduces a critical new target (Target 1) that is built on Aichi Target 5, which focused on
81 biodiversity loss and ecosystem degradation. Target 1 now emphasises the critical role of
82 spatial planning for addressing the drivers of biodiversity and ecosystem decline. Target 1
83 specifies the need to “...ensure that all areas are under participatory, integrated and
84 biodiversity inclusive spatial planning and/or effective management processes addressing
85 land- and sea-use change, to bring the loss of areas of high biodiversity importance,
86 including ecosystems of high ecological integrity, close to zero by 2030, while respecting the
87 rights of Indigenous Peoples and local communities” (CBD 2022). While Target 1 also
88 encompasses effective management processes, here we focus on BISP only, specifically on
89 identifying the spatial actions necessary to address the drivers of biodiversity loss ⁷.

90 Crucially, to be integrated and participatory, BISP must also operate by managing coupled
91 socio-ecological systems, ensuring that these spatial decisions not only protect nature but
92 also secure the long-term provision of Nature’s Contributions to People (NCPs) which local
93 communities depend ^{8,9}.

94 Target 1 was introduced in recognition of the fact that biodiversity, and the benefits flowing
95 from it to people, have not featured in the vast majority of land, freshwater, or sea use
96 planning efforts to date ¹⁰. The target also acknowledges that changes in land, freshwater,
97 and sea use represent the most significant direct drivers of biodiversity loss across the
98 world. Reversing this loss can therefore, at least partly, be addressed through
99 comprehensive spatial planning, which will become increasingly critical as demands for
100 food, water, energy, infrastructure, and other competing human uses grow over the next
101 century ^{11,12}.

102 Here we argue that the ambitious goals set out in the KM-GBF for achieving large-scale
103 restoration and protection priorities, while ensuring sustainable use of nature, will only be
104 achieved if Parties prioritise Target 1 and recognise it as an enabling keystone target. Target
105 1's core principle is that biodiversity conservation needs more than just protected and
106 conserved areas; it demands coordinated, inclusive, and plural planning across all realms
107 and economic sectors supported by negotiation, conflict resolution, and trade-off
108 assessments ¹³. Because conservation must occur alongside many other urgent human
109 needs, including those of the most vulnerable communities, spatial planning is essential to
110 guide equitable, efficient, and transparent decision-making ¹⁴. We therefore (i) outline why
111 BISP is a critical process for achieving positive conservation outcomes, (ii) showcase how it
112 relates to other targets with a clear spatial planning or implementation element, and (iii)
113 comment on their interrelationships (Figure 2). By highlighting target-specific examples of
114 BISP, we demonstrate how these can be integrated into a more cohesive spatial planning
115 framework. We outline actionable steps for nations to operationalise Target 1, creating the
116 enabling environment necessary to deliver on the KM-GBF's ultimate goals.

117 **The importance of Participatory, Integrated, and Biodiversity-Inclusive Spatial Planning** 118 **(BISP)**

119 BISP builds on longstanding traditions of land, freshwater, and sea use-planning, in which
120 areas are allocated to particular uses or management arrangements, but advances these
121 approaches by ensuring that biodiversity loss is being addressed in an integrated manner ¹⁵⁻
122 ¹⁷. Importantly, it provides a systematic framework for identifying priority areas for
123 conservation, restoration, and sustainable use and management, while guiding

124 development in ways that balance trade-offs and avoid significant adverse impacts on
125 biodiversity ⁷. A hallmark of BISP will, therefore, be plans that clearly articulate land,
126 freshwater, and sea-uses and management strategies linked to specific biodiversity-positive
127 actions, and that are embedded within enabling policies to coordinate and implement these
128 actions (e.g. Figs 3 and 4).

129 What does BISP look like in practice? South Africa is a global leader in BISP, with over 25
130 years of technical systematic conservation planning (SCP) processes and having produced
131 comprehensive spatial conservation planning outputs, maps and guidelines covering the
132 entire mainland territory (Figure 3). Importantly, South Africa has well-established processes
133 to incorporate SCP outputs into municipal and provincial cross-sectoral spatial plans that
134 have legal weight and mechanisms to ensure their implementation and broad societal
135 participation. These plans guide all land use decision making in the country ¹⁸. In the marine
136 realm, a gap remains between the systematic conservation plans and cross-sectoral plans as
137 marine spatial planning (MSP) frameworks are still emerging, though the required legislation
138 is in place ¹⁹.

139 The following sections demonstrate how Target 1 serves as a foundation for delivering the
140 KM-GBF, underpinning actions to address direct threats to biodiversity (Targets 1–7),
141 enabling sustainable use and equitable benefit-sharing (Targets 9–13), and contributing to
142 the enabling targets (14, 21–23) (Table 1).

143 **BISP and Target 2: Ecosystem restoration**

144 Global ecosystem degradation threatens biodiversity and the well-being of over 3.2 billion
145 people by undermining food and water security ²⁰⁻²². To address this, CBD Target 2 aims to
146 ensure that by 2030 at least 30% of degraded terrestrial, inland water, and coastal and
147 marine ecosystems are effectively restored, enhancing biodiversity, ecosystem functions,
148 ecological integrity, and connectivity (Table 1) (CBD 2022).

