

The invisible map: Community tenure rights

Deborah Barry¹ and Ruth Meinzen-Dick²

Contributing chapter in the book:

The Social Life of Forests

University of Chicago Press
Forthcoming 2010

CIFOR

CAPRI

RRI

¹ Senior Research Associate, Governance and Forest Program, Center for International Forestry Research, CIFOR @ Rights and Resources Group, Washington, DC

² Senior Research Fellow, International Food Policy Research Institute and Coordinator, CGIAR Systemwide Program on Collective Action and Property Rights (CAPRI), Washington, DC.

ABSTRACT

Over the last 20 years, a little known trend of land tenure reforms has swept across the world's southern forests, resulting in the official transfer of tenure rights to communities of over 250 million hectares of forestlands. This so-called 'forest reform' (not agrarian reform) is transferring a broad set or bundle of rights to indigenous peoples, local communities and groups to access forestlands and resources, providing initial opportunity for improving the livelihoods of poor forest-dependant communities. Communal titles are the most widespread, with a wide range of land use rights within the perimeters.

The definition of these rights, the marking of how and where they are held, who grants them, and who holds them are not straightforward under the 'classic' tenure system models. The range of land use rights from individual to common property use is obscured. Also, the tools for mapping these rights have been largely focused on land use mapping and kept in the hands of researchers and state agencies, seldom available for communities themselves to use as a way to clarify, share or negotiate their complex systems of rights with outsiders. Internal customary practice and de facto rules-of-the-game adhered to by local communities are also dynamic, changing during different seasons, with new leadership, and often interacting with new rules imposed by external regulations or market opportunities once tenure is granted.

The expansion of the tenure reform in Africa, Asia and Latin America coupled with the development of the visual mapping technology as part of that process, has posed significant demands on local communities to clarify the nature of their existing (customary, de facto) and desired (legally recognized) tenure rights. It highlights a growing need to represent these rights in order to both manage and defend them. Community mapping of land use has grown, but existing tools for gathering, organizing and presenting the rights related to land and resource use are scarce and insensitive to the complexity of practice.

This paper first presents a framework in which to consider how bundles of rights are distributed between the state, the collective, smaller groups and individuals within communal tenure systems. It then discusses how the framework has been turned into a tool for multi-purpose participatory research at the intra and inter community levels. It makes the case that the tool can help communities themselves give visibility to internal tenure systems 'within the perimeters' of their forestlands. Finally, the paper presents cases that demonstrate how the shifting boundaries among the categories of rights holders are influencing the security of tenure to common property resources.

BACKGROUND

Over the last 20 years, a little known trend of land tenure reforms has swept across the world's forests. In what has been classified as being between 79% (White and Martin, 2002) and 84% (FAO, 2006) public property under the formal ownership of the state, we now witness an official transfer of tenure rights to communities living in over 250 million hectares of forestlands (White and Martin, 2002; Sunderlin, et al. 2008). The result is that by 2001 22% of all forests were owned (14%) or held in reserve (8%) for communities (White and Martin, 2002). The trend continues, with the area of state ownership continuing to decline from 2002–2008 period, and with corresponding increases in the area of forests designated for use by communities and indigenous peoples, individuals and firms. (Sunderlin, et. al. 2008)

However, the process of this devolution is problematic, suffering from a tendency to overlook and/or exclude the rights and claims of local actors, often communities with existing systems of de facto or customary practices and self-regulations for access and use of resources (Sikor, 2006, Fitzpatrick DATE, Pacheco, et al., 2008). This is particularly true as these are not only land driven reforms but resource driven reforms in forest landscapes, where there are multiple existing resources and claimants. The predominantly indigenous land, and extractivist reserves, community and village forests and community concessions being granted legal rights of tenure, have differing patterns of resource dependence, some well established over time, with rights, rules and responsibilities for their use. Natural resource tenure is broader than land tenure.

When these local systems of resource rights are not considered, the reforms can be laying the grounds for further disenfranchisement of the poor and seeding conflict. Often unintentional, the process of forest tenure reform, land demarcation and titling changes the access, use and decision-making rights in ways that can profoundly affect people's livelihoods, governance structures and quality of life. Local participation in these reforms is a fundamental step, often overlooked during the implementation of even the most well-intentioned efforts.

On the positive side, the legal devolution of forest rights to ancestral or new forest dwellers has spurred the emergence and growth of participatory community land-use mapping (PLUM), used by human rights activists, development practitioners, ethnographers, geographers and even conservationists, helping to expand the opportunities for local communities themselves to participate (Herlihy and Knapp, 2003).

