

1 Protected Areas and Indigenous Territories: Pillars for Achieving the Conservation Goals in 2 the Amazon

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10 11 **Abstract**

12
13 This Policy Brief highlights the crucial role of Protected Areas (PAs) and Indigenous
14 Territories (ITs) in safeguarding the Amazon's biodiversity, mitigating climate change and also as
15 the pillars for achieving its conservation goals. These areas together cover nearly 50% of the
16 Amazon Basin, protecting significant portions of forests and carbon stocks. However, despite
17 these efforts, deforestation, illegal mining, infrastructure development, and weak/misguided
18 governance continue to threaten both PAs and ITs. These pressures are compounded by the
19 increasing frequency of extreme climate events, including droughts and fires, which further
20 degrade ecosystems. Indigenous knowledge and governance systems have proven essential for
21 maintaining forest health and resilience, underscoring the need to strengthen legal protections
22 and enhance connectivity between PAs and ITs. To address these challenges, this Policy Brief
23 recommends enhancing legal frameworks, promoting sustainable livelihoods, integrating
24 terrestrial and freshwater conservation, and fostering transboundary coordination. It emphasizes
25 the importance of community-based conservation and the urgent need to involve Indigenous
26 communities in climate adaptation and biodiversity conservation strategies. The preservation of
27 both ecological and socio-cultural connectivity is critical to the long-term sustainability of the
28 Amazon.

29 30 **Key Messages:**

- 31
32 ● **Importance of Protected Areas and Indigenous Territories (ITs):**
- 33 - Since the 1960s, protected areas (PAs) in addition to existing Indigenous territories (ITs)
 - 34 have been key components of Amazonian conservation.
 - 35 - Nearly 50% of the Amazonia, PAs and ITs combined, is under some form of legal
 - 36 protection or sustainable use/management.
 - 37 - ITs and PAs play a crucial role in mitigating climate change by together protecting
 - 38 approximately 46 GtC or 58% of the total carbon stock aboveground in the Pan-amazon.
- 39
- 40 ● **Current Challenges and Threats:**
- 41 - Increasing deforestation rates due to agricultural expansion, illegal and legal mining, and
 - 42 infrastructure development are significant threats to the Amazon in general.
 - 43 - Extreme climate events are a growing reality in the Amazon, with increased frequency
 - 44 and intensity of droughts related to climate change which are putting ITs and PAs under

45 growing pressure. Forest areas are degrading and losing their resilience due to these
46 climate events.

47 - Misguided policies and legal setbacks can be a threat for achieving the conservation goals
48 in the Amazon

49

50 ● **Need for Connectivity maintenance and Integrated Management:**

51 - These negative trends are threatening ecological connectivity which is essential for the
52 functionality of Amazonian ecosystems and global climate stability.

53 - Protected Areas are becoming isolated which strongly calls for integrated management
54 approaches in which PAs and ITs are complementary.

55 - Existing overlap and adjacency between PAs and ITs, should be a basis to device
56 governance models that maintain and enhance the functional and cultural connectivity
57 throughout expansive areas.

58

59 ● **Role of Indigenous Peoples**

60 - Indigenous peoples' management systems and knowledge have proven effective in
61 protecting forests, making their territories central to biodiversity conservation, and
62 climate adaptation and mitigation, still, many of them or all in some countries of the
63 region, lack formal recognition.

64

65 **Key Recommendations:**

66

67 ● **Legal and Institutional Strengthening:**

68 - Enforce existing policies to protect remaining natural ecosystems and avoid continued
69 encroachment.

70 - Strengthen legislation to protect land and water rights and recognize Indigenous
71 knowledge and territorial autonomy.

72 - Formally recognize Indigenous Territories and support autonomous, local participatory
73 management of resources.

74 - Strengthen Indigenous governance structures for participatory territorial management,
75 ensuring alignment between departments, municipalities, indigenous and traditional
76 lands

77

78 ● **Conservation and Sustainable Livelihoods:**

79 - Promote sustainable livelihoods by respecting territorial rights and supporting a socio-
80 bioeconomy through investment plans and enabling policies.

81 - Implement biocultural restoration approaches that focus on ethnocultural identity, food
82 security, biodiversity conservation, and community involvement.

83 - Promote innovative financial mechanisms for Amazon conservation like REDD+,
84 Conservation Bonds, PES, among others.

85

86 ● **Climate Change Adaptation:**

87 - Urgently implement climate adaptation measures that prioritize environmental
88 protection and safeguard the lives of Indigenous peoples and local communities.

- 89 - Strengthen the resilience of ecosystems by enhancing connectivity between PAs and ITs
90 to mitigate the impacts of extreme climate events.
91
92 ● **Innovations in Governance and Connectivity:**
93 - Integrate terrestrial and freshwater conservation planning to maintain ecological flows
94 and habitat connectivity.
95 - Foster community-based resource management schemes to support sustainable use and
96 conservation efforts.
97 - Enhance transboundary coordination through existing treaties and policies to ensure
98 basin-wide ecological and cultural connectivity and to support the establishment of
99 sustainable use areas and conservation corridors at a landscape scale.

