

From Exclusion to Ownership?

Challenges and Opportunities in Advancing Forest Tenure Reform



THE RIGHTS AND RESOURCES INITIATIVE

The Rights and Resources Initiative is a global coalition to advance forest tenure, policy, and market reforms. RRI is composed of international, regional, and community organizations engaged in conservation, research, and development.

The mission of the Rights and Resources Initiative is to promote greater global action on pro-poor forest policy and market reforms to increase household and community ownership, control, and benefits from forests and trees. RRI is coordinated by the Rights and Resources Group, a non-profit organization based in Washington D.C. For more information, visit www.rightsandresources.org.

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Cover photo by Agni Klintuni Boedihartono, IUCN – Forest Conservation Programme. Batwa women and children discussing their visions for the future of their landscape; in Mututu village, Bururi Province, Burundi. This photo was taken during a visualization and visioning exercise conducted by the IUCN Livelihoods and Landscapes program in Mututu village, May 2008.

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PREFACE

It is now widely recognized that clear tenure rights are central to achieving social and economic development. Clarification of tenure rights will also be a crucial component of forest-based approaches to mitigating climate change. We know that uncertainty, contestation, and conflict over property rights undermine progress on many fronts. Formal recognition of the property rights of indigenous peoples and forest communities has long been argued on moral grounds, but it is also a social, economic, and political imperative. The reasons for giving serious attention to the issue of forest tenure are now more compelling than ever.

The Rights and Resources Initiative (RRI) is a new coalition of international, regional, and community organizations whose mission is to promote greater global action on forest policy and market reforms to increase household and community ownership of, control of, and benefits from forests and trees. The report in your hands is the product of one of our main activities: generating new, global-level analysis to support reforms and options to achieve them.

This report follows a publication titled *Who Owns the World's Forests?: Forest Tenure and Public Forests in Transition*¹ published in 2002. In that publication, Alejandra Martin and I wrote that in the course of recent decades, long-standing government claims to owning forests had begun to dissolve. We documented three trends related to this forest tenure transition. First, some countries were recognizing community ownership, including territories owned by indigenous peoples; second, some countries were designating management responsibility of public forest lands to communities; and third, some countries were reforming public forest concessions to support greater community access. We concluded that governments need to plan and manage the forest tenure transition and we provided concrete suggestions on how such reforms might be accomplished.

When RRI was established in 2005, we realized the need to better monitor and report on the world forest tenure transition. That is one of the main objectives of this report: to disseminate quantitative information on what has happened since 2002. This is an important task for two reasons. First, the transition away from wholesale government ownership and control of world forests has significant implications for the wellbeing of forest peoples, for the management and conservation of forests, and for a suite of global issues related to forests—climate change among them. To know the numbers is to understand if and how the transition continues. Second, we have undertaken this task because no other organization is doing such monitoring. We hope that by promoting an understanding of the importance of these trends, an international organization with greater data-gathering capabilities will eventually take over this work.

This report not only presents quantitative information on the tenure transition, but also interprets it in a wider context. The quantitative information RRI is monitoring is government data on formal and legal (*statutory*) tenure. Statutory tenure often overlaps and competes with systems of pre-existing, locally-determined property rights called *customary tenure*. There is a wide variety of constraints to the recognition of human, civil, and property rights of local people, as well as to improving forests' contribution to broader social, economic, and environmental goals. Yet it is equally important to understand that there are countervailing conditions that provide a foundation for the hope that secure tenure for the people of the world's forests is a future within reach.