149 Restoration decisions should be prioritised within the broader context of protection and
150 sustainable development, rather than in isolation. While conventional restoration planning
151 identifies ecologically important areas, BISP can extend these approaches by linking

152 restoration priorities to strategic spatial planning, ensuring that actions support long-term
153 biodiversity and other outcomes. This integrated approach helps avoid prioritising
154 restoration when, for example, protection is the ideal outcome ²³, or perverse outcomes,
155 such as the afforestation of biodiversity-rich grasslands in Africa ²⁴. For example, the
156 European Union’s Nature Restoration Law ²⁵ mandates restoration across 20% of land and
157 marine areas by 2030, inclusive of restoring at least 25,000 km of rivers to a free-flowing
158 state. In the longer term, restoration measures must be in place for all ecosystems in need
159 of restoration by 2050, alongside specific tiered targets for restoring degraded habitats.
160 Studies show that integrating restoration planning with extractive and productive sectors
161 across landscapes minimizes conflicts, maximizes contributions to food, timber,
162 conservation, and climate mitigation, and enhances socio-economic feasibility ²⁶. BISP
163 strengthens such approaches by aligning multiple objectives and demonstrating why Target
164 1 is foundational to achieving Target 2.

165 **BISP and Target 3: Protected and Conserved Areas**

166 Target 3 of the KM-GBF calls for conserving at least 30% of terrestrial, inland water, and
167 marine areas in Protected and Conserved Areas (PCA) by 2030, especially those of particular
168 importance for biodiversity (CBD 2022). PCAs are ideally planned as a network, but planning
169 has often struggled to account for the broader management of landscapes and seascapes
170 (i.e. the unprotected matrix surrounding and adjacent to protected areas). Furthermore,
171 terrestrial PCAs are most often designated based on land-based priorities, resulting in
172 freshwater habitats and their biodiversity being frequently overlooked ²⁷⁻²⁹

173 PCAs alone are also not going to stop biodiversity loss ^{30,31}. BISP provides a decision-guiding,
174 spatially explicit framework that can identify where and how to designate protected areas,
175 particularly to bridge key ecological representation gaps (e.g. species and ecosystem not
176 adequately covered in existing PCAs), while simultaneously prioritizing the restoration of
177 degraded ecosystems, and sustainable use and development in non-protected areas ²³. By
178 doing this, BISP ensures that biodiversity loss is addressed even as economic development
179 and other human activities are being planned. This approach generates connected and
180 representative systems of PCAs, enabling planners to strategically balance ecological, social,
181 and economic objectives at landscape, freshwater and seascape scales ³²⁻³⁵. In many cases

182 most of the land and water covered by these large-scale plans will be managed by people
183 with diverse, and potentially conflicting priorities, thus negotiations and often trade-offs will
184 be needed to reach a final mosaic of PCAs and uses that provide optimal achievable
185 biodiversity conservation and other objectives.

186 Integrating biodiversity considerations into land, freshwater, and seascape spatial planning
187 can help ensure ecological connectivity, reduce fragmentation, bridge representation gaps,
188 and maximise the effectiveness of PCAs both for biodiversity conservation and for other
189 objectives (e.g. ecosystem services)³⁶. For example, Leal et al. (2020) demonstrated a 600%
190 increased benefit to freshwater species at little or no additional opportunity cost to
191 terrestrial biodiversity from integrating freshwater and terrestrial planning across
192 ecosystems and realms in the Amazon Basin. Integrated biodiversity spatial planning in the
193 marine realm resulted in a highly efficient protected areas expansion footprint in South
194 Africa, thus minimizing the geographic overlap of protection with the fisheries and energy
195 sectors³⁷.

196 Evidence has shown that terrestrial PCAs can generate spillover benefits for adjacent
197 landscapes, ranging from enhanced vegetation cover and elevated biodiversity³⁸⁻⁴⁰ to
198 broader social-ecological contributions such as pollination, pest control, and water
199 regulation⁴¹, underscoring the value of integrated planning that accounts for these benefits
200 beyond PCAs^{42,43}. Other evidence has shown that protected areas can cause leakage where
201 they displace threats such as habitat loss from activities like agriculture and forestry to other
202 areas^{44,45}. It is therefore important that BISP addresses potential leakage, with several
203 studies providing examples of how this can be accomplished^{46,47}. Beyond traditional
204 protected areas, the expansion of other effective area-based conservation measures
205 (OECMs) to achieve KM-GBF targets would greatly benefit from BISP. Without large-scale,
206 integrated planning, OECMs can fail to provide the conservation benefits that they
207 otherwise could⁴⁸.

208 Achieving Target 3 requires more than establishing more PCAs—it demands integrating
209 ecological priorities with socio-political realities. Fragmented land tenure, overlapping
210 jurisdictional mandates, and Indigenous Peoples' and local communities (IP&LC) rights often
211 determine whether new or expanded PCAs are politically feasible, socially legitimate, or

212 enforceable ^{49,50}. For example, recent efforts in Chilean marine conservation showcase that
213 actively integrating intercultural governance mechanisms—such as coastal and marine
214 spaces of Indigenous Peoples— is essential for enhancing Indigenous stewardship, and
215 ensuring equitable, durable conservation outcomes ^{51,52}. BISP addresses these governance
216 challenges by providing a spatially explicit, participatory framework that simultaneously
217 identifies priority areas for protection, restoration, and sustainable use and management;
218 embeds IP&LC knowledge and co-governance arrangements; aligns planning with national
219 land-tenure systems; and harmonizes mandates across relevant sectors ⁵³. By integrating
220 multiple biodiversity values and social legitimacy into one framework, BISP ensures that
221 PCAs contribute effectively to durable landscape- and seascape-scale biodiversity
222 conservation, climate mitigation, and human well-being ⁵⁴.