POLICY BRIEF

1. Introduction

104 Since the 1960s, Protected Areas (PAs) and existing Indigenous Territories (ITs) have been
105 key components of Amazonian conservation, and while conservation policies have made both
106 progress and faced setbacks, growing pressure on Amazonian resources through unsustainable
107 extraction, policies, and global markets favoring conventional development threaten the
108 achievements of over half a century of efforts [1,2]. Nearly 50% of the Amazon Basin is under
109 some form of legal protection or sustainable use, mainly through PAs and ITs, highlighting the
110 region's potential to conserve and manage ecological connectivity (Table 1). However, increasing
111 deforestation rates and the effects of climate change are putting ITs and PAs under growing
112 pressure [4]. Under the Kunming-Montreal Global Biodiversity Framework (GBF), countries
113 have committed to protect biodiversity through area-based strategies, such as achieving 30%
114 coverage of marine and terrestrial areas by 2030 (Target 3), but this is insufficient for the Amazon
115 [5]. Even with nearly 50% of the Amazon under some form of protection or management, the
116 current trajectory risks pushing the region to a tipping point, making the urgent, inclusive, and
117 effective implementation of most of the 23 GBF targets in the Amazon region crucial. The GBF
118 also recognizes the rights of Indigenous Peoples and the importance of acknowledging their
119 territories in implementing GBF targets [6-8]. Indigenous Territories (ITs) and their inhabitants
120 have played a crucial role in maintaining forests and mitigating forest loss emissions more
121 effectively than areas outside their boundaries, underscoring the importance of recognizing and
122 enhancing ITs' contributions to biodiversity protection and consolidating a vision for safeguarding
123 macro-regional connectivity in the Amazon [9]. ITs and PAs in the Amazon are also critical in
124 mitigating climate change, protecting approximately 56% of the forests and 58% of aboveground
125 carbon, acting as significant barriers to deforestation and forest degradation [10,11].
126 Indigenous peoples' ways of living ensure the health of forests and ecosystems through their
127 knowledge, forest management, and governance systems, yet despite the scientific and political
128 recognition of their importance in climate mitigation and territorial management, full respect for
129 their territorial rights remains insufficient [10,12]. What is more, ITs and PAs are vital for
130 regional integrity, including water recycling, precipitation beyond the Amazon Basin, land surface
131 temperature regulation, and the protection of biodiversity and associated ecosystem services
132 [13]. However, deforestation coupled with global climate change poses severe threats to

133 Indigenous Peoples and Local Communities (IPLCs), their territories, and the stability of regional
134 and global climate systems.

135

136 **1.1 The importance of Indigenous Peoples and Local Communities inhabiting the Amazon**

137 Indigenous Peoples have co-inhabited the Amazon for at least 19,000 years, as studies in
138 Colombia suggest, and evidence of human occupation in central Amazonia dates back to the early
139 Holocene, approximately 11,200 years ago, as seen at the Caverna da Pedra Pintada site in Monte
140 Alegre, PA, Brazil [14]. The Amazon rainforest, which emerged at the end of the Pleistocene and
141 beginning of the Holocene, co-evolved with human populations already occupying the biome,
142 reinforcing the concept of the Amazon as a landscape shaped by human action [15,16]. This is
143 supported by evidence of tree species hyper-dominance [17], human environmental impact since
144 the late Pleistocene [18], domestication of landscapes and plants [15,19] and archaeological sites
145 with “terra-preta” soils indicating anthropogenic activity during the late Holocene [20-22].
146 However, this traditional way of life began to lose relevance with the introduction of Eurocentric
147 rationality, which used epistemological structures to justify European domination over other
148 cultures and marginalize alternative forms of knowledge [23]. In this framework, land became
149 viewed as private property, forests as economic resources, and Amazonian human societies as
150 cheap labor, challenging the intergenerational transmission of Indigenous Knowledge and
151 livelihoods, which have proven effective for forest protection. Currently, we are witnessing an
152 increase in extreme climate events, such as intense and extended droughts, and biodiversity loss.
153 Thus, the ways of life and worldviews of native populations gain prominence. In this context,
154 indigenous leader Ailton Krenak's statement, "the future is ancestral," calls for rethinking
155 humanity's relationship with nature and recognizing the importance of Indigenous science as a
156 means to address the "civilizational crisis," environmental destruction, social inequality, and the
157 loss of cultural and biological diversity driven by European rationality, as noted by Brazilian
158 geographer Carlos Walter Porto-Gonçalves. Therefore, conserving Amazonian forests must
159 involve a deep dialogue with the lifestyles and cosmovision of Indigenous Peoples and Local
160 Communities inhabiting these territories. This knowledge management, including traditional
161 knowledge, is a crucial strategic means of implementing the objectives and goals of the Kunming-
162 Montreal Global Biodiversity Framework. Article 8J of this framework urges countries to maintain
163 the knowledge, innovations, and practices of Indigenous Peoples and Local Communities that
164 reflect traditional lifestyles relevant to the conservation and sustainable use of biological
165 diversity, promoting their broader application with the approval and participation of those who
166 possess such knowledge, ensuring equitable sharing of benefits derived from their use.

167

168 **1.2 Indigenous Territories:**

169 Indigenous thinkers, in their efforts to convey to non-Indigenous Peoples their understanding
170 and experience of territory, have emphasized that the struggles of Indigenous Peoples (IP) for
171 formal recognition and land tenure regularization are, above all, struggles for life and the right to
172 exist, not merely to survive on a piece of land seen as a production factor. In this regard, as the
173 Indigenous leader Daniel Munduruku explains: “The Indigenous sees the land as a set of
174 relationships. [...] Land for us is part of us. The Indigenous look at the land [...] as [...] something
175 that is part of themselves. It is part of their own existence” [24]. According to this understanding,
176 “for Indigenous peoples, it is impossible to think, speak, produce, or make any decision