When done well, the exercise gives communities a common *spatial* framework – a map- that strengthens their understanding of how physical, social and economic factors interact (ILC, 2008). Community participatory maps are used for a wide range of purposes, but today, most technically assisted projects are used to produce land-use maps as the basis for establishing external boundaries or perimeters, and then deployed as an integral part of a legal procedure for acquiring land rights (ILC, 2008; van de Sandt and MacKinven, 2007), or tenure mapping. This bridging of the technological gap between the state and the local claimants has allowed the latter to take a huge step forward, in presenting or disputing land claims based on their de facto, customary or ancestral rights.

Land-use mapping reveals the bio-physical sphere, delineating distinct land and natural resource uses (agricultural, hunting, gathering, fishing, settlements, sometimes watersheds, tree groves, bird sanctuaries, etc.) often with cultural designations, such as burial grounds, sacred sites or other ceremonial uses. The spatial rendition of these activities serves as the basis for the negotiation of the extension and perimeters of the land to be demarcated and eventually titled.

Some of the leading practitioners of participatory community mapping have taken the exercise several steps further, using it as a tool for strengthening collective identity and action (Chapin, 2006; Colchester, 2007; Di Gessa, 2008) Others have evolved the land-use mapping into an internal tool for communities to deploy in their land and resource management and negotiation of changing rights, to ameliorate internal conflict between community groups and higher level authorities, or for hazard mitigation (PGIS, 2008; Chapin, 2005).

It appears that most of the significant effort for developing these mapping practices has been at this interface of the applied technology and local knowledge for spatial renditions of land use (Chapin, et al. 2005; Di Gessa, 2008; Poole, 2006). However, when the effort is oriented toward establishing legal tenure claims, in most cases the underlying system of local rights remains are lost, or rendered invisible in the negotiations. Spatial maps of boundaries are what are required to establish formal tenure rights: the perimeter. Spatial rendering of land-use can help stake out the coordinates, but system of rights behind them are forgotten when actual demarcation or titling takes place. Once demarcated or titled, externally crafted policies and regulations introduce new rules, often based on different tenure systems.

In many cases tenure reforms are based on Northern concepts of “ownership”, in which an individual or legal individual holds all bundles of rights over the land, and other users are not acknowledged. On the other hand, most forest tenure reforms do not turn over the ultimate right of alienation from the state to communities or individuals, and the state may even create additional rules that can crowd out local tenure systems.

The consequences are many, including the undesired: unfolding confusion, illegality, conflict or increasing poverty. (Fox et.al. 2008, Hale, 2005) The local institutions that develop, support, and enforce the rules governing resource use and distribution may either be ignored and bypassed, or made more rigid in order to be recognized by outsiders. Local disenfranchisement or increased tension is often the outcome, where empowerment or conflict resolution was the goal. Thus, the mapping of the systems of existing tenure rights becomes a key step in the process of conducting a reform (particularly a forest reform).

This paper describes and explores the conceptual framework and potential uses of a practical tool for the mapping tenure rights, understood as a “bundle of rights” (Schlager and Ostrom 1992; see also Alchian and Demsetz, 1972). The proposal is to develop a common conceptual framework and through a guided process of shaping it in the field with communities themselves, produce a practical tool for understanding and mapping tenure rights. The effort should be focussed on two basic purposes:

- to help communities complement and go beyond the spatial renditions of their land uses, clarifying the internal system of rights, rules-in-use and responsibilities, or noting where they do not exist
- (when they exist) give the systems visibility and credibility for negotiating with the state, any regulatory or normative framework, development project, or private investment being considered.

The conceptual framework that we call ‘Tenure Rights Mapping’ (see below) needs be honed through a process of practical application, where communities will be able to *map and present* their internal systems of rules and regulations that govern their rights in relation to their natural resources, in an easily understood form. Mapping interaction with external change would follow. We argue that a more complete understanding of the nature of these rights of access, use and decision-making is necessary to take this process forward, and that if well designed, ‘Tenure Rights Mapping’ could become highly complementary to participatory community land-use mapping as a tool for negotiating tenure reforms. This effort could prove especially valuable as the basis for the future of the tenure reforms in forests, where multiple forest resources are used by many groups and where real boundaries may not be not be fixed, but fluid and shifting.

Community Land Use Mapping and The Need For The Mapping Of Community Rights.

