Report of the key messages arising from the 'Re-examining Indigenous Peoples' lands map' workshop

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The report does not necessarily reflect agreed positions or proposals, but is an effort to provide a compilation of views that were presented during the workshop.

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Background to the workshop

This workshop was convened to consider how the global map of Indigenous Peoples' lands (Garnett *et al*. 2018), thereafter IPL map, has been used, its impact on Indigenous Peoples[1], and to discuss potential future actions that could enhance its benefits. The workshop conveners – Jocelyne Sze, Álvaro Fernández-Llamazares, and Dan Brockington – have diverse engagements with the IPL map. Although none of the aforementioned persons identify as Indigenous, all of them share a deep commitment to advancing the recognition of Indigenous Peoples' rights, practices, and knowledge systems in conservation science, policy, and beyond.

The IPL map emerged within a specific policy context, driven by the notable lack of a global map of Indigenous territories. As discussed in the workshop, creating such a map involves significant challenges. It is unlikely to show all the places which Indigenous Peoples consider their ancestral lands and territories, as many IPs' territories are not fully recognised. Nonetheless, the IPL map contributed useful information to fill a policy gap, notably serving as an essential resource for the Global Assessment Report of the Intergovernmental Science-

[1] We capitalise 'Indigenous' as a sign of respect, as the collective name of a group of Peoples, and in consistency with a growing body of academic and other official literature. We use "Indigenous Peoples' (with uppercase I and P) to refer to groups with distinct legal rights and recognising their nationhood.

Policy Platform on Biodiversity and Ecosystem Services (IPBES). It illustrated the extent of lands globally managed by Indigenous Peoples and underscored the depth and breadth of their contributions to biodiversity conservation.

In 2024, the context surrounding the IPL map is different from when it was first produced in 2018 – the contributions of IPL to biodiversity are now well-documented across multiple knowledge systems and lines of research, often using the map as a resource. Current policy imperatives differ from those of the past. While the existing map can address some contemporary needs and the current map can serve some of these purposes, a reevaluation of its foundational approach could enhance its role in supporting a truly transformative social and environmental agenda.

Prior to the workshop, the workshop conveners met with Stephen T. Garnett and Julia E. Fa to better understand the context around the production of the IPL map and outline potential productive paths forward. Subsequently, Jocelyne reached out to non-Indigenous and Indigenous experts on Indigenous and local community-led mapping, mapping ethics, and data sovereignty. She engaged with these experts, including producers of other global maps of Indigenous Peoples and local communities, in preliminary conversations online, some of whom were able to join the workshop in person, while others could not due to care commitments and/or other personal circumstances. These discussions shaped the workshop agenda, with participants contributing as individuals, accountable to the diverse communities with whom they work or are part of, but without claiming to represent their views or speak on their behalf.

This report distils the key messages arising from the two-day workshop, which expanded its focus beyond communities formally understood as Indigenous under UNDRIP to also consider traditional and place-based communities with enduring connections to their customary territories. However, in this report, we keep with the accepted use of terminology “Indigenous Peoples”. Topics discussed included the costs and benefits of mapping, the political dimensions of Indigenous identities, tensions between Indigenous Peoples’ self-determination and state control, and the role of transformative mapping in advancing their self-determination. Additionally, the workshop explored methodological considerations critical to ethically and effectively updating the IPL map.

Key Themes

Rethinking maps: What they are and what they should be

Throughout history, maps have been used by empires and states to assert power, consolidate authority, define territories, and control people and resources. In the context of European colonisation, cartography was deployed on an unprecedented scale as a systematic tool for imperial expansion. European maps often erased Indigenous perspectives, imposed arbitrary

borders, and reinforced exploitative policies, leaving a lasting legacy that continues to shape modern geopolitical boundaries. This legacy has understandably led to widespread mistrust of maps. However, maps also hold the potential to be powerful tools for storytelling and advocacy. They can challenge dominant narratives that perpetuate disenfranchisement and dispossession. A growing body of literature and practice on "counter-mapping" demonstrates how maps can empower marginalised communities and support their claims to sovereignty and rights (Rose-Redwood *et al*., 2020; Kidd, 2019). The key question is not merely about using maps differently but rather how tools like the IPL map can be decolonised to advance justice, equity, and self-determination.