177 dissociated from their territories” [25]. This relationship of belonging means that “Indigenous
178 Peoples, their territories, and [other] beings that inhabit them share an interdependent
179 relationship” [25]. It can even be said that it is not the Indigenous Peoples who are within their
180 territories, but the territories that exist within them [25]. Anthropologists observe that “territory
181 is not a notion that refers only to physical space, but above all to cosmological conceptions” [26],
182 referring to the culturally variable construction and experience of the relationship between a
183 society and its territorial base. These conceptions generally relate to places where a certain way
184 of being is lived and to the designation of a person or group belonging to these places. As Oliveira
185 notes, “It is not in the nature of Indigenous societies to establish precise territorial limits for the
186 exercise of their sociability [27]. This need arises exclusively from the colonial situation to which
187 these societies are “subjected” [29]. This is because nearly all Indigenous Peoples have been
188 expropriated from large parts of their territories, which have been fragmented and demarcated,
189 generating new claims [26]. Therefore, the formal recognition of Indigenous territorial rights
190 “must take into account specific historically located contexts [considering the historical
191 reparation of such expropriations] and not be limited to assuming that ethnic boundaries
192 correspond to territorial boundaries” [26]. In terms of governance, Indigenous Peoples have
193 made significant progress in developing self-defined management plans and instruments, such
194 as life plans and protocols for relationships with others. These have been critical for governing
195 and managing Indigenous Territories (ITs) and for the implementation of territorial rights in the
196 region [30]. There are powerful examples of successful methodologies based on endogenous
197 research, ensuring intergenerational knowledge transmission, the use of their own languages,
198 and sovereignty over their knowledge, which strengthens autonomous decision-making [31-33].
199 These instruments have been key in articulating with non-Indigenous society, legitimizing and
200 recognizing their governance structures, and facilitating dialogue and coordination with official
201 State institutions, including environmental authorities.

202

203 **1.3 Areas for Isolated Indigenous Peoples:**

204 At least 100 to 185 groups of Indigenous peoples are living in voluntary isolation across the
205 Amazon, primarily in Brazil, Peru, Bolivia, Colombia, and Ecuador [34]. Over half of these records
206 are not officially confirmed due to a lack of studies and, as a result, they remain invisible to
207 countries. According to RAISG data [59], areas recognized as reserves for PIACI (Pueblos Indígenas
208 en Situación de Aislamiento y Contacto Inicial), cover 82,319 km² in Peru and Ecuador, while for
209 other Amazonian countries, the hundreds of recorded points of presence are distributed within
210 other delimited Indigenous Territories (ITs). Isolated Indigenous peoples either avoid contact or
211 have intermittent contact with the majority society and other Indigenous groups, some of which
212 may share the same territory. Their decision for isolation often stems from traumatic contact
213 experiences in the past, which still occur today, or other internal decision-making processes
214 aimed at reducing vulnerability. By choosing isolation, these peoples express their right to self-
215 determination and signal the need for preserved, integral, and intangible territory. These are
216 legitimate decisions, implicitly manifested, and must be recognized and guaranteed by legal
217 frameworks and practices. Despite differentiated public policies across countries for the
218 protection of these peoples, common threats include agricultural frontier expansion, oil and gas
219 extraction, infrastructure projects, logging, deforestation, fires, illegal mining, religious
220 proselytism, lack of political will, land invasions, drug trafficking, and organized crime.

221 Additionally, isolated and recently contacted peoples face high levels of vulnerability in
222 epidemiological, demographic, territorial, and political contexts. Given this extreme vulnerability,
223 it is crucial to recognize, demarcate, and ensure their territories under principles of integrity,
224 intangibility, and land conservation, recognizing territorial demarcation as a central strategy for
225 the protection of isolated Indigenous peoples.

226

227 **1.4 The Current Situation of Protected Areas and Indigenous Territories in the Amazon**

228 By mid-2023, Protected Areas (PAs) in the entire Amazon represented 25.5% of the region (Table
229 1). However, half of these areas fall under less restrictive categories, where the use of natural
230 resources is permitted, not always aligning with conservation objectives. In some countries,
231 historical land uses inside PAs including past or present oil industry activity, which emits or
232 disperses contaminants in the soil, water, and wildlife [35-37]. Mongabay journalists mapped
233 the presence of toxic residues in at least 50 Indigenous territories and 15 protected areas,
234 spanning from Colombia to Bolivia, while the reconstructed path of oil pipelines crosses over 200
235 Protected Areas [38]. According to Mapbiomas Amazonia [39], land use and cover analyses over
236 the past 39 years reveal that 880,000 km² of forest cover has been lost, equating to more than
237 12% of the forest present at the start of the analysis period in 1985 (Table 2). Of this loss, 94%
238 occurred outside Indigenous Territories (ITs) and PAs, 3% within PAs, and 4.3% within ITs. In 2022,
239 PAs accounted for 28% of the Amazon's forest cover, while ITs held 34%. Combined, and including
240 overlapping areas, these two units hold 56% of the Amazon's forest cover, most of which consists
241 of stable or old growth forest that has remained unchanged for the 38-year analysis period or
242 longer. Equally important, 42% of old growth forests are outside these protection units, putting
243 them at risk of transformation unless they are considered prime candidates for conservation or
244 sustainable use to ensure connectivity, protect biodiversity, and maintain ecosystem functions
245 and services.

246

247 **2. Compounded Threats to Protected Areas and Indigenous Territories**

248 The Amazon Basin is facing unprecedented threats that jeopardize its rich biodiversity and the
249 livelihoods of its Indigenous and local communities. Protected areas and Indigenous territories,
250 once bastions of conservation and cultural heritage, are increasingly vulnerable to a range of
251 social, economic and environmental compounded threats. From aggressive agricultural
252 expansion and illegal logging to mining and infrastructure development, these forces are driving
253 extensive deforestation and environmental degradation. What is more, the combination of weak
254 governance, misguided policies, socio-economic pressures, global market demands, climate
255 change and the increase of extreme events, further exacerbate these challenges, undermining
256 the protections intended to safeguard these critical regions.