223 **BISP and Target 4: Halt extinction and recover threatened species**

224 Target 4 emphasizes species action plans to reduce extinction risk and improve conservation
225 status. BISP enhances these plans by providing a spatially explicit, integrative
226 framework that identifies critical habitats, key populations, and ecological networks while
227 linking them to broader conservation, restoration, and sustainable use and management
228 priorities. By incorporating species distributions, connectivity, and habitat requirements
229 with landscape-, riverscape- and seascape-level planning, BISP can ensure that management
230 actions focus on the species most at risk and are implemented where they will be most
231 effective ⁵⁵⁻⁵⁷. Importantly, it also embeds socio-political considerations, including IP&LC
232 rights, land tenure, and multi-sectoral coordination, ensuring actions are feasible,
233 enforceable, and socially legitimate ⁵³. By integrating ecological, economic, and governance
234 dimensions, BISP links species-specific interventions to broader spatial strategies under
235 Targets 1–3, maximizing ecological effectiveness, resilience, and human–wildlife
236 coexistence. This can be for groups of species, or for a single species of conservation
237 concern ^{58,59}. For example, spatial planning has identified critical corridors between
238 protected areas in India and Nepal, reducing the risks of inbreeding and human–wildlife
239 conflict while ensuring that conservation actions address both ecological and social
240 dimensions ⁶⁰.

241 **BISP and addressing key drivers of biodiversity loss, including invasive alien species,**
242 **pollution, and climate change (Targets 6-8)**

243 Across Targets 6–8, BISP can function as a unifying spatial framework for managing multiple,
244 interacting key drivers of biodiversity loss. Rather than addressing invasive species,
245 pollution, and climate change in isolation, BISP can enable planners to spatially align threat
246 reduction with biodiversity priorities and socio-economic realities. For example, invasive
247 species control can be targeted where invasion pathways intersect with areas of high
248 ecological value ⁶¹; pollution reduction can be prioritised in catchments where nutrient
249 loads overlap with coastal biodiversity hotspots ⁶²; and nature-based climate mitigation and
250 adaptation can be directed to locations where carbon storage, climate vulnerability, and
251 ecological importance coincide ⁶³. By integrating these threats within a single decision-
252 support process, BISP reduces duplication, identifies synergies, anticipates trade-offs, and
253 ensures that actions under Targets 6–8 support the achievement of other targets. In doing
254 so, it shifts implementation from fragmented, threat-specific responses toward coordinated,
255 landscape- and seascape-scale strategies that maximise biodiversity, climate, and societal
256 benefits simultaneously.

257 Target 6 calls for the elimination or reduction of the impacts of invasive alien
258 species. BISP can help address this by identifying priority areas where management,
259 prevention, and eradication efforts will deliver the greatest ecological returns. BISP can help
260 planners map invasion pathways, overlay them with maps of biodiversity importance, and
261 target management toward areas where invasive species threaten biodiversity. For
262 example, spatial planning in northern Australia has identified key areas where coordinated
263 feral cat control is essential for the survival of small mammals of conservation concern ⁶⁴. In
264 the Caribbean, spatially explicit strategies for invasive lionfish (*Pterois volitans*)
265 management have been developed to protect reef biodiversity and maintain fisheries, while
266 in the Great Lakes of North America, planning tools guide surveillance and control of
267 invasive carp before they spread into uninvaded systems ⁶⁵.

268 Target 7 calls for reducing pollution from excess nutrients, plastics, and other hazardous
269 chemicals to levels that are not harmful to biodiversity and ecosystem functions. BISP can
270 support this goal by identifying where pollution sources and sinks co-occur with areas of

271 high biodiversity value, enabling targeted interventions that maximise biodiversity benefits.
272 For example, spatial overlays of nutrient runoff with freshwater biodiversity hotspots can
273 guide watershed management strategies, such as riparian buffer zones or sustainable
274 farming practices, to reduce eutrophication and fish kills. The EU Water Directive aims to
275 reduce pollution by zoning areas where, for instance, fertilizer application is strictly
276 controlled ⁶⁶.

277 Target 8 emphasises the role of ecosystems in climate change mitigation and
278 adaptation. BISP can identify priority areas for nature-based solutions that deliver people,
279 climate and biodiversity outcomes ⁶⁷. For instance, protecting and restoring mangroves,
280 peatlands, and seagrass beds can sequester large amounts of carbon (“blue carbon”), buffer
281 coastal communities against storms, and support fisheries ⁶⁸. Terrestrial planning can
282 similarly prioritise reforestation or avoided deforestation in landscapes that maximise
283 carbon storage while enhancing habitat connectivity and ecosystem resilience ⁶⁹. Therefore
284 Target 8 influences the placement of a range of actions including restoration, conservation,
285 and managing species to avoid loss.