Maps are tools of influence, designed with specific purposes and intentions. As such, the act of mapping is never neutral, and maps should not be presented in isolation. Instead, they must be contextualised within broader discussions where their creators openly share the context and methodology behind their development. It is essential to clearly communicate a map's goals, intended purpose, methods, assumptions, and scale of use, as these factors shape how we perceive and respond to the realities they represent. Metadata accompanying maps and GIS layers play a vital role in providing this necessary transparency, helping users grasp the decisions and limitations underpinning the data.

Maps hold the power to make the unseen visible and legible, drawing attention to the existence of peoples and their connections to place, homelands and waters. They can play a critical role in advancing political and legal recognition, supporting self-determination, and protecting the rights of Indigenous Peoples. However, they can obscure realities too, and become dangerous when used by powerful entities that disregard Indigenous Peoples' interests.

Ideally, Indigenous lands should be titled in alignment with Indigenous Peoples' customary territories, granting them exclusive use. Such titles, as depicted in corresponding maps, should be recognised by governments, Indigenous Peoples, and national society, safeguarding their rights to land, water, and natural resources. However, some titled lands are too small to accommodate the needs of Indigenous Peoples in maintaining sustainable use of natural resources to ensure their socio-cultural longevity (e.g. Constantino *et al.,* 2018).

Maps relating to Indigenous Peoples must prioritise supporting their rights and reflect the values inherent in their land management, even when they do not align directly with conservation objectives and outcomes. These maps should support and strengthen the capacities of these communities, potentially fostering solidarities across diverse identity groups should they choose to do so. These may also illustrate the connections between communities and particular ecosystems, highlighting their contributions to biodiversity conservation. However, mapping should not be exclusively driven by conservation goals; its broader purpose lies in empowering these communities and respecting the multifaceted relationships they have with their territories.

A map that excludes Indigenous territories and lands, where they should rightly be included, raises several issues. Such omissions can be problematic for different reasons:

1. **Undermining agency**: The exclusion might reflect intentional efforts to undermine the agency and management of these peoples over their lands, making it an **unethical map**.
2. **Incomplete data**: It may result from a lack of important cartographic data, rendering it an **incomplete map**.
3. **Misrepresentation**: Poor labelling or characterisation might misrepresent land use, producing an **inaccurate map**, which carries significant implications for justice, equity, and the accuracy of mapping efforts.

The best intentions can still result in maps that inadvertently harm Indigenous Peoples. For example, academics and people working in NGOs often encourage communities to map their territories ("counter-mapping") and make promises that the maps would be to their benefit. However, the production of these counter-maps could interfere with their self-determination, by potentially enrolling them onto developmental pathways that they do not want to pursue. The value of any map depends on its level of socialisation (sharing with communities and gaining their acceptance) and transparent acknowledgement of its limitations. These maps should not be used to foreclose the potential for land restitution but should be seen as starting points for further discussion.

Maps translate cultural practices—including world-views, ontologies, epistemologies, and relational dynamics—into visible representations that should be understood as **relational artefacts**, rather than fixed or rigid entities (See Box 1). Their uses and impacts are deeply influenced by the narratives and framings that accompany them, which shape how they are interpreted and applied.

Box 1. Maps as relational artefacts

In the Philippines, the Tau-Buhid peoples as well as other Indigenous communities associate maps with a familiar object that the map looks like. For example, when presented with a map the Philippine's National Commission on Indigenous People had made for them, they make comments among themselves, such as, "Doesn't it look like a tamaraw (*Bubalus mindorensis*)?" or "Hey, it looks like Fufuama X (an elder who died)!" or "It looks like a bird," and so on. The object in one's mind as associated with the map is not personal, as others present also agree with the one who first noticed the image. Other members of the community may even add descriptions like "Yes, it looks like a tamaraw, there is the horn, a V-shaped horn (a prominent feature of the tamaraw)." These objects associated with the map reinforce respect for the object; the tamaraws are even more protected by the Tau-Buhid.