257

258 **2.1 Drivers of change in Conservation Areas**

259 Infrastructure projects like the Ferrogrão railway in Brazil and gold mining in Bolivia and Ecuador,
260 along with agricultural expansion, pose significant threats to these regions. The expansion of the
261 agricultural frontier, now covering 16% of the region [39], often begins illegally through land
262 grabbing, showing the need for improved land use control and monitoring of Protected Areas
263 [4,40]. Deforestation and degradation are driven primarily by agricultural expansion, legal and
264 illegal logging and mining activities, a growing road network, failures in environmental

265 governance, socioeconomic pressures, global market demand [40], and the land market [41].
266 Agricultural expansion, particularly for cattle ranching, soybean, and oil palm cultivation, has led
267 to deforestation in Protected Areas and Indigenous Territories, with agricultural use within these
268 areas increasing by over 100% between 2001 and 2023 [60]. This encroachment not only
269 undermines the environmental integrity of these areas but also disrupts the livelihoods and
270 cultural practices of Indigenous communities, who depend on the forest for sustenance and
271 traditional activities [42] . Illegal logging, driven by market demand for valuable timber, and
272 mining activities, both legal and illegal, contribute to deforestation and environmental
273 degradation. Mining operations, which covered 9.3% of Protected Areas (PAs) and 11.2% of
274 Indigenous Territories (ITs) by 2020, often encroach on these lands, causing direct deforestation
275 and associated problems like water pollution and social erosion. These activities frequently occur
276 without the consent of Indigenous Communities, violating their rights and disrupting their
277 traditional ways of life [43,44] . Infrastructural development, such as road construction and
278 hydroelectric dams, exacerbates these problems by increasing access to remote areas, facilitating
279 further illegal activities [45] . Weak governance and enforcement, often compromised by
280 corruption and insufficient resources, allow these activities to persist [40] . Moreover,
281 socioeconomic pressures, including poverty and limited economic opportunities, push some
282 community members toward environmentally harmful activities like illegal logging, mining, and
283 unregulated agriculture [41] , while global market demand for commodities like beef, soy, and
284 minerals further intensifies these pressures [45] . Additionally, the land market, influenced by
285 institutional chaos and weak state presence, leads to illegal land appropriation and concentrated
286 land ownership, contributing to deforestation and environmental harm. In regions like Colombia,
287 Bolivia, and Venezuela, illegal activities such as drug trafficking and gold mining are deeply
288 intertwined with these issues, resulting in significant violence and environmental degradation
289 [41] .

290

291 **2.2 Misguided Policies and Legal Setbacks**

292 Some categories of Protected Areas are legally shielded from extractive industries, but in the
293 Amazon, conflicts frequently arise in Indigenous Territories due to overlapping concessions for
294 extractive industries or infrastructure projects, impacting the rights of Indigenous Peoples.
295 According to ILO Convention 169 and the United Nations Declaration on the Rights of Indigenous
296 Peoples: “Indigenous peoples must be consulted through culturally appropriate procedures,
297 known as Free, Prior, and Informed Consent (FPIC), regarding any laws or projects affecting their
298 territories and livelihoods, with the goal of obtaining their agreement or consent, including the
299 possibility of modifying initial plans”. As a matter of fact, states have two main duties: the duty
300 of accommodation (adjusting or canceling plans based on consultation results) and the duty of
301 approving reasoned decisions (considering Indigenous concerns in final plans) [4] . In practice,
302 however, national regulations are often vague, reducing consultations to mere notifications of
303 decisions already made, frequently dividing Indigenous organizations. The “Amazonia Under
304 Pressure Atlas” [29], highlights significant pressures on Indigenous Territories (ITs) and
305 Protected Areas (PAs) due to extractive activities and infrastructure development, with 51% of
306 Protected Areas and 48% of Indigenous Territories facing moderate to high levels of pressure.
307 Additionally, illegal mining and logging continue to expand, often without state control. Recent
308 setbacks in the legal framework in most Amazonian countries undermine previous legislation, roll

309 back acquired rights, and jeopardize efforts to combat the effects of the climate crisis and
310 biodiversity loss by facilitating mining, roads, railways, agribusiness, oil, and timber exploitation
311 (both legal and illegal), promoting violence and diseases among Indigenous Peoples. Many
312 conflicts underscore environmental racism and foster legal insecurity concerning Indigenous
313 lands. It is necessary to connect development with human, socio-environmental rights, and
314 climate justice. However, the congresses of several Amazonian countries are moving in the
315 opposite direction, redefining legislation to favor economic interests and extractive markets in
316 Amazonian territories, with strategies that co-opt subnational governments to push legislative
317 reforms undermining environmental ministries, as seen in Peru (Box 1) and in Brazil (Box 2). For
318 example, Brazil's Bill No. 2168, dated June 14, 2021, seeks to amend Law No. 12,651/2012 (the
319 "Law of Forests") to consider irrigation and livestock watering works as public utilities, aiming to
320 allow the suppression of native vegetation in permanent preservation areas.

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324 **BOX 1: Case Study in Perú - Legal Frameworks for the Transformation of the Amazon**

325
326 Michel Foucault developed the concept of governmentality¹, which suggests that the State and
327 the market coexist and complement each other [46]. Neoliberal governmentality does not
328 intervene directly with market players but rather with the "rules of the game," the regulatory
329 framework, to create an environment conducive to the expected behavior without direct action
330 [47]. Peru offers two key examples of legislation that facilitate extractive activities while
331 simultaneously eroding human rights, Indigenous Peoples' rights, and the State's role. In the
332 Peruvian Amazon, 32% is recognized as Indigenous territory, 17% consists of Protected Areas, 3%
333 represents an overlap of both regimes, and the remaining 48% is not covered by conservation
334 regimes. Deforestation in Peru is primarily driven by the agricultural sector, responsible for up to
335 91% of deforestation, facilitated by the rapid expansion of the national road network.
336 Additionally, 31% of the Peruvian Amazon consists of oil blocks, while illegal mining affects 17.3%
337 of Protected Areas and 10% of Indigenous Territories. These data underscore the need to
338 understand deforestation in terms of territorial dynamics and also highlight the economic
339 interests supporting bills and policies that undermine the ecological integrity of the Peruvian
340 Amazon. In 2023, the Peruvian Congress reviewed two significant bills that threaten Amazon
341 conservation and Indigenous rights: the modification of Law 28736 (PIACI Law) and the
342 modification of the Forestry and Wildlife Law, approved in December 2023. The PIACI Law
343 project, which threatened 25 Indigenous Peoples in Voluntary Isolation and Initial Contact (PIACI)
344 and their territories covering nearly 8 million hectares of primary forest, was shelved after
345 mobilizations and opposition from civil society, bilateral cooperation, and the United Nations. In
346 contrast, the modification to the Forestry Law was approved as a mechanism to benefit small
347 farmers and producers. The most notable change is the final complementary provision, which