Although participatory community land-use mapping is not new, its deployment in the process of state recognition of tenure is growing but still experimental. Our interest is in how these exercises can illuminate the local knowledge and systems of rights that organize the rules for resource use and bring them into the

process of land and natural resource claims, demarcation and titling; and in how such local knowledge and rights systems are shaping the nature of the forest tenure reform and other land titling events or creation of areas for conservation. We observe how their inclusion allows the construction of the area (forestlands) under consideration to be done on the basis of local knowledge and social criteria, building on these institutions as a basis, not only for titling, but for the constant interface with the state. As most of these areas under the current forest reform are collective lands, lack of understanding of the underlying institutions is problematic in many ways. In the remainder of this section we discuss some of the problems that arise when the richness of an expanded mapping exercise arrives at the demarcation and titling process, and how this interface requires new approaches to transcend the spatial boundaries.

a) The boundary itself

The goal of demarcation and titling is to determine and focus on a series of fixed points – now, geo-referenced - in order to delimit the perimeters of the land to which rights will be transferred. An underlying premise is that clear and bounded property rights will be more secure, reduce conflict and stimulate investment. Much of this stems from European-derived notions of tenure, and particularly freehold with title. Titling implies the imposition of fixed points with complete and ultimate rights on each side of the perimeter. The modern system of land titling finds itself in a quandary of imposing a rigid system of spatial data onto the fluid boundaries of operating tenure systems. Even where private, public, and some forms of common or communal tenure are recognized, the implicit assumption is that there are clear boundaries between land falling into each category, whereas in practice, there are often overlapping claims by the state, community, and individuals on a given piece of land.

By definition, this process of focusing on the boundaries restricts attention to the underlying system for use of resources: how communities are organized to determine the rights, rules and responsibilities and use them. The principle recorded fact is the perimeter, staked out on a physical map. Land uses and the spatial distribution of their patterns can be recorded to substantiate the claim. But even these 'facts' are soon lost in the process of registry. The intricate system of user rights and rights allocation, both inside and out of the perimeter, remains invisible. Visual maps of land uses make a major contribution to the understanding of the rationale for establishing the limits of land use, but do not provide a comprehensible rendition of who has what rights to these multiple spaces and resources, whether they are individuals, groups or the collective as a whole, if the 'borders are fluid' with mechanisms to negotiate passage.

In some setting of boundaries, such as demarcation for protected areas, the boundaries are a wholesale external imposition, based on incomplete information, often tainted by anti-anthropomorphic biases, where conservationists 'see' primary forests, supposedly untouched by man. Early delineation by

international conservation organizations using highly sophisticated technology for demarcating large areas to set-aside were based on indicators of biodiversity. They mapped huge regions of forests, deserts and coastal areas, assuming them to be 'empty.' Government agencies that need to delimit or demarcate for land transfers often use simple methods such as transects running through large areas, based on past practice in the delineation of agricultural properties, or polygons with straight-running lines typical for demarcating industrial forest concessions. When these simple lines are applied to forest based communities, it often provokes confusion, disruption of the patterns of local resource use and even conflict by creating 'false' barriers across contiguous resources 'spaces' (pasturelands, brazil nut tree groves, watersheds, lakes). Locals who insist on maintaining previous resource use patterns are rendered 'illegal.' Law enforcement may then be deployed, criminalizing and punishing the previously legitimate activity (Poole, 2006; van de Sandt and MacKinven, 2007). These disruptions can have further negative consequences of eroding local governance structures for resource management, where rights and 'rights-allocators' have been 'overridden' and no alternative mechanisms for resolving disputes have been provided (Chapin, 2006; Colchester, 2007; van de Sandt and MacKinven, 2007).

In some cases, one can find a more strident contradiction with cultural perceptions of boundaries. What appears to be a relatively simple undertaking, can in fact become a major process of internal negotiation. For example, many Miskitu Indians of Honduras do not have a notion of fixed boundaries between their territories that imply limits for passage. The concept of 'pana-pana' is precisely the opposite, meaning "you pass-I pass" into each other's land. These rules of access by reciprocity make it difficult to demarcate the final perimeter of these large 'borderless' territories (CCARC, 2007).

b) Overlapping resources and rights holders

Although many Western-trained people think about property rights in a narrow sense as ownership—the right to completely and exclusively control a resource—property rights are better understood as overlapping bundles of rights—even a "web of interest" that connects different stakeholders (FAO, 2002; Arnold, 2002, cited in Hodgson, 2004; Meinzen-Dick and Mwangi, 2008). This applies to all forms of land use (even for a private home or farm, the state or community has some rights to regulate what can be done on the land), but it is especially true of common pool resources such as forests. When land is titled, giving the rights of access to a single forest resource such as timber, without an understanding of the implications on other resources and their users, negative outcomes can emerge, such as local conflict or loss of preciously needed income for forest-dependant locals.