An image that appears, or that they interpret to appear on the map, could even evoke feelings, such as "I think it is angry, or happy... can you see it?" When an angry emotion is seen, the Tau-Buhid peoples refuse participation in what the map is intended for. In another case, when an NGO presented a map of Indigenous plant locations, an elder said, "It is angry". The community did not support the NGO's project, and it was later found that the map indicated the sacred name of a mountain, which the community considers a profanation.

As such, maps are relational artefacts since they connect with the people whose lands are being mapped. The relation exists through the cultural value that people associate with an object they see depicted in the map, and these images are part of an entire cosmological assemblage of the Indigenous communities' lifeworld.

Source: Rosales, Christian. Beyond cultural issues: Representational authority and community-negotiated consent among the Iraya and the Tau-Buhid in Occidental Mindoro, (forthcoming, *Agham-Tao*, Journal of the Anthropological Association of the Philippines)

The case for a global map

Global maps are powerful tools for connecting disparate processes in different places, revealing their shared causes and impacts. They provide a unique opportunity to highlight common challenges across diverse parts of the world – such as extractive and industrial development pressures and contravention of rights and tenure. By illustrating the interconnectedness of these patterns at large scales, global maps help illuminate common struggles and bring clarity to Indigenous issues that can shape global environmental research and policy agendas.

Further, the political fora where Indigenous issues are negotiated at the global level (UN, multilateral organisations) still draw extensively on maps, quantitative data, and statistics. This reliance underscores the need for global maps. Global advocacy for Indigenous Peoples is likely to benefit from improved maps (i.e. maps which are ethical, more complete, and accurate), since these maps encourage global institutions to increase attention and resources on the issues affecting these communities. These global maps, accompanied by conditions for use, can thus be used to inform policy and change narratives at the global level.

The IPL map highlighted the importance and contributions of Indigenous Peoples, particularly in international fora and environmental agendas. It allowed for the production of a plethora of scientific studies that have quantified the importance and contributions of Indigenous custodianship, and the pressures and potential threats to Indigenous Peoples' lands (see Table 1). Importantly, it supported the production of new narratives about the vital roles of, and governance by, Indigenous Peoples in biodiversity conservation and climate change mitigation. In some countries, the IPL map was one of the few sources that showed the locations and extent of Indigenous Peoples' lands, helping to highlight gaps at national and regional levels.

The vital roles and contributions of Indigenous Peoples to biodiversity conservation are now widely recognised and embraced within both international policy frameworks and scholarly discourse, although there is still scope for improvement. The opportunity should now be taken to move beyond the narrow narrative that confines their contributions to the realms of biodiversity and climate. It is time to envision new global maps paired with a transformative narrative—one that celebrates the richness and full spectrum of the diversity of Indigenous Peoples. This includes the revitalisation and strengthening of their traditional identities and cultures, acknowledging their intrinsic values beyond mere service to advance global environmental agendas and the safeguarding of global public interests.

Positive narratives of Indigenous Peoples could focus on the impacts that their knowledge systems, practices, and worldviews have on the world, highlighting them as dynamic forces for societal transformation. These new narratives would centre the social and cultural fabric through which environmental, economic, and political issues are intertwined. Indigenous and customary territories and lands are not always related to in ways that might fit with external definitions of conservation, yet they can still maintain significant biodiversity. Hence, it may be less important to focus on the type of land use, than to carefully consider the qualities of the relationships that Indigenous Peoples have with land, and how different governance and management systems may constrain or support those relationships. An example of this is how bringing revitalisation and revival of traditional customary identities for youths into different social programmes, like drug rehabilitation, could potentially allow the re-forging of personal connections to land and country, with attendant benefits for conservation goals (potential initiative by Building Initiatives in Indigenous Heritage (BiiH) based in Sarawak, Malaysia).