ANDY WHITE
Coordinator
Rights and Resources Initiative

CONTENTS

PREFACE	ii
LIST OF TABLES AND FIGURES	iv
LIST OF ACRONYMS AND ABBREVIATIONS	v
SUMMARY	vi
1. INTRODUCTION	01
2. THE TENURE TRANSITION: CUSTOM, CONTESTATION, AND STATUTORY LAW	03
3. STATUTORY FOREST TENURE CHANGE FROM 2002 to 2008	06
3.1 Methods	06
3.2 Results	07
3.3 Discussion of Table 1 Results	10
4. CHALLENGES TO REALIZING THE POTENTIAL OF STATUTORY TENURE REFORM	12
4.1 Inadequate enforcement and implementation of reforms	12
4.2 Lack of progress on complementary rights	14
4.3 Government preference for industrial concessions and conservation over people	15
4.4 Competition within and among forest communities	21
4.5 Weak performance of government in advancing reforms	21
4.6 Summary of the challenges	24
5. SIGNS OF PROGRESS	25
5.1 Law and policy developments that clarify and strengthen tenure	25
5.2 The impacts of forest tenure reform	28
5.3 The opportunity of climate change, bargaining power, and the rights of forest peoples	29
5.4 The growth of organizations and networks in support of forest tenure reform	30
5.5 Where we stand, on balance	31
6. OPPORTUNITIES FOR MAKING BETTER PROGRESS	32
ANNEX 1. THE CHALLENGE AND RISK OF COMPILING WORLD STATUTORY FOREST DATA	36
ANNEX 2. TECHNICAL GUIDELINES FOR COMPILING DATA ON STATUTORY FOREST TENURE CHANGE	37
ANNEX 3. MAIN CONSIDERATIONS IN CREATING A FRAMEWORK FOR THE 2002–2008 COMPARISON IN TABLE 1	38
ENDNOTES	39
ACKNOWLEDGEMENTS	53

LIST OF TABLES AND FIGURES

LIST OF TABLES

TABLE 1. FOREST TENURE DISTRIBUTION IN THE 30 MOST-FORESTED COUNTRIES, 2002–2008	08
TABLE 2. FOREST TENURE DISTRIBUTION IN SIX WEST AFRICAN COUNTRIES, 2002–2008	10
TABLE 3. CONCESSION DATA FOR 15 OF THE 30 MOST-FORESTED COUNTRIES, 2008	17
TABLE 4. RECENT POLICY AND LAW DEVELOPMENTS THAT STRENGTHEN COMMUNITY TENURE RIGHTS	27

LIST OF FIGURES

FIGURE 1. FOREST TENURE DISTRIBUTION BY TENURE CATEGORY IN 25 OF THE 30 MOST-FORESTED COUNTRIES, 2002–2008	09
FIGURE 2. NUMBER OF COUNTRIES EXPERIENCING A DECREASE, INCREASE, OR NO CHANGE IN THE TOTAL FOREST AREA UNDER EACH TENURE CATEGORY IN 25 OF THE 30 MOST-FORESTED COUNTRIES, 2002–2008	09
FIGURE 3. COMPARISON OF THE AREA OF INDUSTRIAL CONCESSIONS AND COMMUNITY FOREST LAND IN 15 COUNTRIES, 2008	18

LIST OF ACRONYMS AND ABBREVIATIONS

CAR	Central African Republic
CBFM	Community Based Forest Management
CIFOR	Center for International Forestry Research
DRC	Democratic Republic of the Congo
FAO	Food and Agriculture Organization of the United Nations
ICRAF	World Agroforestry Centre
IUCN	International Union for Conservation of Nature
JFM	Joint Forest Management
Mha	Million hectares
nd	No data available
NGO	Nongovernmental organization
NTFP	Nontimber forest product
OWL	Other Wooded Lands (lands with 5–10% canopy cover)
PNG	Papua New Guinea
RECOFTC	Regional Community Forestry Training Center for Asia and the Pacific
REDD	Reduced Emissions from Deforestation and Degradation
RRI	Rights and Resources Initiative

SUMMARY

In 2002 *Who Owns the World's Forests?: Forest Tenure and Public Forests in Transition* reported that in recent decades governments had begun to reduce their legal ownership and control of the world's forests. The aim of this report is to measure whether this forest tenure transition continued in the 2002–2008 period, and to assess the implications of statutory forest tenure change for forest peoples, governments, and the global community.

This report finds that the transition did continue in the 2002–2008 period. The area of state ownership declined, and there were corresponding increases in the area of forests designated for use by communities and indigenous peoples, the area owned by communities and indigenous peoples, and the area owned by individuals and firms.

Though the tenure transition continues, progress is mixed. Among the main problems are that: governments retain a firm grip on the majority of forests and the forest tenure transition is slow; statutory reforms do not always result in more secure tenure; action on human, civil, political, and gender rights is also necessary to improve wellbeing, and progress on this front is slow; the area of industrial concessions still greatly exceeds the area of forest designated for use by, or owned by, communities and indigenous peoples; industrial claims on forest lands are increasing sharply, for biofuels production among other reasons; and some governments are performing poorly in carrying out the reform process.

However, there is good news: many new national reforms have been announced in 2002–2008 recognizing forest land access and ownership of local people; research results add to the evidence that strengthened forest tenure for communities and individuals can improve wellbeing, enable exclusion of outside claimants, and improve forest management and conservation; world attention to climate change offers the possibility of increasing the bargaining power of forest peoples; and there is evidence of growth in the movement to strengthen local forest tenure.