In many cases the rights to timber extraction alone can seriously undermine the rights of those who depend on non-timber forest products. In the community forest concessions of Guatemala, rights were allocated to the forest for timber

production and new community organizations were established based on this productive activity. Gatherers of *xate*, a naturally occurring decorative palm found on the forest floor were not allocated specific rights and not represented in the organizations. Management plans for timber harvest both limited access to these areas and in the end destroyed *xate* plants during the harvest process. The weekly trickle of income from the sale of *xate*, that provided crucial cash flows to poor households were suddenly interrupted (Barry and Monterosso, 2007,). As women are the principal *xate* collectors and managed this income flow, tension between families and sometimes within the same family (the women collect *xate*, the men cut trees) strained household relations, until local leaders embraced the issue and promoted changes in the regulations and in their own organization.

c) Fluidity

Whereas mapping gives fixed boundaries, in practice, resource use and rights, as locally understood, are often much more fluid. The rights may vary by season, e.g. to harvest particular forest products, or to use land alternately for private cropping or for collective pastures. In a drought year people may go farther afield for critical resources, and reciprocal arrangements between local groups often accommodate this. Such changes in rights are adaptations to changing conditions of the resource itself (Meinzen-Dick and Pradhan 2002). Where they exist 'customary processes' may lead to periodic harmony, but clear property rights do not emerge because custom itself is inherently negotiated and contested (Fitzpatrick, 2006).

Some changes in resource rights take place over even longer time periods, and are even less predictable. A forest landscape in the highlands of Puebla, Mexico supported intensive livelihoods from the ubiquitous *amate* tree through the 1980's. Today, the *amate* is a relic among agro-forestry systems of shade grown coffee. Changes in local management capacity and intensity of resource use are especially important, and can either increase or restrict the rights of local people and outsiders to use particular resources, as when new bylaws are passed that regulate harvesting of particular products. Projects associated with conservation or even land demarcation (indigenous lands) often emphasize destructive pressure on resources by outside actors, neglecting that the internal resource management practices of communities are under increasing pressure from change, such as changing settlement, demographic growth, weakening of cultural values (van de Sandt and MacKinven, 2007).

d) *Who should hold the rights?*

When titling or formal registration is the primary instrument of land tenure reform and is seen as necessary for tenure security, the issue of who should receive the title can become a challenge, especially in areas of overlapping land use. In many cases, governments have difficulties in determining to whom to title the

land, for lack of clarity on whose rights to recognize. With no clear ‘mapping’ of the rights holders—whether individual, family, community, or other collective—any kind of registration is likely to change the nature of their rights, and who makes the decisions about those rights.

Representation of the collective becomes a central issue throughout the entire process. Where, when and how the collective action of the communities shapes itself (through existing organizations, the creation of new ones) to interact with the external authorities, becomes the *quid* of the process. Simple mapping of rights will not be able to adequately address all the needs of this issue, but experiences with a range of strategies for recognition of customary rights in Africa may provide a starting point for this endeavor (Cousins, 2000; Fitzpatrick, 2005; Wily, 2008).

The Framework For Considering The Distribution Of The ‘Bundle Of Rights.’

Property regimes are generally categorized as public, private, or of common property, defined in terms of who holds the rights: the state for public property, individuals (or legal individuals, such as corporations) for private property, and some form of defined group or community for common property (Bromley 1992; Feder and Feeney 1993). Open access is considered the absence of established property rights. A broader and more useful view of property rights, differentiates rights further into various “bundles of rights” (Schlager and Ostrom 1992). There are many combinations of such rights, but they can be grouped into the following large categories:

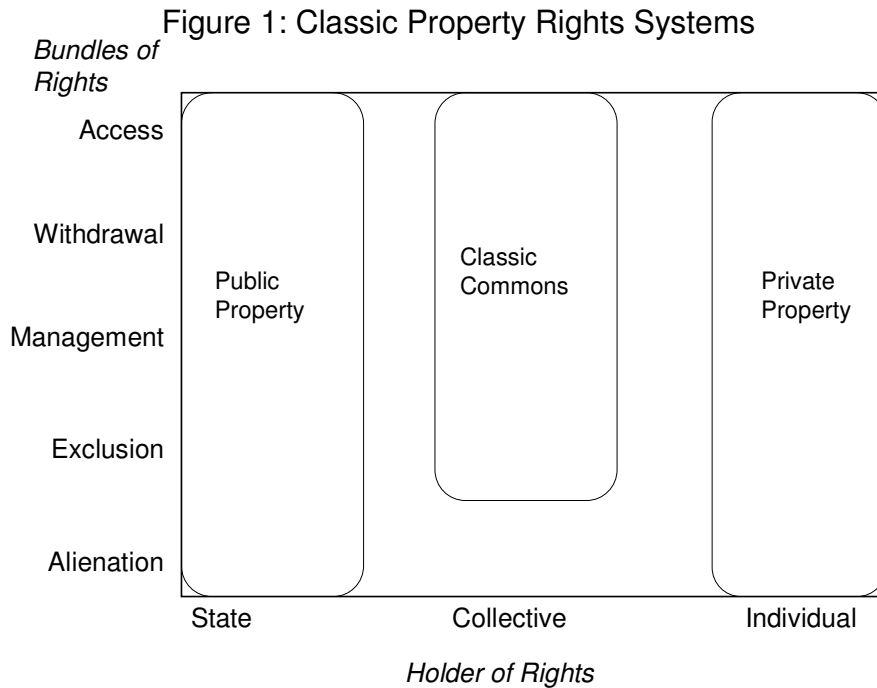
- Use rights, such as the right to:
 - access the resource (for example, to walk across a field)
 - withdraw from a resource (pick some wild plants)
 - exploit a resource for economic benefit

- Control or decision making rights, such as the rights to
 - manage (plant a crop, decide what tree to cut, where to graze)
 - exclude (prevent others from accessing the field or forest)

- Alienation, the right to
 - rent out
 - sell, or transfer the rights to others.

“Ownership” is often thought of as holding the complete bundle of rights over a particular resource, such as land. Accordingly, Figure 1 illustrates an “ideal type” of distribution of the bundle in public, common, and private ownership regimes. Note that, in public and private property, the state or individual is assumed to

hold a complete bundle of rights, including alienation rights, but in most common property, the collective do not have alienation rights.



These ideal types are almost never found in practice. In most cases, there are overlapping sets of rights, ‘underneath’ the general classifications. A national park area may be classified as public property, but individuals and groups are often allowed to use the park, either for access (e.g. bird-watching), withdrawal (taking a drink in the park), or even management, under co-management arrangements or concessions. At the other end of the spectrum on individual private property, outsiders may have rights, e.g. to cross the land with their animals (access), or to take drinking water or harvest particular products (withdrawal), or the right of the state to regulate (manage) land uses in most countries.

The state (and even most analysts) cannot deal with the enormous range of such complex rules and negotiations for each tenure agreement. But there is a need for moving beyond the physical and conceptual ‘perimeter’ defined on maps and conventional definitions of public, common, and private property, which have superimposed a rigid understanding of tenure, when rights to land and resources demands flexibility, fluidity, renegotiation. This is particularly true of common pool resources like forests. (Ankerson and Barnes. DATE) We need conceptual building blocks to develop a practical tool that can play a role in redefining the nature of the relationship between property rights holders and the state.