¹ Governmentality is the ensemble constituted by institutions, procedures, analyses and reflections, calculations, and tactics that allow for the exercise of this very specific, very complex form of power, whose primary target is the population, whose primary form of knowledge is political economy, and whose essential technical instrument is security apparatuses. (Foucault, 1999: 195), Castro Gómez, 2010. p. 145.

348 allows the creation of "exclusion areas for agricultural purposes" without first classifying the land
349 by its primary use capacity (forest or agricultural) or meeting the requirements outlined in Article
350 38 of the Forestry Law. As approved, the law diminishes the Ministry of Environment's control
351 role, as seen in Brazil. In summary, the law modification introduces three changes: suspension of
352 forest zoning, exclusion of MINAM from forest zoning processes and technical reviews, and
353 elimination of the procedure for authorizing land-use changes in private areas.

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358 **BOX 2: Case Study in Brazil - Indigenous Rights Threatened**

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360 Deforestation, forest fires, water pollution, illegal logging and mining, land grabbing, and
361 increasingly severe droughts are regrettably not the only threats to IIs and Indigenous peoples.
362 The Brazilian Congress headed by ultra-conservative parties and powerful economic and political
363 lobbies have been insurgent in the past years to weaken the legal framework which assigns the
364 protection status of IIs and the constitutional enshrined land rights of indigenous peoples. Some
365 legislative changes have been proposed to slacken restrictions of IIs land usufruct by non-
366 indigenous such cropland leasing and mining, autonomy withdrawing of the FUNAI to physically
367 demarcate new IIs, and revoking of presidential prerogatives to decree IIs physically
368 demarcated, with considerable negative repercussions of the public opinion [30]. Additionally,
369 an aberrant judicial interpretation called 1988 Deadline Tenet ("Tese do Marco Temporal") has
370 been in the political agenda. It endorses indigenous land rights only if they were occupying their
371 land claims in September 1988, when the Brazilian Constitution was declared, deliberately
372 ignoring that many indigenous groups had been evicted from their territories. The 1988 Deadline
373 Tenet came to the Brazilian constitutional court (STF) a few years ago through an extraordinary
374 appeal about the institutional rule of land possession from traditional indigenous occupations
375 with a recently favorable decision to Amerindians. Furthermore, STF was concomitantly called
376 upon to judge another version of 1988 Deadline Tenet readily approved as law by the Congress
377 in the same week of the former court decision, deciding in plenary it is unconstitutional. The
378 litigation continues in STF with a Commission of Conciliation monocratically installed over former
379 decisions of the court collegiate. That commission is ludicrously dealing with a borrowed matter
380 which is permission for mining inside IIs. Indigenous peoples representants have tried
381 unsuccessfully to learn about the adopted criteria for choosing committee members.
382 Additionally, indigenous peoples are represented in a minority whereas the judge who chairs the
383 hearings warned them that it will prevail in the votes of the majority in case there is no consensus.
384 In face of such shady rules, the main representative body of indigenous peoples withdrew from
385 the Commission of Conciliation. Many law scholars have been heavily critical about the
386 establishment of this commission. They emphasize which the fundamental rights are out of any
387 discussion, and it is imperative to the court plenary to enforce its own collegiate decision.
388 Meanwhile, the land conflicts between indigenous peoples, farmers and land grabbers are in full
389 throttle.

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395 **2.3 Climate Change, Extreme Events and Forest Fires**

396 The increase in extreme climate events is already a reality in the Amazon, a region that in the
397 coming years will experience a decline in precipitation, higher temperatures, shorter rainy
398 periods, and more frequent and intense droughts, fires, and even floods [47-49] . These climate
399 conditions, combined with the aforementioned drivers of change, create feedback loops that will
400 only exacerbate the situation going forward. Protected Areas and Indigenous Territories also
401 suffer heavily from these compounded pressures, resulting in forest loss in these conservation
402 areas. An example is the Tapajós Arapiuns Extractive Reserve, which spans 6,476 km² in the lower
403 Tapajós River region, overlapping six Indigenous territories, where fire has already degraded
404 more than 100,000 hectares and forced Indigenous communities to relocate. Intense droughts,
405 repeated fires, and the clearing of forests (such as the removal of mother trees and the formation
406 of less diverse, more fragmented low forests) have caused these areas to lose resilience, making
407 them less able to respond to fires. This has led to the loss of agrobiodiversity in the gardens and
408 fields of forest peoples due to lack of water, altered production cycles, seed loss, and increased
409 pests. As a result, ancient cultural practices like "slash and burn" are no longer feasible and have
410 become unmanageable. With these climatic events, forest degradation in the Amazon is
411 expected to worsen, with fire emerging as a deadly threat as the forest becomes drier. According
412 to Barlow et al. [50] , 20% of the remaining forest in eastern Amazonia will burn in the coming
413 years. Therefore, urgent containment measures are necessary to avoid reaching the tipping point
414 in the Amazon .