286 **BISP and integrating biodiversity with sustainable use and development (Targets 5, 9-12)**

287 By embedding biodiversity considerations into the decision-making frameworks of
288 agriculture, forestry, fisheries, water, energy, infrastructure, and urban development, BISP
289 ensures that conservation is not confined to protected areas but becomes a cross-sectoral
290 responsibility across entire landscapes, riverscapes, and seascapes (Targets 5, 9–12; Table
291 1). Target 10 is a particularly important link with Target 1 as it aims to ensure that areas
292 under agriculture, aquaculture, fisheries and forestry are managed sustainably, through the
293 sustainable use of biodiversity. These targets (5, 9-12) are a critical link with Target 1
294 because many ecosystems and species essential to achieving global biodiversity goals occur
295 outside protected areas, but in working landscapes/seascapes, managed waterscapes, and
296 rapidly urbanising regions ^{70,71}. A practical example of this integrated approach is the
297 Territorial Systems of Ecological Stability (TSES) in the Czech Republic and Slovakia ⁷². TSES
298 provides legally binding, nationwide ecological zoning, with 100% of each country assessed
299 and ecologically significant areas designated as biocentres, biocorridors, and interactive
300 elements. These zones are embedded within statutory planning systems and trigger

301 environmental impact assessments where relevant. As a result, biodiversity considerations
302 directly influence territorial planning, agricultural land consolidation, watershed
303 management, flood protection, and infrastructure development—demonstrating how BISP-
304 type frameworks can operationalise cross-sectoral biodiversity integration at national scale
305 ⁷³.

306 Targets 5 and 9 are inherently linked as Target 5 seeks to ensure that wild species are used
307 sustainably and not overexploited, while Target 9 focuses on securing benefits to people
308 from that use. BISP enables these objectives to be achieved simultaneously by integrating
309 species population dynamics, habitat requirements, and ecological limits with socio-
310 economic and cultural priorities within spatial planning processes. Through spatially explicit
311 harvest zones, seasonal closures, forestry set-asides, adaptive quotas, and clearly defined
312 use areas, it ensures that extraction occurs only where populations and ecosystems can
313 sustain it, while safeguarding areas critical for biodiversity persistence ⁷⁴. Examples from the
314 Great Barrier Reef Marine Park ⁷⁵, locally managed marine areas in the Western Indian
315 Ocean ⁷⁶, and community-managed hunting zones in Central Africa ⁷⁷ demonstrate that
316 spatial regulation can reduce overexploitation while sustaining livelihoods. By embedding
317 customary systems such as Māori rohe within broader spatial frameworks, BISP further
318 strengthens the alignment between species conservation and equitable benefit-sharing ⁷⁸.

319 Examples of cross-sectoral integration already exist. Biodiversity protection has been
320 aligned with food production through spatial prioritisation approaches ^{73,79}, forestry
321 concessions have incorporated harvest zoning to retain habitat structure and connectivity
322 ⁸⁰, and coastal planning has balanced biodiversity, fisheries productivity, and ecosystem
323 services such as climate mitigation and disaster risk reduction—illustrating synergies across
324 Targets 8 and 11 ^{68,81}. Water security provides another compelling case: source catchments
325 supplying drinking water to more than 1.7 billion people across 4,000 cities overlap by 85%
326 with freshwater ecoregions of high biodiversity importance ⁸², underscoring the need for
327 integrated watershed planning. Urban initiatives such as Melbourne’s Urban Forest Strategy
328 and Singapore’s Park Connector Network demonstrate how spatial planning can deliver
329 multifunctional green infrastructure that reduces heat stress, improves air quality, and
330 enhances urban biodiversity (Davern et al. 2017; Tan et al. 2013).

331 Despite these examples, structural barriers often prevent biodiversity integration into
332 production sectors. Agricultural subsidies may incentivise expansion or intensification that
333 undermines biodiversity goals; water allocation policies frequently prioritise extraction over
334 ecological flows; infrastructure corridors are often planned without ecological criteria; and
335 weak coordination among ministries limits cross-sectoral coherence. BISP is necessary
336 precisely because it addresses these systemic constraints. By embedding biodiversity
337 objectives, directly into spatial planning across sectors, it moves beyond conventional,
338 siloed approaches and provides a governance framework capable of aligning production,
339 sustainable development, and conservation at landscape and seascape scales ^{83,84}.
340 Overcoming these barriers requires more than technical precision; it demands
341 institutionalizing inclusive and accountable environmental governance systems capable of
342 managing complex inter-scalar and socio-political dynamics. BISP operationalizes this shift
343 by fostering the collaborative networks and revitalized local institutions necessary for
344 legitimate, durable stewardship ^{53,54}.

345 **BISP and Mainstreaming biodiversity in all decision-making and ensuring planning**
346 **processes are appropriate (Targets 14, 21-23)**

347 BISP also can help enable the mainstreaming of biodiversity into policy and governance
348 frameworks, consistent with Target 14. Mainstreaming refers to embedding biodiversity
349 into all relevant policies, institutions, and practices, ranging from environmental impact
350 assessments and development planning to poverty eradication strategies, corporate and
351 financial responsibility, and even the general public's way of thinking and being. In practice,
352 BISP can provide spatially explicit information to guide environmental impact assessments
353 ⁸⁴, inform national (and corporate) accounting, and shape strategic environmental
354 assessments so that biodiversity is consistently considered in economic and development
355 decisions ⁸⁵. South Africa's efforts to incorporate the outputs of SCP into integrated land use
356 planning tools (mentioned earlier) are an example of the importance of taking steps to
357 mainstream BISP (Target 14) (Figure 2). Another example are ELSA (Essential Life Support
358 Areas) products, which provide spatially explicit outputs that governments are already to
359 align national development strategies, climate commitments, and biodiversity goals,
360 ensuring biodiversity is accounted for in cross-sectoral policy arenas ⁸⁶ (Figure 2). BISP is

361 fundamental to effective environmental impact mitigation, for mining and energy
362 development, and implementation of the mitigation hierarchy, particularly decisions about
363 avoidance and offsets (Kiesecker, Copeland et al., 2010). In Mongolia, amid a mining boom,
364 BISP served as the basis for national mitigation planning, directing policy commitments to
365 protect 30% of all natural habitats and to implement water resource protection laws^{87,88}.