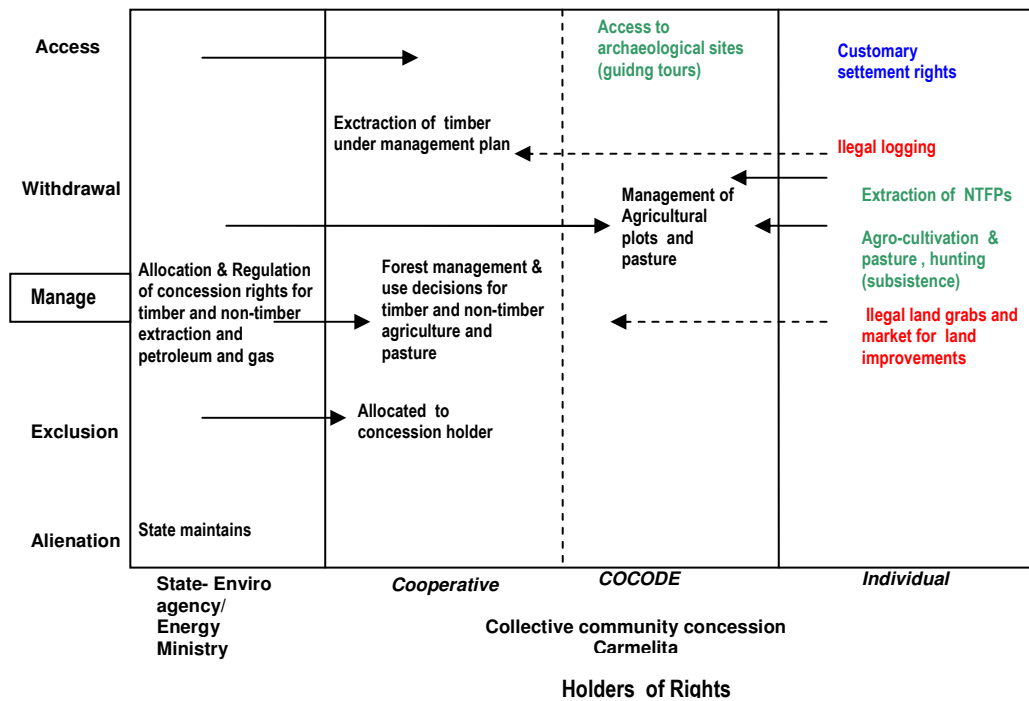
In putting this into practice, the first step would be to identify the relevant manifestations of the “state”, “collective”, and “individual”. Rather than seeing these as three distinct categories, we may find more of a continuum: different

central government agencies, municipalities in the “state” sector, chieftaincies, clans, social organizations, and smaller groups in the “collective” sector, blurring in to extended families, nuclear households, and single individuals. Which of these is relevant will depend on the local context. Then for a defined resource or set of resources, the next step would be to ask what rights each of these entities holds.

When attempting to actually map the different rights regimes, particularly with the full participation of communities, there are many dimensions that need addressing, all of which highlight the limitations of the classic system for understanding property rights. As mentioned above, forest tenure often involves rights to different resources on the same land. Where there are considerable seasonal differences in property rights, it may be necessary to draw different figures for different seasons to include seasonal grazing, hunting, or gathering rights. Over time, there may be further changes in the institutions that allocate rights. Devolution processes involve the shifting of rights from the state to user groups; i.e. from the left of the framework figure to the middle. The most common shift is only in the use rights, not decision-making rights (Meinzen-Dick et al. 2001). The extent and seriousness of devolution can be indicated by how many of the bundles are transferred.

Barry and Monterroso’s (2007) study show how the establishment of community concessions created the collectivization of forest rights and established common property along 500,000 hectares of forestlands surrounding the Mayan Biosphere Reserve. Negotiations led to the establishment of the novel form of community forest concession contracts for a period of 25 years, renewable. Nearly the full set of tenure rights – access, use, withdrawal management and exclusion- were transferred from the state to the newly established collective entities representing resident and nearby communities, as illustrated by the arrows moving from the left to the center of the diagram in Figure 3. The arrows from the right to the center of the diagram represent the informal strengthening of the collective entity to govern the common resource base. The diagram shows the significant expansion of management rights, though highly regulated through certification schemes.

Figure 3: From individualization to the collective: The forest community concessions of Peten, Guatemala, Peten



	*Basis of the rights
Ⓒ	de jure
Ⓓ	De facto
Ⓔ	Customary
Ⓕ	Illegal action

Developing A Tool For Community-Based Tenure Rights Mapping: Potential Applications Of Tenure Rights Mapping

Although “Tenure Rights Mapping” builds on academic concepts, it also has practical applications. The first use lies in the exercise of identifying right-holders and rights or claims. When land or other resources are classified and demarcated as “public”, “common” or “private, it closes our eyes to the range of rights-holders, and the claims they may have. This may exclude many who depend on a resource for their livelihoods, or who play an important role in the condition of the resource base. Consciously thinking beyond the normative categories helps to make these other uses and users visible, which may, in turn, strengthen their legal claims on the resource.

Unlike maps that focus on focusing on physical boundaries, the process of identifying the state, collective, and individual right-holders *draws* attention to the

underlying system for use of resources: how communities are organized to determine the rights, rules and responsibilities over their resources and how they use them. Initial exercises attempting to apply Tenure Rights Mapping in the field, particularly in communities where tenure reforms are underway, presented the challenge of capturing the organizational changes occurring as a result of the reforms themselves.

