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Creating a Global Map Base of Indigenous Peoples and Local Community Places and People

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Abstract

The security that the world’s forest-dwelling people have over their collective lands and resources are of increasing importance in the face of global challenges such as climate change, loss of biodiversity and land degradation. As areas occupied by Indigenous Peoples and local communities (IPLC) are increasingly threatened, the need to clarify rights becomes more urgent. Yet, progress is incomplete and held back by a lack of knowledge of where and how IPLCs occupy land. Building on the success of the LandMark initiative to map known IPLC land rights, and Prindex, a joint initiative of Global Land Alliance and ODI to measure perceived tenure security, the next major effort is the development of a global participatory IPLC map and database platform – “map base” – with the transformative potential to map all IPLC rights to land and resources globally. This document details the prospective development of the map base platform and methodology for measuring tenure security. Key advances include the platform’s scalability, focus on community participation, predictive approaches to identifying lands likely under IPLC occupation, and the incorporation of spatially-referenced perceived tenure security data. The result will be a unique and robust platform that will fill key knowledge gaps in the urgent discussions around effective approaches to protecting forest areas and supporting the people who actively manage and depend on these ecosystems.

Keywords: Sustainable forest management; Adaptive and integrated management; Monitoring and data collection; Landscape management; Governance

Introduction, scope and main objectives

The world’s forests and forest-dwelling peoples currently face unprecedented threats and opportunities. The most recent IPCC report (2021)ⁱ shows that climate change threatens critical ecosystems and presents dire challenges for the world’s resource poor, many of whom depend on forests. Accompanying these trends are vast opportunities to mitigate emissions, sustain and restore ecosystems and grow sustainable livelihoods by encouraging land management and forestry activities proven to achieve conservation objectives.

Globally, over 1.6 billion Indigenous Peoples, local communities and Afro-descendants (collectively IPLC¹) are estimated to live in areas important to biodiversity conservationⁱⁱ, and at least a quarter of global land area is traditionally managed, used or occupied by IPLCsⁱⁱⁱ. These collectively managed areas, which include forests, agricultural areas and fisheries, are often not recognized by governments despite the existence of, in many cases, customary and traditional governance systems that have functioned for centuries. This puts these lands and cultures at risk from external interests, a risk that

¹ For this paper, the acronym IPLC is used to refer collectively to the Indigenous Peoples, local communities and Afro-descendants present in the context described.

accelerates with increasing investment in rural areas. At the same time, an alignment of IPLC land and forest management with global conservation and climate priorities has been recognized in recent years, and global programs (such as REDD+) are increasingly promoting expanded recognition of their rights. Studies have highlighted the role of Indigenous Peoples in combatting climate change^{iv}, including engagement in decision-making at the local and global levels^v. In the Amazon, lands held by IPs and in protected areas release far less carbon than outside lands^{vi}, and globally, indigenous lands account for 36 percent of remaining intact forest landscapes^{vii}. Research has demonstrated that enhanced forest tenure security can reduce emissions^{viii,ix} and deforestation^{x,xi}, while being relatively cost-effective to implement^{xii}. Despite a growing recognition of the conservation and livelihood benefits of IPLC collective tenure, the knowledge gaps of where these lands are and who rightfully owns them is vast and a major obstacle to the rapid scaling of investment, action and policymaking needed to secure these rights.

This note presents a concept to create a complete map of IPLC lands and an associated database of the location and status of IPLC places and people at the global level. This “map base” will consist of a platform for the spatially-referenced tenure status of global lands, including forests, and for key social and environmental variables relevant to IPLCs. Importantly, and uniquely, the platform will synergize advancements in predictive modeling, tested approaches to measure perceived tenure and participatory data entry by IPLCs to grow and elevate the voice of IPLC stakeholders globally and address a critical gap in available data to advance IPLC rights recognition.

Methodology/approach

The proposed infrastructure consists of: **i) the data platform and suite of technical tools;** and, **ii) methodological toolkit for measuring tenure security.** The technical platform builds on the LandMark initiative’s progress to date, and includes an expanded map and database that facilitates entry of spatial and resource data by IPLCs and supporting partners. To achieve the objective of locating and mapping all IPLC lands globally, the map base platform will utilize AI-assisted predictive software under development to identify lands indicative of IPLC occupation/ownership via social and environmental proxies. The next major component builds on the successes and experience of Prindex at measuring perceived tenure security in 140 countries. Perceived tenure security is a strong indicator of actual behaviors related to land and property decisions and will enable the spatial analysis of tenure and key environmental and social outcomes and model trends based on direct measurements.