366 Integrating biodiversity into production sectors and broader spatial planning (Targets 9–12)
367 requires explicit attention to rights, governance, and equitable participation. Many
368 productive landscapes—agriculture, forestry, fisheries, water management, and urban
369 areas—overlap with territories governed or customarily used by IP&LCs, where land tenure,
370 resource access, and traditional institutions are central^{89,90}. BISP therefore requires that
371 spatial planning processes respect and uphold IP&LC rights, knowledge systems, and
372 governance structures. BISP operationalises these commitments by embedding
373 participatory and co-governance approaches, aligning spatial plans with customary tenure
374 and territorial boundaries, incorporating Free, Prior and Informed Consent at all stages, and
375 co-producing biodiversity priorities with IP&LC institutions. Critically, such plans need to
376 involve a full range of stakeholders from the beginning, rather than being drawn up in
377 isolation and presented for comment on later in the process⁹¹. Evidence shows that IP&LC-
378 managed lands often deliver conservation outcomes equal to or exceeding those of state-
379 managed protected areas^{49,92,93}. These principles are reinforced by other GBF targets:
380 Target 22 promotes broad, inclusive participation; Target 23 emphasises gender equity; and
381 Target 21 ensures that outcomes and benefits are widely shared. Together, they highlight
382 that effective spatial planning under BISP must be participatory, equitable, and transparent,
383 producing biodiversity outcomes that are both socially legitimate and ecologically durable.

384 **Conclusion**

385 The examples presented throughout this paper demonstrate that the technical tools, policy
386 instruments, governance models, and science required to deliver Target 1 already exist.
387 What is missing is their systematic integration and consistent application across sectors and
388 scales. To realise the enabling potential of Target 1, Parties should move beyond isolated
389 planning initiatives and consolidate existing approaches within a coherent BISP framework
390 that aligns national and international commitments with local social-ecological realities.

391 These steps do not require new mechanisms; rather, they require aligning and leveraging
392 the many examples of good practice already underway. By conceptualising the spatial and
393 functional relationships among all KM-GBF targets, BISP provides the integrative mechanism
394 needed to connect these essential efforts into a coordinated whole. As shown across
395 Targets 2–8, spatial planning can simultaneously guide protection, restoration, species
396 recovery, invasive species management, pollution reduction, and climate adaptation when
397 implemented within a unified framework.

398 Target 1 therefore functions not as a standalone objective, but as the connective tissue of
399 the Global Biodiversity Framework—ensuring that actions across terrestrial, inland water,
400 and marine realms are mutually reinforcing rather than fragmented. This includes the
401 decision-support tools needed to operationalise BISP in practice. Such tools already exist
402 across a spectrum of complexity, from qualitative risk frameworks to spatially explicit
403 prioritisation models and probabilistic scenario-testing approaches, but their uptake
404 remains constrained by barriers of socialisation, institutional trust, and capacity rather than
405 availability⁹⁴. The pathway forward is not the creation of new commitments, but the
406 deliberate assembly, scaling, and institutionalisation of the tools already at hand to achieve
407 a transformative shift in how societies organise space to sustain biodiversity and human
408 well-being.

409 **Table 1. Kunming–Montreal Global Biodiversity Framework (GBF) 23 Targets (to 2030)**

GBF Subheading	Target	Summary
Reducing Threats to Biodiversity	1	All areas under participatory, integrated biodiversity-inclusive spatial planning.
	2	Restore at least 30% of degraded terrestrial, inland water, coastal and marine ecosystems.
	3	Conserve at least 30% of land, inland waters, coastal and marine areas (30x30).
	4	Halt human-induced extinctions and recover threatened species.
	5	Ensure sustainable, safe and legal harvesting, trade and use of wild species.
	6	Reduce impacts of invasive alien species by at least 50%.
	7	Reduce pollution to levels not harmful to biodiversity.
	8	Minimise impacts of climate change and ocean acidification on biodiversity.
Meeting People’s Needs Through Sustainable Use and Benefit-sharing	9	Ensure sustainable use and management of wild species benefits people.
	10	Sustainable management of agriculture, aquaculture, fisheries and forestry.
	11	Restore, maintain and enhance nature’s contributions to people.
	12	Increase area, access and benefits of green and blue spaces in urban areas.
	13	Ensure fair and equitable sharing of benefits from genetic resources (including DSI).
Tools and Solutions for Implementation and Mainstreaming	14	Integrate biodiversity values into policies, planning and development.
	15	Businesses and finance assess and disclose biodiversity risks and impacts.
	16	Promote sustainable consumption and reduce global footprint.