Table 1. List of papers that have used the Indigenous Peoples' Lands map (Garnett et al. 2018. A spatial overview of the global importance of Indigenous lands for conservation. *Nature Sustainability,* **1**:369-374. https://www.nature.com/articles/s41893-018-0100-6) for spatial analysis (Web of Science, accessed 5th June 2024)

No.	Authors	Year	Title	Journal	DOI
1	Dinerstein et al.	2020	A "global safety net" to reverse biodiversity loss and stabilize earth's climate	*Science Advances*	https://www.science.org/doi/10.1126/sciadv.abb2824
2	Fa et al.	2020	Importance of indigenous peoples' lands for the conservation of intact forest landscapes	*Frontiers in Ecology and the Environment*	https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2148
3	Leijten et al.	2020	Which forests could be protected by corporate zero deforestation commitments? A spatial assessment	*Environmental Research Letters*	https://iopscience.iop.org/article/10.1088/1748-9326/ab8158/meta
4	Owen et al.	2020	Catastrophic tailings dam failures and disaster risk disclosure	*International Journal of Disaster Risk Reduction*	https://doi.org/10.1016/j.ijdrr.2019.101361
5	O'Bryan et al.	2021	The importance of indigenous peoples' lands for the conservation of terrestrial mammals	*Conservation Biology*	https://conbio.onlinelibrary.wiley.com/doi/10.1111/cobi.13620
6	Yang et al.	2021	Risks to global biodiversity and indigenous lands from china's overseas development finance	*Nature Ecology & Evolution*	https://www.nature.com/articles/s41559-021-01541-w#citeas
7	Estrada et al.	2022	Global importance of indigenous peoples, their lands, and knowledge systems for saving the world's primates from extinction	*Science Advances*	https://www.science.org/doi/10.1126/sciadv.abn2927
8	Torres-Romero et al.	2022	Impact of the Anthropocene on the status of the world's small carnivores: A global macroecological	*Journal of Biogeography*	https://onlinelibrary.wiley.com/doi/abs/10.1111/jbi.14357

			perspective		
9	Noon et al.	2022	Mapping the irrecoverable carbon in earth's ecosystems	*Nature Sustainability*	https://www.nature.com/articles/s41893-021-00803-6
10	Owen et al.	2022	Fast track to failure? Energy transition minerals and the future of consultation and consent	*Energy Research & Social Science*	https://www.sciencedirect.com/science/article/pii/S2214629622001694
11	Sze et al.	2022	Reduced deforestation and degradation in indigenous lands pan-tropically	*Nature Sustainability*	https://www.nature.com/articles/s41893-021-00815-2
12	Sze et al.	2022	Indigenous lands in protected areas have high forest integrity across the tropics	*Current Biology*	https://www.cell.com/current-biology/fulltext/S0960-9822(22)01540-8
13	Beattie et al.	2023	Even after armed conflict, the environmental quality of indigenous peoples' lands in biodiversity hotspots surpasses that of non-indigenous lands	*Biological Conservation*	https://www.sciencedirect.com/science/article/pii/S0006320723003890
14	Buchadas et al.	2023	Tropical dry woodland loss occurs disproportionately in areas of highest conservation value	*Global Change Biology*	https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.16832
15	Kennedy et al.	2023	Indigenous peoples' lands are threatened by industrial development; conversion risk assessment reveals need to support indigenous stewardship	*One Earth*	https://www.sciencedirect.com/science/article/pii/S2590332223003408
16	Owen et al.	2023	Energy transition minerals and their intersection with land-connected peoples	*Nature Sustainability*	https://www.nature.com/articles/s41893-022-00994-6
17	Pratzer et al.	2023	Agricultural intensification, indigenous stewardship and land sparing in tropical dry forests	*Nature Sustainability*	https://www.nature.com/articles/s41893-023-01073-0
18	Scheidel et al.	2023	Global impacts of extractive and industrial development projects on Indigenous Peoples’	*Science Advances*	https://www.science.org/doi/10.1126/