The following activities are parallel in timing, as data collection/input and analyses are iterative and ongoing.

1. Initial population of map base as a decentralized platform with LandMark data and existing spatially-referenced land rights databases (i.e., respective government spatial data sources, if available);
2. Development of remote data capture and visualization interface, facilitating input from communities. Through this user-accessible process, communities and their supporting partners will be able to register indicative claims to spatial areas and resources. This approach is

community-led and participatory and will utilize in its development lessons from existing successful user-interfaces. In addition, communities will be able to spatially reference and document multiple dimensions of community use and management, from locally important resources, special landscape features (such as sacred sites), ephemeral resources (i.e., edible seeds or water sources) and the full diversity of local uses of the land. In this way, communities can use the map base platform in parallel with community-led land use planning processes, both for internal governance and for external partners such as government institutions regulating land use;

3. Development of AI-assisted tools for predicting IPLC land occupation & use, for modelling land use change and assisting land use planning;
4. Engagement with global network of partners to work directly with IPLC communities and supporting organizations to promote the recording of land and resource rights, perceptions of security, and status of rights, plans and vulnerabilities via the map base. There will be a significant and important element of “ground-truthing” predicted/indicative IPLC lands and facilitating IPLC documentation in the map base of land and resources;
5. Development, piloting and deployment of methodology for gathering individual community data on status of rights, perceived tenure security, land use and community development plans for collective IPLC lands. This will be based on and expansion of the Prindex global approach to widespread global land indicators. In key areas collect longitudinal data; and,
6. Relate spatially-referenced forest tenure (perceived, de facto and de jure) to environmental and social outcomes for targeted decision-making by donors, policymakers, development agencies, environmental managers and other stakeholders.

Fundamental to the map base platform will be community-driven recording of land and resource claims and the measuring of individual and community perceptions of tenure security. Key values built into every phase of the project include:

- **Participation:** The platform must be participatory in nature to achieve complete global IPLC land and rights coverage. This necessarily involves a significant effort for local partner organizations to support IPLC communities and project partners with technical and operational aspects.
- **Utilize global norms and learning:** Widely accepted norms, such as the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) General Principles and Principles of Implementation, can provide functional guidance to ensure responsible actions in line with community objectives and global norms.

Results

The map base platform draws on the experience and capacities of several global partners (see Table 1). For example, the LandMark initiative offers the most comprehensive global database of existing recorded rights and is leading the development of predictive tools to facilitate the next wave of rights recognition. Prindex partners have led the push to more directly focus on IPLC landscapes, executing several key projects that provide the basis for adapting the methodology to target to

forested contexts (see Table 2). Project partners have developed key analytical frameworks, assessment tools and executed national tenure security opportunity assessments. Recently, a pilot case study of forest-dwelling community perceived tenure security was carried out in Colombia (see Table 2 for details). These contributions provide a theoretical and experiential foundation for the development of the map base platform and measurements of tenure security.

Table 1: Global partners

Partner:
Global Land Alliance
ODI
LandMark (WRI)
International Land Coalition (ILC)
Global Alliance of Territorial Communities
Rights and Resources Initiative
Tenure Facility

Table 2: Recent pilots and frameworks carried out by partners

Project Name and Dates	Partners	Applicable Lessons Learned:
Measuring Tenure Security of Collective Communities in Colombia – March 2020-September 2021	<ul style="list-style-type: none"> • Observatory of Ethnic and Peasants Territories of the Universidad Javeriana de Pontificia (PUJ) • International Land Coalition (ILC) • Prindex • Donor: International Fund for Agricultural Development (IFAD) 	<ul style="list-style-type: none"> • Case study-scale measurement of perceived tenure security, carried out in several Indigenous and afro-descendant communities. • Measured perceived tenure security over natural resources and homes.
Opportunity Assessment to Strengthen Collective Tenure Rights in FCPF Carbon Fund Countries (in press)	<ul style="list-style-type: none"> • GLA • Rights and Resources Initiative (RRI) • The World Bank 	<ul style="list-style-type: none"> • Study of key opportunities to advance, strengthen and improve benefits from collective IPLC forest tenure rights in 18 Carbon Fund and FCPF countries.
Securing Forest Tenure Rights for Rural Development - Forest Tenure Assessment Tool (FTAT) – 2020	GLA (technical advisor) World Bank and Program on Forests (PROFOR)	<ul style="list-style-type: none"> • Pilot experience yielded policy roadmaps for advancing collective forest tenure in the participating contexts and key lessons-learned for adapting a highly participatory methodology to varied national and sub-national contexts. • As a national-stakeholder participation process, the FTAT can usefully provide content-area questions for interview questions.
Securing Forest Tenure Rights for Rural Development – Analytical Framework - 2019	GLA (technical advisor) World Bank and Program on Forests (PROFOR)	<ul style="list-style-type: none"> • Consolidates experience and evidence with community-based tenure security to articulate key elements of tenure security.