17	Strengthen biosafety and biotechnology risk management.
18	Reform harmful subsidies; scale up positive biodiversity incentives.
19	Mobilise at least USD 200 billion per year for biodiversity.
20	Strengthen capacity-building, technology transfer and scientific cooperation.
21	Ensure knowledge (including Indigenous and traditional knowledge) is accessible.
22	Ensure full, equitable, inclusive and gender-responsive participation.
23	Ensure gender equality in implementation of the Framework.

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668 **Acknowledgments**

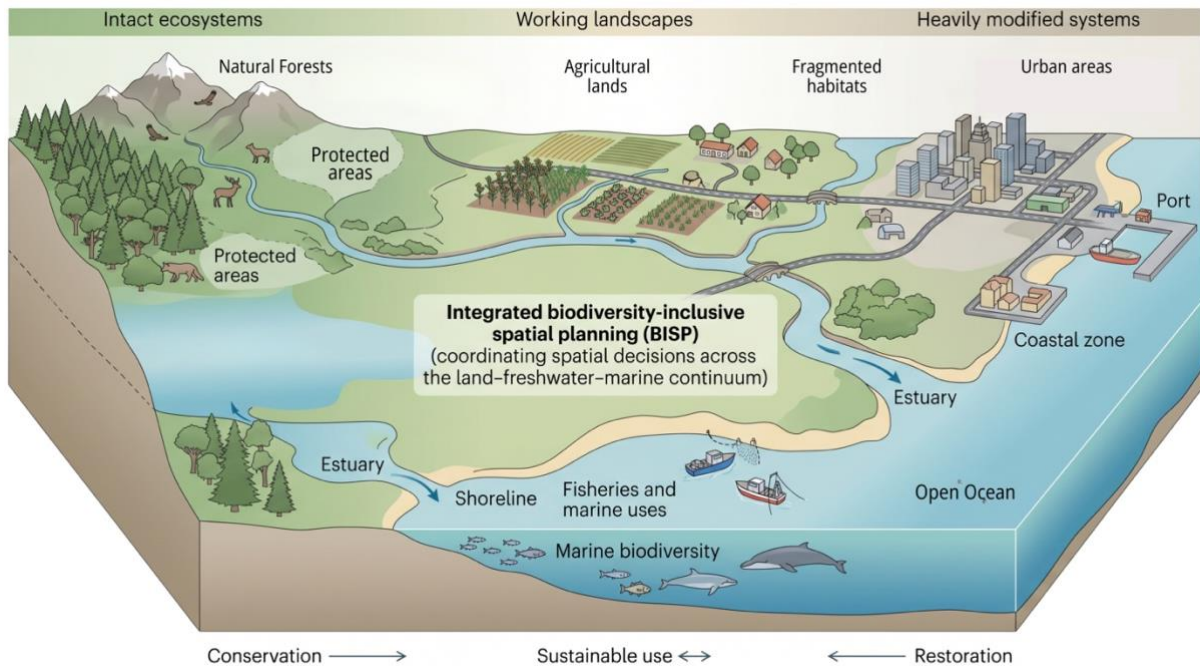
669 Other members of the IUCN WCPA Taskforce on Spatial Planning for earlier contributions to
670 ideas presented here including Aaron Laur, Brandie Fariss, Stephan Halloy, and Stephen
671 Woodley.

672 **Author contributions**

673 H.G. drafted the manuscript, and all co-authors provided critical feedback and approved the
674 final version.

675 **Competing Interests**

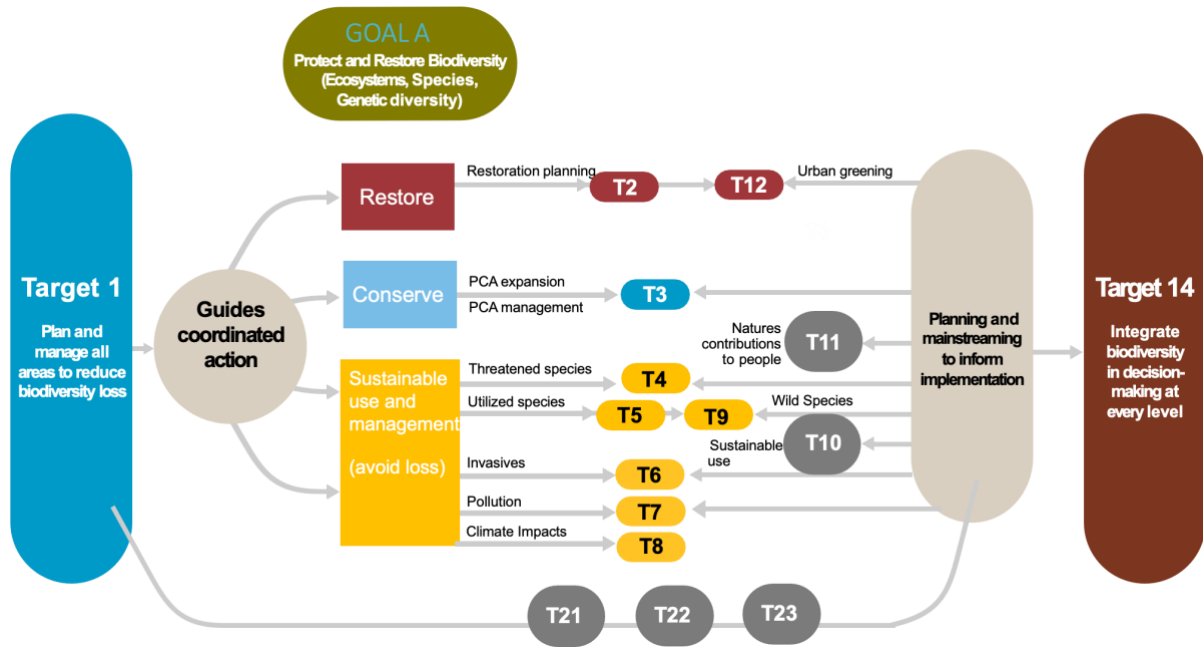
676 The authors declare no competing interests.