			lifeways, lands, and rights		sciadv.ade9557
19	Torres-Romero et al.	2023	Jaguar conservation in the american continent: the role of protected landscape and human-impacted biomes	*Revista De Biología Tropical*	https://doi.org/10.15517/rev.biol.trop..v71i1.50507
20	Torres-Romero et al.	2023	Human-modified landscapes driving the global primate extinction crisis	*Global Change Biology*	https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.16902
21	Zhu et al.	2023	Comparable biophysical and biogeochemical feedbacks on warming from tropical moist forest degradation	*Nature Geoscience*	https://www.nature.com/articles/s41561-023-01137-y
22	Simkins et al.	2024	Rates of tree cover loss in key biodiversity areas on indigenous peoples' lands	*Conservation Biology*	https://doi.org/10.1111/cobi.14195
23	Sze et al.	2024	Indigenous peoples' lands are critical for safeguarding vertebrate diversity across the tropics	*Global Change Biology*	https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.16981
24	Seebens et al.	2024	Biological invasions on Indigenous peoples’ lands	*Nature Sustainability*	https://doi.org/10.1038/s41893-024-01361-3

Problems with a global map

Maps make statements about bounded spaces and claims linked to those spaces, but this goal may not be appropriate where the livelihoods and activities of Indigenous Peoples are not tied to specific and bounded areas (e.g., transhumance, pastoralism, shifting cultivation, mariculture). These communities often have high mobility but also rely on flexible practices and social relations that support these practices. Due to this, ways of relating to land might not be portrayable in the form of maps, and/or have dynamic boundaries, and overlapping land uses. Place-use also can vary temporally, sometimes over long time-scales (e.g. in shifting cultivation, a place might be used for a few years, then left fallow for decades, but would still be considered within customary use).

Thus, mainstream narratives about land relations like "settlement", "place", and "land or resource ownership" may not align with the lived realities of Indigenous Peoples. These differences can complicate efforts to create a unified conceptual framework that adequately captures their relationships to time and space, such as through the representation of maps.

Maps are particularly problematic as they are taken to be temporally static and immutable. This poses an issue from two perspectives:

1. The IPL map was produced in 2018, and does not reflect current realities on the ground where restitutions of Indigenous Peoples' lands by State actors are happening. Taking maps as static and permanent might foreclose possible future movements with potential for land restitution/reclamation, such as those resulting from on-going negotiations with States, or from these communities winning court cases.
2. As a legal term in international human rights law, Indigeneity can be claimed or rejected over time, and rights afforded by states might also not be settled. Traditional and customary communities who have not chosen to self-identify as Indigenous may thus be missed out from the IPL map. For example, across the Pacific islands, people had not previously identified as Indigenous, but this form of identification is becoming more popular. The same is true in Brazil. See the next section for more.

Consequently, because maps do not reflect the temporal and spatial fluidity and dynamism of Indigenous Peoples' territories and lands, they could be interpreted as assuming that rights and identity are settled when they are, in fact, contested. This highlights the need for practices that work to acknowledge the history of Indigenous territories, such as Native Land Digital has done.

Specifically, naming the IPL map as such is arguably misleading, since it gives the impression of having been legitimised by all Indigenous Peoples. It is also acknowledged to be incomplete and relies on sources of variable quality (ranging from state maps of Indigenous territories to modelled distributions of Batwa peoples in the Central African rainforests), and at the moment, the IPL map lacks a degree of uncertainty about the variable data quality which would enhance information available to users.

Given the importance of situating maps within their appropriate contexts, without disclaimers, caveats, and guidelines for use and interpretation, having no map is better than a bad one that is inaccurate or incomplete. Yet although the IPL map was produced with caveats, disclaimers, and conditions for use, how others use and interpret it are beyond the mapmakers' control. There are potential risks that private sector actors, state governments, and others with ill-intention may misuse the IPL map; for example, using it to identify extractive opportunities for exploiting resources, or producing narratives counter to the rights of Indigenous Peoples.