A second practical application of Tenure Rights Mapping is to help communities deal more effectively with claimants to their resources, and as a tool for deliberation for reaching decisions among themselves on the allocation of access and use of resources. Even laying out the option of non-exclusive use rights can help diffuse tensions over competing claims. If allowing one group to use a resource is seen as ceding all rights over the resource to them, it is more likely to cause conflict than if more limited rights of many different claimants can be recognized. At the same time, Tenure Rights Mapping can also help highlight where there are likely to be the most competition, and where to assuage looming conflict .

A third application of Tenure Rights Mapping is as a means of gaining recognition for a range of overlapping rights. While there is always a risk that codification will reify rights and make them less adaptable to changing situations, at least if more of the complexity of property rights are recorded, it can provide some protection for those who depend on a resource, but cannot claim the underlying “ownership” of it. Instead of strengthening exclusion rights through conventional titling or boundary mapping, this approach can lead to more inclusive rights, such as for groups dependent on non-timber forest products or grazing lands.

Conclusion

Land use mapping has made important strides in identifying *where* rights are exercised. Tenure Rights Mapping offers an important overlay of *who* holds *what* bundles of rights. Together, these tools could help to shape the tenure reforms or conflictive claims in many rural –particularly forested- landscapes in the southern countries of the world. Greater tenure security with flexibility would emerge.

Tenure Rights Mapping provides a conceptual guideline for organizing the system of rights holders and transfers and could produce a visual representation of the system of rights, responsibilities and rules that govern land and resources. This could be done similar to the way in which PLUM has evolved, particularly as an instrument for legalizing land or resource claims. Tenure Rights Mapping can be seen as having enormous potential in both helping communities to design their proposal for tenure and regulatory reforms, as well as adjust their internal distribution of rights as their social, environmental or market conditions change.

Putting Tenure Rights Mapping in the hands of the communities (where there is sufficient organization to appropriate it), can allow them to proactively propose the elements they want to be considered. How much visibility to give to what right, to what resources and who holds them will depend on their interest and capacity to render them visible.

References

- Alchian, A., and H. Demsetz. 1973. The property rights paradigm. *Journal of Economic History* 33(1): 16-27.
- Ankerson, Thomas T and G.Barnes. 2005. Inside the Polygon: Emerging Community Tenure Systems and Forest Resource Extraction, in Zarin & Schmink, Eds. *Working Forests in the Tropics: Conservation through Sustainable Management* (Colombia Press)
- Arnold, C.A. 2002. The reconstitution of property: Property as a web of interests. 26 *Harvard Environmental Law Review* 281.
- Barry, D. and I. Monterosso. 2007. Community-based Forestry and the Changes in Tenure and Access Rights in the Mayan Biosphere Reserve, Guatemala. Paper presented at RECOFT, TC International Conference, Poverty Reduction and Forests: Tenure, Market and Policy Reforms. Bangkok
- Bromley, D. W. 1992. The Commons, property and common property regimes. *Making the commons work: Theory, practice, and policy*. Ed. D. W. Bromley. San Francisco, CA, U.S.A.: ICS Press.
- Benda-Beckmann, F. Von. and K. Von Benda-Beckmann. 1999. A functional analysis of property rights, with special reference to Indonesia. Pp. 15-56 in T. Van Meijl and F. Von Benda-Beckmann (eds.): *Property rights and economic development: Land and natural resources in Southeast Asia and Oceania*. London: Kegan Paul.
- CCARC. 2007. Finzmos: Indigenous lands demarcation of the Miskitu territory in Honduras (Paper presented at Seminar, University of Texas, Austin).
- Chapin, M., Z. Lamb, and B. Threlkeld. 2005. Mapping Indigenous Lands. *Annual Review of Anthropology* 34:619-638.
- Chapin, M. 2006. Mapping indigenous lands: Issues and considerations. Centre for the Support of Native Lands. (Working paper).
- Colchester, Marcus. 2007. Beyond Tenure: Rights-based approaches to peoples and forest areas. Some lessons from the Forest Peoples Programme. Moreton-on-Marsh, UK: Forest Peoples Programme and RRI.
- Cousins, Ben. 2007. More than socially embedded: The distinctive character of 'communal tenure' regimes in South Africa and its implications for land policy. *Journal of Agrarian Change* 7(3) July 2007: 281-315.