Discussion

This approach contributes three major values that expand rights recognition and leverage spatial data:

1. **Rapidly scalable global platform for community engagement via decentralized, participatory data capture and mapping:** The urgency and scale of environmental and social issues connected to IPLC lands is straining the limited capacity of most national governments to update and maintain spatial rights data, if recorded publicly at all. Existing processes of community land and resource recognition and regularization, while critical to the advancement of IPLC rights, are often ad hoc, expensive and cannot facilitate rapid documentation of IPLC land resource claims at the scale needed. The map base platform will allow communities to assert claims to lands traditionally and customarily occupied and used that may not be recorded elsewhere, and facilitate verification of territorial and resource maps registered through existing mechanisms (i.e., formal surveys, land use plans, etc.).

While the platform is revolutionary from the outset, the success of map base depends on community-engagement that relies on partner organizations with global IPLC networks. Maps will be descriptive, analytical and publicly accessible, and community maps will be editable and managed by the communities themselves. In some cases, these maps may fulfil crucial evidentiary requirements of formal registration processes, and by spatially referencing traditional lands and resources communities will possess a stronger position in dialogues with governments, investors, donors and other outside interests. Given that a significant proportion of all IPLC lands are undocumented/unrecognized, the map base platform has the transformative potential for the initial public documentation of tens of millions of hectares of lands of critical importance.

2. **Predictive approaches push outward to unknown/undocumented lands and landscape-scale processes:** AI-advancements can build on the successes of existing IPLC land claim data by utilizing machine-learning approaches to globally predict and identify areas of currently undocumented IPLC occupation. This can enable efforts to engage with and document those communities and lands before they are threatened by external actors, and better approximate the entire universe of IPLC lands. Further, these technical advances, in synergy with other initiatives such as WRI's Land and Carbon Lab, can support identification of priority areas to recognize and strengthen tenure security based on relevant threats and values, and detect encroachment and other processes of deforestation/degradation in real-time, potentially supporting both government and community tenure enforcement mechanisms.
3. **Measuring perceived tenure security of IPLC land users:** Within the expanded universe of claimed, indicative and formally-recognized IPLC lands, qualitative data will be measured on perceived tenure. A tailored methodology will be developed to enable measurements of perceived tenure security that are spatially-referenced to rights and resource values from the map base platform. This facilitates incorporation of behavioral predictors with spatial landscape analysis to model environmental trends and possible management approaches. High resolution measurements of perceived tenure security (at individual level) will enable teasing out of intercommunity dynamics as related to tenure and resource use.

Conclusions/ wider implications of findings

The described approach will build out a data platform and toolkit with transformative implications for IPLC rights. The map base platform will feature remote data entry and visualization to enable community-led recording of land claims and facilitate multi-scale land use planning. This, supported by cutting edge predictive mapping of indicative IPLC lands, will make possible the first globally comprehensive map and database of IPLC lands and resources – both formally recognized and community-claimed. In addition, application of the proven methodological approach for measuring perceived tenure security will provide tenure data that will be spatially referenced and supportive of real-time monitoring and analysis of key social and environmental trends and conditions. This platform and tool leverage the knowledge, values and capacities of IPLCs with the resources of global partners. By elevating the voices of IPLCs everywhere, map base offers a critical tool to support effective forest and ecosystem management for conservation, climate and community benefits.

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^x Baranganath, K., & E. Bayi. 2020. Collective property rights reduce deforestation in the Brazilian Amazon. *PNAS* 117(34) 20495-20502. <https://doi.org/10.1073/pnas.1917874117>. Accessed at <https://www.pnas.org/content/117/34/20495>

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