Recent requests to use the IPL map that have been received (and denied) include commercial operations to ensure corporate compliance with environmental and social safeguarding regulations. Given increasing private sector commitments to rights-based approaches, more requests of this nature can be expected. Even if there is no official recognition of Indigenous Peoples' lands, knowing where they are could help entities planning to work in their lands engage with them from the beginning and be sensitive to the community's concerns. However, there are also very real possibilities that corporations will not work in good faith to respect the rights of Indigenous Peoples, and sharing knowledge of the community's territories could result in their dispossession. This raises the question of strengthening the conditions of use and the process for data sharing.

Indigenous Peoples, International Law, and tensions with states

The intention behind the IPL map was to acknowledge and strengthen the rights to self-determination for Indigenous Peoples. Within the framework of the United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP), distinctive groups (viewed as distinct by other communities) within independent states are accorded particular rights that are robustly articulated in the UNDRIP. These rights include the rights to self-identify as Indigenous Peoples and to self-determination. As such, this self-identification is not immutable. For example, across the Pacific islands, people had refused the term Indigenous earlier because of its marginalised connotations. Although they have more recently started to assert their links and connections as Indigenous Peoples, their use of the platform is yet to gain significant international traction.

In some cases, the rights-based framework of UNDRIP could be seen as a diminishment. In post-colonial countries where customary systems of land and sea tenure are constitutionally enshrined, such as Papua New Guinea, the Solomon Islands, or Vanuatu, "rights" or "title" to land diminishes the self-determination of Peoples by encompassing them within states. The focus on mapping lands, which centre on states and formal laws, instead of territories, as defined by Indigenous Peoples, could inflame complexities around what is being mapped.

Since the intention behind a global map is to foreground Indigenous Peoples and their spiritual, cultural, and livelihood uses of their territories and lands, geographical and geopolitical state boundaries on the map are not always necessary. State boundaries can be used as a tool to report on results and enhance their relevance in various settings, but should not be provided as a given baseline, given that they often represent control and coercion. By drawing state boundaries on a map relating to Indigenous Peoples, we centre state approval and power, rather than Indigenous Peoples' relationships and the values they protect on Earth.

Nonetheless, it is risky to ignore the existence and power of states when tackling Indigenous Peoples' rights and needs. A state may never, or may delay to recognise Indigenous Peoples as such, but since the right to self-identify is inherent, it does not depend on recognition by a state. Nonetheless, enjoyment or implementation of other rights as Indigenous Peoples still depend on recognition by the state in which they live. The International Courts thus serve as a recourse to rights for Indigenous Peoples. In Africa, the African Commission on Human and Peoples' Rights has affirmed the recognition that many forest peoples and pastoralists are Indigenous Peoples (ACHPR and IWGIA, 2005). In the case of Shell and the Ogoni People in Nigeria, the Ogoni were recognised as a People within the state (Senewo, 2015).

There are thus difficulties and compromises that are required to produce any map relating to Indigenous Peoples, since international agreements (such as the CBD and UNFCCC) are mediated through the state and will require working with states. Indigenous Peoples' territories and land recognition by states are vital for the wellbeing and future of Indigenous Peoples. In some places, such as Sarawak, Malaysia, the state and national government recognise Indigenous Peoples, and efforts are underway to map Indigenous and customary lands. Yet the state's purposes can be dubious, since it might be done so the state can open up a carbon market, and this process might work to co-opt Indigenous Peoples' leaders.

Tensions between states and Indigenous Peoples are further played out in terms of the law. Customary rights and laws are recognised by many states, and legal pluralism is a reality; for example, in the African context, many governments are hesitant about Indigenous rights but are more accepting of language around the recognition of "customary" rights. The African Charter on Human and Peoples' Rights is part of the progress from individual to collective rights that are more aligned with Indigenous Peoples' values.

However, customary laws are living, growing, and changing, and cannot be easily locked into state systems. The impact of formal laws on customary law does not always entail respect for the latter; even while looking for formal legal recognition, Indigenous Peoples still need to be wary of its consequences. Further, even when Indigenous Peoples' rights are enshrined constitutionally, judicial reinterpretations can undermine their rights (see Box 2).