415
416 **3. Connectivity and Conservation Opportunities:**

417 The global goal to protect 30% of marine and terrestrial areas by 2030, along with the recognition
418 of the importance of involving Indigenous and traditional territories in this effort, presents an
419 opportunity to highlight the crucial role of Protected Areas (PAs) and Indigenous Territories (ITs)
420 in biodiversity protection and enhance macro-regional connectivity in the Amazon. However, this
421 global goal will be insufficient to fully safeguard biodiversity on its own without the integration
422 or connectivity of conservation units [51]. Integrating PAs and ITs can support sustainable-use
423 landscapes, conservation corridors, and community-based conservation areas. The Amazon, with
424 its diverse management categories such as PAs of varying stringency, ITs, forest reserves, and
425 extractive reserves (for sustainable use), has the potential to consolidate connectivity through
426 coordinated national and transnational efforts. Currently, 50% of the Amazon Basin is under
427 some form of legal protection, making it one of the world's regions with a high connectivity index.
428 The collective efforts of Amazon countries, through various binational and international
429 agreements, are crucial for maintaining connectivity and ensuring the functioning of Amazon
430 ecosystems, which are essential for global climate regulation and biodiversity protection.
431 However, the continuous transformation of natural landscapes, particularly in areas like the
432 Andean–Amazon foothills, threatens current connectivity and the future of the PAs and ITs
433 network. International frameworks, such as the Kunming-Montreal Global Biodiversity
434 Framework, emphasize the need for comprehensive sustainable management plans for large
435 ecoregions, which are vital for achieving global conservation goals. The work of civil society

436 organizations and governments has led to numerous conservation projects, initiatives, policies,
437 and models aimed at preserving the Amazon. Given the strong relationship between Indigenous
438 Knowledge systems used for land management and the well-being of forests in ITs, it is essential
439 to broaden the concept of connectivity to include ecological and socio-cultural aspects. This
440 broader perspective focuses on maintaining ecological flows, habitat networks, cultural and
441 biological diversity, the water cycle, climate balance, and the overall resilience of the system,
442 through connectivity among ecosystems, stakeholders, and systems of thought [4] .

443

444 **3.1 Importance of Connectivity in the Amazon**

445 Conserving biodiversity and its contributions to people requires a well-connected network of
446 Protected Areas and Indigenous Territories. Amazonian freshwater and terrestrial ecosystems
447 generally maintain a high connectivity status, with the basin containing the longest free-flowing
448 rivers on Earth, originating in the Andes, flowing through the lowlands, and emptying into the
449 Atlantic Ocean [52]. This longitudinal connectivity is essential to the life histories of many
450 species [53]. Rivers and forests are also laterally connected, exchanging nutrients that fertilize
451 floodplains and facilitating the movement of animals that depend on these resources for food
452 and refuge [54]. The vertical exchange of water, from soils and sediments through lakes, rivers,
453 and vegetation into the atmosphere, is foundational to the Amazon's climate, as much of the
454 basin's precipitation is recycled from forest evapotranspiration [55]. People are bio-culturally
455 and economically connected to rivers and forests through cosmologies, cultural practices, and
456 food, such as fisheries [61]. Maintaining connectivity across these dimensions is crucial both
457 within and among Protected Areas and Indigenous Territories. Factors that reduce connectivity,
458 such as deforestation, infrastructure (e.g., roads, dams), defaunation, and mining, affect rivers
459 and forests both inside and outside the conservation units. However, these pressures are less
460 intense within Protected Areas and Indigenous Territories as mentioned before. The Amazon's
461 Protected Areas are among the least isolated globally and maintain some of the greatest
462 functional connectivity [56] . Nevertheless, Protected Areas have shortcomings in supporting
463 river network connectivity, as movement and fluxes in aquatic ecosystems are more physically
464 restricted compared to terrestrial systems [57]. Maintaining connectivity within the existing
465 Protected Areas and Indigenous Territories network will require integrating terrestrial and
466 freshwater conservation planning, with ample opportunities to do so. Community-based natural
467 resource management schemes, which have a long history in the basin, can strengthen
468 connectivity in the broader protected area network. For example, community-based fisheries can
469 produce measurable positive spillover effects for biodiversity and people within and outside
470 protected water bodies [58]. Other Effective Area-based Conservation Measures (OEMs),
471 such as conservation financing (e.g., REDD+, Water Funds), can achieve similar outcomes if
472 properly implemented, with safeguards for Indigenous rights and autonomy. Additionally, as the
473 Amazon becomes increasingly urbanized, maintaining bio-cultural connections through
474 participatory science can empower people and center them in conservation efforts. As the
475 Amazon spans multiple political scales, including nations, territories, and sub-national
476 jurisdictions, maintaining connectivity requires transboundary coordination, and existing treaties
477 such as the Amazon Cooperation Treaty Organization provide platforms for policy engagement
478 at a basin-wide scale.

479

480 **4. Conclusions and Recommendations**

481 The Amazon Basin's Protected Areas (PAs) and Indigenous Territories (ITs) serve as pillars for
482 achieving global conservation goals, especially under the Kunming-Montreal Global Biodiversity
483 Framework. These areas play a critical role in maintaining biodiversity, regulating the climate,
484 and supporting ecological connectivity. Despite the substantial progress in establishing PAs and
485 recognizing Indigenous rights, ongoing threats such as deforestation, infrastructure
486 development, and extractive industries are undermining conservation efforts. The inclusion of
487 ITs in-conservation strategies is essential, as Indigenous peoples have demonstrated their ability
488 to manage and protect these ecosystems effectively. Furthermore, to ensure the long-term
489 sustainability of the Amazon, it is crucial to strengthen legal and institutional frameworks that
490 recognize Indigenous rights and promote community-based management. A holistic approach,
491 integrating terrestrial and freshwater conservation planning, is needed to maintain functional
492 connectivity across the Amazon's ecosystems. On the other hand, the implementation of
493 sustainable livelihoods, the preservation of traditional knowledge, and the protection of bio-
494 cultural diversity must also be prioritized. Finally, global efforts to protect 30% of the Earth's
495 surface by 2030 will not be sufficient without concerted action to safeguard the Amazon's unique
496 biodiversity and socio-cultural heritage. The Amazon's future depends on transboundary
497 cooperation, the protection of Indigenous Territories, and the development of innovative
498 conservation financing mechanisms, ensuring that Indigenous rights are at the center of all
499 conservation and development policies. Urgent measures are needed to address the
500 compounded pressures of climate change, deforestation and degradation, and socioeconomic
501 inequalities to prevent the Amazon from reaching a critical ecological tipping point. In the
502 following lines the main policy recommendations are presented:

503

504 **4.1 Legal and Institutional Strengthening**

505

506 **Recognize and Strengthen Indigenous Rights:** The formal recognition of Indigenous territorial
507 rights is crucial and should consider specific historically located contexts. This recognition must
508 not assume that ethnic boundaries correspond to territorial boundaries, acknowledging the
509 historical expropriation of Indigenous lands and ensuring reparations.

510 **Support for Self-Defined Management Plans:** Indigenous Peoples should be empowered to
511 create and implement self-defined management plans, including life plans and protocols for
512 relationships with others. These tools have been instrumental in governing Indigenous Territories
513 (ITs) and ensuring the effective implementation of territorial rights.

514 **Ensure Intergenerational Knowledge Transmission:** Support must be provided for
515 methodologies that guarantee the transmission of intergenerational knowledge, the use of
516 Indigenous languages, and sovereignty of Indigenous knowledge. These are critical for reinforcing
517 autonomous decision-making in ITs.

518 **Legitimize Indigenous Governance Structures:** Legal frameworks should recognize and legitimize
519 Indigenous governance structures. This includes facilitating dialogue and coordination between
520 Indigenous organizations and official State institutions, including environmental authorities, to
521 integrate Indigenous governance into broader conservation efforts.

522 **Increase Resources for Monitoring and Policing:** Provide greater funding and resources to
523 agencies responsible for monitoring illegal logging, mining, and deforestation, such as Brazil's
524 environmental agency (IBAMA).

525 **Combat Corruption:** Implement anti-corruption measures to ensure that local law enforcement
526 and government officials are held accountable for protecting the Amazon from illegal activities.

527 **Enhance Surveillance Technologies:** Utilize satellite imagery, drones, and other modern
528 technologies to monitor illegal activities in real-time and increase enforcement capacity.

529 **Implement Land Tenure Regularization:** Provide legal titles to landowners and Indigenous
530 communities to reduce illegal land grabbing and encourage responsible land use.

531

532 **4.2 Conservation and Sustainable Livelihoods**

533

534 **Promote conservation-friendly livelihoods:** Provide funding for programs that offer economic
535 alternatives to illegal activities, such as ecotourism, sustainable agriculture, and forest product
536 harvesting, supporting a socio-bioeconomy through investment plans and enabling policies.

537 **Strengthen local organizations for participatory territorial management:** Empower local and
538 Indigenous communities by involving them in environmental monitoring and enforcement
539 efforts, providing incentives for protecting the forest, respecting territorial rights and ensuring
540 alignment with public policies.

541 **Biocultural Approaches to Restoration:** Implement biocultural approaches that are in harmony
542 with the lifestyles of local populations. Restoration initiatives should focus on food security,
543 sovereignty, and the conservation of agrobiodiversity to ensure the sustainability of both people
544 and ecosystems. Considering that Amazonian forests result from human-nature interaction,
545 restoration initiatives should engage with the traditional knowledge of local populations. Indeed,
546 community germplasm banks are important elements for the conservation of Amazonian
547 agrobiodiversity. A biocultural approach based on food security and sovereignty is suggested,
548 providing raw materials for daily activities, and caring for water sources.

549 **Enforce Traceability of Forest Products:** Implement strict traceability measures for timber,
550 agricultural products, and minerals to ensure that products sourced from the Amazon are legally
551 harvested and sustainably produced.

552 **Hold Corporations Accountable:** Establish stronger corporate responsibility regulations to ensure
553 that companies sourcing products from the Amazon are not complicit in illegal activities.

554 **Increase Market Incentives for Sustainable Products:** Promote and incentivize the production
555 and sale of certified sustainable products, such as timber, palm oil, and beef, to discourage illegal
556 practices.

557 **Promote Financial Innovation Mechanisms for Amazon Conservation:** Strengthen and expand
558 international carbon markets, ensuring that credits generated by REDD+ projects are verifiable
559 and meet high environmental integrity standards. Introduce "Amazon Conservation Bonds" or
560 "Green Bonds" as financial instruments that channel investment into conservation efforts,
561 backed by forest conservation projects and REDD+ initiatives. Set up Payment for Ecosystem
562 Services (PES) schemes where governments, corporations, or international donors pay
563 landowners and communities for maintaining forest cover and other ecosystem services, creating
564 direct financial incentives for conservation.

565 **Ensure Benefit-Sharing Mechanisms:** Implement transparent and fair benefit-sharing
566 mechanisms to ensure that local and Indigenous communities receive equitable compensation
567 for their contributions to forest conservation. Guarantee that REDD+ projects obtain the full and
568 informed consent of Indigenous and local communities before implementation, respecting their
569 rights and cultural practices (Free, Prior, and Informed Consent - FPIC).

570

571 **4.3 Climate Change Mitigation and Adaptation**

572

573 **Enhance Mitigation and Adaptation Measures:** Urgently implement climate change mitigation
574 and adaptation measures across all sectors, with a particular focus on public health and
575 environmental protection. Strengthening the capacity of local communities, especially
576 Indigenous Peoples, to handle climate-related risks is essential.

577 **Integrate Indigenous Knowledge:** Leverage Indigenous knowledge systems in climate adaptation
578 strategies, recognizing the critical role that Indigenous and local communities play in maintaining
579 forest health and resilience against climate change, for example in forest fires management.