- Cousins, Ben. 2000. Tenure and common property resources in Africa. In Toulmin, C. and J. Quan (eds), *Evolving Land Rights, Policy and Tenure in Africa*. London: DFID/IIED/NRI. Pp 151-179.
- Di Gessa, S., P. Poole, and T. Bending. 2008. Participatory Mapping as a tool for empowerment: Experiences and lessons learned from the International Land Coalition network. ILC, 'Knowledge for change series.' Rome, January, 2008.
- FAO (Food and Agriculture Organization of the United Nations). 2002. Land Tenure and Rural Development. FAO Land Tenure Studies No. 3. FAO, Rome.
- Feder, G., and D. Feeny. 1993. The Theory of land tenure and property rights. In *The economics of rural organization: Theory, practice, and policy*. Ed. Joseph E. Stiglitz, Karla Hoff, and Avishay Braverman. New York, NY, U.S.A.: Oxford University Press, 1993. Pp 240-58.
- Fitzpatrick, D. 2005. Best Practice Options for the legal recognition of customary tenure. *Development and Change* 36(3): 449-475.
- Fitzpatrick, D. 2006. Devolution and chaos in property rights systems: The Third World tragedy of contested access. *Yale Law Journal* 115:996-1048.
- Fox, J. et. al. 2008. Mapping Boundaries: Shifting power: In *Contentious Geographies: Environmental Knowledge, Meaning, Scale*. Ed. M. Goodman, M. Boykoff, and K. Evered (eds). Oxford: Ashgate Publishing. 203-217
- Hale, C. 2005 Neoliberal Multiculturalism: The Remaking of Cultural Rights and Racial Dominance in Central America. In *PoLAR: Political and Legal Anthropology Review*, Vol. 28, No. 1, pp. 10–28
- Herlihy, P.H., and G. Knapp. 2003. Maps of, by, and for the peoples of Latin America. *Human Organization* 62 (4): 303-314.
- Hodgson, S. 2004. Land and Water – The Rights Interface. FAO Legal Papers Online 36, <http://www.fao.org/legal/prs-ol/lpo36.pdf>, accessed on January 3, 2004.
- ILC (International Land Coalition). 2008. Meinzen-Dick, R. S., A. Knox, and M. Di Gregorio (Eds.). 2001. *Collective Action, Property Rights, and Devolution of Natural Resource Management: Exchange of Knowledge and Implications for Policy*. Feldafing, Germany: Zentralstelle für Ernährung und Landwirtschaft. (Available online at http://www.capri.cgiar.org/workshop_devolution.asp).
- Meinzen-Dick, R., and E. Mwangi. 2008. Cutting the web of interests: Pitfalls of formalizing property rights. *Land Use Policy* 26(1): 36-43.
- Meinzen-Dick, R. S., and R. Pradhan. 2002. Legal pluralism and dynamic property rights. CAPRI Working Paper No. 22. Washington, DC: International Food Policy Research Institute. <http://www.capri.cgiar.org/pdf/capriwp22.pdf>.

- Molnar, A., S. Scherr, and A. Khare. 2004. Who conserves the world's forest areas? Community-driven strategies to protect forest areas and respect rights. Washington DC: Forest Trends.
- PGIS. 2008 Participatory Avenues, the Gateway to Community Mapping, PGIS & PPGIS. <http://www.iapad.org/bibliography.htm> 2008.
- Poole, Peter. 2006. Is there life after tenure mapping? In *Participatory Learning and Action 54*: IIED and CAT. (Available online: www.iied.org/NR/agbioliv/pla_notes/pla_backissues/54.html)
- Schlager, Edella, and Elinor Ostrom. Property-rights regimes and natural resources: A conceptual analysis. *Land Economics* 68.3 (1992): 249-62.
- Sunderlin, W., J. Hatcher, and M. Liddle. 2008. From Exclusion to Ownership? Challenges and Opportunities in Advancing Forest Tenure Reform. Washington DC: Rights and Resources Initiative.
- Van de Sandt, J. and A. MacKinven. 2007. Mapping indigenous territories. National committee of the Netherlands, Part A) Overview and Synthesis of Project Cluster. Small Grants Programmes, Knowledge Management series. No. 1 IUCN, April, 2007.
- White, A. and A. Martin. 2002. *Who owns the world's forests?: Forest tenure and public forests in transition*. Washington DC: Forest Trends and Center for International Environmental Law.
- Wily, L. A. 2008. Custom and commonage in Africa: Rethinking the orthodoxies. *Land Use Policy* 25: 43-52.