There is thus a need to consider the relationships with states versus the space for self-determination by Indigenous Peoples. It is essential to distinguish between Indigenous claims and state positions, and avoid maps that could lead to further dispossession of Indigenous Peoples by not representing them cartographically. The value of a global map relating to Indigenous Peoples comes down to the objectives of the map and what it is used for; these should be specified when creating the map, with details on whose lands and/or waters are being considered.

Box 2. **Dangers of judicial reinterpretation of existing legislation**

In Brazil, there is an ongoing political push that threatens to undermine Indigenous land rights through a judicial reinterpretation of existing legislation. The current National Constitution was enacted in 1988, which guarantees Indigenous Peoples legal recognition of their ancestral territories (Constituição da República Federativa do Brasil 1988 art. 231). The State has the obligation to title them as Indigenous Lands and maps of titled Indigenous Lands should, ideally, reflect their traditional territories. There are currently 631 Indigenous territories demarcated to more than 270 Indigenous Peoples in Brazil.

In 2009, there was a dispute within the Indigenous territory of Raposa/Serra do Sol, in Roraima state of Northern Amazon, between the Indigenous community and rice croppers. In this process, the Advocacia Geral da União (the institution the represents the Brazilian state judicially and extrajudicially and advises the executive power of the state) used Indigenous occupation in 1988 (as opposed to traditional territory) to determine the spatial extent of and delimit the boundaries of the Indigenous territory in dispute. This was later used in other cases of land dispute between Indigenous Peoples and private and/or state interest.

Earlier in 2024, legislators in the Chamber of Deputies approved a Draft Bill 490/2007 that would limit Indigenous Peoples' title to their ancestral territory if they were not physically occupied prior to the day the Brazilian Constitution came into effect in 1988, which would affect many Indigenous Peoples. Although the Bill has been passed, it is still pending a final decision from the Supreme Federal Court of Brazil due to an ongoing lawsuit regarding its legality.

This reinterpretation will affect already-titled Indigenous Lands, as well as Indigenous Peoples whose territories have not been titled yet; it has been estimated that there are more than 500 requests for titling and over 158 studies currently being conducted. This judicial reinterpretation thus risks excluding Indigenous Peoples from their customary territories, particularly those from which they had been forcibly displaced.

Source: Zavardino (2024) https://larc.cardozo.yu.edu/ciclr-online/97/ and https://www.gov.br/funai/pt-br/atuacao/terras-indigenas/geoprocessamento-e-mapas/painel-terras-indigenas

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Potential improvements and possible future maps

Reflexivity is paramount in map-making endeavours. The assumptions, decisions, definitions, and limitations underlying maps need to be continually re-evaluated. It is crucial that mapping efforts do not contribute to decontextualising, co-opting, or overwriting the epistemologies of Indigenous Peoples. The benefits of having a map (no matter how incomplete or inaccurate it is) should be considered in relation to the dangers of an absence of a map, and this cost-benefit analysis should be grounded on the highest ethical and social standards, as well as on continuing improvements and critical scrutiny of the data sources underlying the map.

It is unlikely that an increasingly accurate global IPL map based on the previous approach of aggregated polygons of territory would address the concerns raised above. Instead, what accuracy means, and for whom a more accurate map is required, would have to be carefully defined first. Rather than a more accurate map delimiting Indigenous territories, a map that demonstrates relations to land may be a better tool for expressing Indigenous Peoples' narratives, priorities, and lived realities (taking into account the needs of confidentiality e.g., sacred sites, etc.). This could be occurrence of customary law, use, and recognition, where Peoples have close and collective relationship with ancestral lands and/or waters, places of historical, cultural, spiritual, and livelihood significance that Indigenous Peoples attach to

their territory and natural resources, and practices of Indigenous and traditional land management, land-use, and livelihoods, particularly those that are stigmatised like shifting agriculture and periodic burning practices.