580 **Promote Ecosystem Connectivity:** Strengthen the connectivity between ecosystems, particularly
581 within and between Protected Areas and Indigenous Territories, to ensure they remain resilient
582 in the face of increasing extreme climate events, such as droughts, fires, and floods.

583 **Support Community-Based Conservation:** Foster community-based conservation and natural
584 resource management initiatives that can help mitigate the impacts of climate change by
585 promoting sustainable livelihoods while preserving biodiversity.

586

587 **4.4 Innovations in Governance and Connectivity**

588

589 **Integrate Terrestrial and Freshwater Conservation Planning:** It is essential to integrate the
590 management of both terrestrial and freshwater ecosystems within Protected Areas (PAs) and
591 Indigenous Territories (ITs) to maintain and enhance connectivity. This helps preserve ecological
592 flows, species movement, and habitat integrity across the Amazon.

593 **Promote Community-Based Resource Management:** Supporting community-based natural
594 resource management schemes, which have a long history in the Amazon, is crucial. These
595 schemes strengthen connectivity in the broader conservation network and have positive spillover
596 effects for biodiversity and local communities, such as through sustainable fisheries.

597 **Implement Other Effective Area-Based Conservation Measures (OMECS):** Financing mechanisms
598 like REDD+ and Water Funds can play a critical role in enhancing connectivity and supporting
599 conservation efforts if properly implemented. It is essential to incorporate safeguards to protect
600 Indigenous rights and ensure their autonomy. For example, new governance models, such as the
601 "common use territory" (TUC) in Brazil, recognize collective territorial rights for traditional
602 communities outside protected areas. These models need further development for effective
603 implementation.

604 **Enhance Transboundary Coordination:** Given that the Amazon spans multiple political scales—
605 including national, territorial, and sub-national jurisdictions—transboundary coordination is vital.
606 Treaties such as the Amazon Cooperation Treaty Organization provide platforms for policy
607 engagement and coordination at the basin-wide scale.

608 **Foster Bio-Cultural Connections:** As the Amazon becomes increasingly urbanized, maintaining
609 bio-cultural connections through participatory science and engagement of local populations is
610 essential for empowering communities and centering them in conservation efforts.

611

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 883 **MAPS AND FIGURES (UNDER CONSTRUCTION)**

- 884
 885 **Map 1.** Protected Areas, Indigenous Territories and other Sustainable Uses
 886 **Map 2.** Threats in the Amazon such as Oil and Mining concessions/projects, and current
 887 deforestation hotspots
 888 **Map 3.** Conservation Gaps (Underrepresented regions in terms of number and surface of PAs)
 889 **Figure 1.** Statistics of PAs groups and ITs for each Amazonian Nation-state
 890 **Figure 2.** Graphic panel of 3Ds (downgrading, downsizing, and degazetting) PAs for each Nation-
 891 states
 892 **Figure 3.** Area of Total Remaining Forest, Area of PAs and ITs, Area of Deforestation 2001-2020
 893 by country (Km2)

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 895 Table 1: Aggregate area (km²) of PAs, ITs and areas with overlapping protection, percentage of
 896 Amazonian domain, according definition by RAISG, and percentage of countries surface (in
 897 brackets). Adapted from [3]

Country	Protected Areas (PAs)	Indigenous Territories (ITs)	Overlapping Areas (PAs and ITs)	Total area (discounting Overlap)
Bolivia	233,963 (32.7% (21.2%))	18,913 (2.6% (1.72%))	57,974 (8.1% (5.2%))	365,119 (51% (33.2%))
Brazil	1,285,528 (24.5% (15%))	1,164 (22.1% (13.6%))	103,923 (1.9% (1.2%))	2,342,829 (44.7% (27.5%))
Colombia	11,333 (2.2% (0.99%))	272,751 (53.9 (23.8%))	32,733 (6.4 (2.8%))	353,348 (69.8 (30.9%))
Ecuador	53,353 (40.3 (20.7%))	72,972 (55.1% (28.3%))	24,022 (18.1% (9.3%))	102,304 (77.3% (39.6%))

Guyana	10,402	4.9% (4.9%)	31,784	15% (15%)	1,015	0.48% (0.48%)	41,171	19.5% (19.5%)
French Guyana	3,476	4.1% (4.1%)	7,154	8.4% (8.4%)	6,653	7.9% (7.9%)	35,262	41.8% (41.8%)
Peru	20,733	2.1% (2.1%)	3,549	0.36% (0.27%)	31,613	3.27% (2.45%)	530,617	54.9% (41.2%)
Suriname	26,049	17.7% (17.7%)					26,049	17.7% (17.7%)
Venezuela	198,004	42.1% (21.6%)	327,202	69.5% (35.7%)	170,919	36.3% (18.6%)	354,287	75.3% (38.6%)
Total	2,162,720	25.5% (15.8%)	2,417,117	28.5% (17.6%)	428,852	5% (3.1%)	4,150,985	49% (30.3%)

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Table 2: Forest cover dynamics between 1985-2022. Adapted from [3].

	Forest cover in 1985	Forest cover in 2022	% forest loss 1985-2022
Bolivia	465353.28 (6.7%)	409510.89	12%
Brazil	4389601.11 (63.2%)	3722381.74	15.2%
Colombia	451462.14 (6.5%)	423922.95	6.1%
Ecuador	104183.57 (1.5%)	98453.47	5.5%
Guiana	187530.43 (2.7%)	186967.84	0.3%
French Guiana	83346.86 (1.2%)	82596.73	0.9%
Peru	722339.42 (10.4%)	693445.85	4%
Suriname	138911.43 (2%)	137800.14	0.8%
Venezuela	395897.57 (5.7%)	389167.31	1.7%

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