678

679 Figure 1. Integrated biodiversity-inclusive spatial planning (Target 1) across the land–
 680 freshwater–marine continuum. Conceptual representation of Target 1 of the Kunming–
 681 Montreal Global Biodiversity Framework as a coordinated spatial planning process operating
 682 across interconnected terrestrial, freshwater, coastal, and marine systems. It shows
 683 planning occurs across a gradient from intact ecosystems to working landscapes and heavily
 684 modified systems, and a vertical dimension representing the three interconnected realms.
 685 Within this continuum, biodiversity, Natures Contribution to People, human uses, and
 686 pressures are spatially integrated through coordinated planning processes that support
 687 decision-making across different contexts. The decision gradient—from avoiding impacts to
 688 protecting, restoring, and sustainably using ecosystems—illustrates how spatial planning
 689 organizes management actions across the continuum. Protected areas, Indigenous
 690 territories, and community-managed areas are embedded within the landscape. Together,
 691 the figure highlights the role of Target 1 as an enabling framework for coordinating spatial
 692 decisions across sectors, ecosystems, and jurisdictions.

693



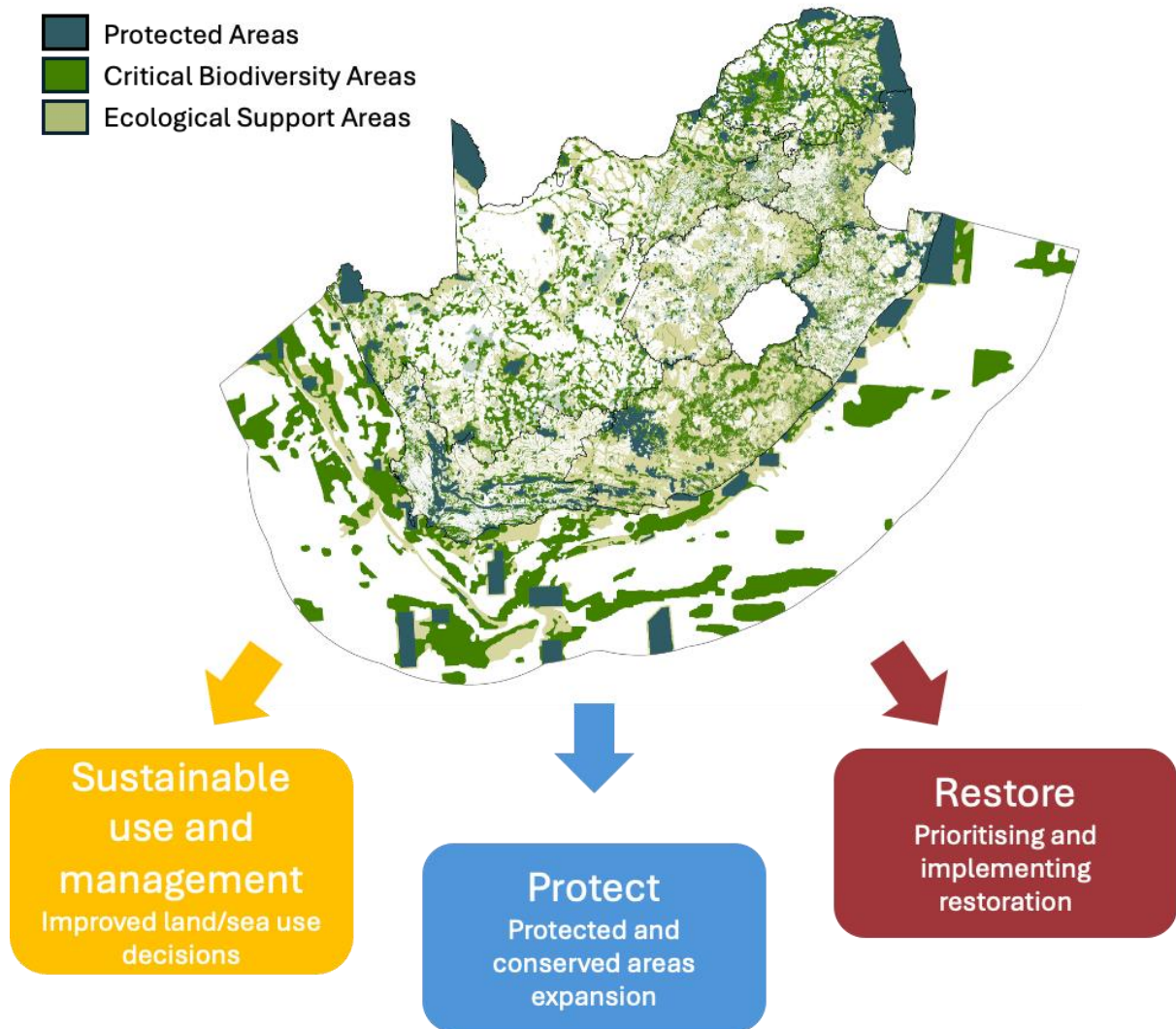
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697 Figure 2. Conceptual linkages between the Kunming–Montreal Global Biodiversity
 698 Framework targets. This illustrates how coordinated actions across restoration,
 699 conservation, and sustainable use and management (avoiding loss) guide progress
 700 towards Goal A of the Kunming–Montreal Global Biodiversity Framework. Actions
 701 aligned with Targets 1–12 and 21–23 interact to reduce biodiversity loss, restore
 702 ecosystems, and manage species use, while integrating biodiversity considerations
 703 into planning and implementation (Target 14). The framework highlights pathways
 704 through which biodiversity interventions support human wellbeing, while emphasising
 705 planning, mainstreaming, and governance as critical enablers linking ecological
 706 outcomes to societal benefits.