This could set up a more open, if not more genuine, invitation for Indigenous Peoples' involvement in mapping. It would involve supporting the capacities of Indigenous Peoples' to fully understand mapping tools to autonomously use them as they want. More specifically, a focus on their activities, livelihoods, and relationships (including contributions to environment and society) distinct from considerations around claimed and bounded space may help mitigate the perception of land as a limited resource requiring the allocation of exclusive rights. Instead of narrowly showing who has claims to what space, this kind of mapping could instead focus on telling the story of who is relating to the land (and neighbouring communities) and in what way, elevating the roles of and attention to Indigenous Peoples beyond biodiversity conservation and climate agendas.

Although it would be a mammoth effort, an autonomously produced global map of Indigenous territories that transcends state geopolitical boundaries could reveal a global mosaic of diverse societies connected by values centring relationship, reciprocity within place, and kinship among all beings that would help to build a new narrative. This would guide analysis for the contributions of Indigenous Peoples not just to biodiversity conservation, climate, and planetary health, but also to social-cultural vitality, economic and societal stability, and resilience.

Other potential future directions:

- Overlaying and understanding the difference between the IPL map and other Indigenous land mapping initiatives, such as LandMark and Native Land Digital
- Testing the impact of changing resolution and projection on the visibility of smaller territories that are distorted by current projection
- Shifting the perspective and orientation from the standard way of presenting maps
- Exploring collaborations with the ILO and the three Indigenous Peoples mandates, namely the UN Permanent Forum on Indigenous Issues, the Expert Mechanism on the Rights of Indigenous Peoples, and the UN Special Rapporteur on the Rights of Indigenous Peoples, which hold significant amount of data/indicators on Indigenous Peoples
- Including point data to represent other communities/lands that are excluded and for which there is no polygon data
- Exploring urban Indigenous peoples' connection to place, in order to understand how alienations of modernity are negotiated and transferred through Indigenous connection to place
- Mapping Indigenous Peoples' use of coastal and marine resources (e.g. mussel farming, small scale fisheries), in order to fill the gap in the literature on the marine perspective
- Mapping communities with self-determination and close and collective relationships with their territories (terrestrial or marine), in order to examine the relationship between self-determination of Peoples and customary territories

Moving forward

There are several paths forward that can be taken. One would be to not do anything. Another would be to update the IPL map with more recent data, potentially including territories under customary management of peoples who may or may not identify as Indigenous (e.g. some pastoral communities who are not recognised by the Bangladeshi government as Indigenous, or in other areas of Southeast Asia where people are not accepted by governments as Indigenous but still retain lands under customary management), and to analyse the data sources for their level of uncertainty.

A third option would be to build maps from the ground-up, with validation from Indigenous Peoples, to identify ancestral lands and/or waters that are collectively held and governed, then forming subregional and regional networks that eventually lead to a global map. This would require, first and foremost, that Indigenous Peoples are empowered to take on mapping efforts in their own hands. Such a detailed global map, if all-inclusive, would benefit Indigenous and traditional communities and support organisations in advocating for ancestral titles and land rights, though it is unlikely to be achievable.

In the longer-term, with adequate financial, infrastructural, and personnel support, it could be possible to have a dynamic database, building on the third option outlined above that provides regular updates (similar to the monthly updates for the World Database of Protected Areas). This database could also include elements of Indigenous and traditional knowledge (given Free, Prior, and Informed Consent, that includes full information and consultation among and from the peoples and communities that own and created the knowledge and information, and with appropriate conditions for use).

Final points

Maps are not only bound to the geography of tenure and territory – the power of global maps (or mapping analyses) can transcend the conceptual limitations of real estate and legal titles, if framed to reveal the contributions of self-determination of Indigenous Peoples to common values, be they biodiversity or human dignity.

The ‘goodness’ and ‘badness’ of maps is context or issue dependent; the intersection of positionality and power of the map creators impacts the ‘goodness’ or ‘badness’ of any given map. The best intentions alone are insufficient; in negotiating the politics of global map creation, it is important to consider who is making the maps, and for what purpose. Further, it is critical to consider who the people within communities are that come to represent Indigenous Peoples, being aware of the politics of representation while balancing the importance of representatives as mediators and culture-power brokers. A global map relating

to Indigenous Peoples must support and strengthen their rights in and of themselves, and not just in service of biodiversity conservation and other goals.

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