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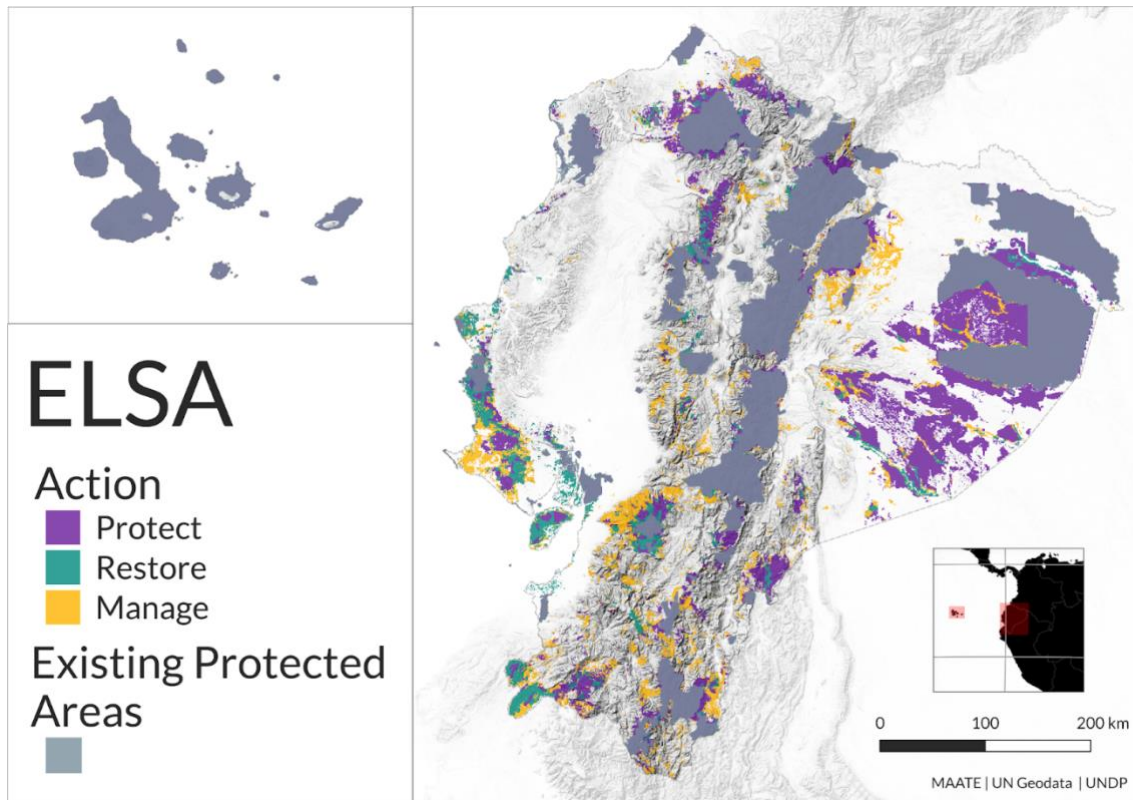


709

710 Figure 3. This map shows South Africa’s Critical Biodiversity Areas (CBAs) and Ecological
 711 Support Areas (ESAs) alongside existing protected areas, representing a coordinated
 712 national approach to biodiversity spatial planning. CBAs identify the minimum areas
 713 required to retain biodiversity and ecological processes. ESAs are natural or semi-natural
 714 landscapes that maintain ecological processes and connectivity needed to sustain
 715 biodiversity and ecosystem functioning in adjacent CBAs The map guides action by helping
 716 guide sustainable use and management, directing protected area expansion, and prioritising
 717 restoration. In doing so, it advances Target 1 (integrated spatial planning) of the Convention
 718 on Biological Diversity Kunming–Montreal Global Biodiversity Framework, while also
 719 supporting Targets 2, 3 and 10 on restoration, conservation and sustainable land
 720 management.

721

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725 Figure 4. This map shows Costa Rica’s Essential Life Zones, identifying ecosystems that are
726 critical for maintaining biodiversity, water security, climate regulation and other key
727 ecological functions (Venter et al. 2024). These zones highlight areas necessary to sustain
728 life-support systems and long-term ecological resilience across the country. The map
729 supports integrated spatial planning by guiding conservation, restoration and sustainable
730 land-use decisions.

731