The report closes with recommendations on how the forest tenure reform process can be carried forward.

1

INTRODUCTION

Who owns the world's forests? There are two fundamentally different ways to answer this question. From the point of view of customary tenure (determined in most cases by local people), the answer is: "People who live in and near forests own them, and the government does not." If the question is posed from the point of view of statutory tenure (determined by the state), the answer is: "The government controls most of the land, but in some countries, the government has transferred ownership and access rights to some communities, individuals, and firms." This publication focuses mostly on the second perspective, not because it is the most important, but because the official view shapes policy and its implementation, because it is possible to measure recent change, and because there are profound consequences related to this change.

Has the forest tenure transition continued since 2002?

The 2002 publication *Who Owns the World's Forests?: Forest Tenure and Public Forests in Transition* made it clear that a centuries-long pattern of dominant government ownership and control of forest lands had begun to change. On the basis of government statutory tenure data, the report estimated that in 2002, 77% of the area of the global forest estate was directly administered by governments, 4% was designated for use by communities and indigenous peoples, 7% was owned by local communities and indigenous

peoples, and 12 % was owned by individuals and firms.² The authors discerned three trends linked to this forest tenure transition: some governments had begun to recognize ownership by communities and indigenous peoples and had produced legislation in support of this change; some governments had begun to authorize management of government forest lands in reserves; and a third group of governments had begun to authorize community concessions as a departure from the common practice of awarding concessions to private entrepreneurs.³ The authors highlighted two issues related to the transition: the need for a legal and policy environment that supports community forest ownership, and the need for public, private, and civil society actors to carefully plan and manage these transitions.⁴

The 2002 report has been widely read by representatives of donor organizations, scholars, practitioners in the field of environment and development, community organizations, and policy makers. One of the reasons for this interest was a paradigm shift in views on the role of forests in society. "People-centered forestry" was just a slogan in the 1960s, but it is gradually entering the mainstream of forestry thinking. Advocates of this outlook argue that it can contribute to solving a wide array of solutions to forest-related problems, among them:

- Indigenous peoples and others living in the forest will have their customary and ancestral land rights respected and will no longer be treated like trespassers in their own homes;

- Forest peoples will no longer live under perpetual threat of having their ancestral territories desecrated, of having their means of subsistence destroyed, or of becoming refugees;
- In being recognized as the legal custodians of the forest lands they inhabit, forest peoples will be more likely to have stable livelihoods, to make investments in their lands and resources, and to manage and conserve them well in perpetuity;
- Local management of forests will offer a viable alternative in cases where governments have not performed well as lone stewards of the land, or where the industrial model of forest management has failed to benefit society and protect forest resources; and
- Clear and secure forest property rights will decrease resource conflict, will put the forest sector on a stable footing, will encourage investment, and will thereby contribute to broader social and economic development.

Recent developments have stimulated even greater interest in clarifying tenure rights and in local-level ownership and management of forest lands and resources. Demand for access to forest lands has increased dramatically, in part because of growing demand for agro-industrial crops, including biofuels. Creating functional and equitable markets for carbon sequestration on forest lands will require clarification of property rights and carbon rights.

Has the forest tenure transition continued since 2002? If so, in which countries, and on what scale? Have the trends that underpin this transition continued? This report aims to answer these questions. In addition, this report looks beyond the numbers and puts the transition in context. It is important to know whether strengthening statutory forest tenure for individuals and communities is achieving what was intended, as well as to understand the contextual factors that threaten or favor success in statutory tenure reform.

The report is comprised of five subsequent sections as follows:

Section 2 sets the stage by describing the

historical friction between customary and statutory forest tenure. Forest peoples once experienced a sense of ownership of the forests they inhabit. This gave way to a sense of exclusion as governments the world over assumed legal control over forests. In recent decades, there appears to be a transition from exclusion to ownership as governments recognize customary tenure and confer statutory rights.

Section 3 measures change in the forest tenure transition in the 30 most-forested countries in the world and in six West African countries.

Section 4 notes that, despite the improvement in statutory non-state rights over forests, there are worrisome problems including: the slow pace of recognition of full ownership rights; statutory reforms not always resulting in more secure tenure; the slow pace of progress on human, civil, political, and gender rights, which are an important complement to tenure rights; tenure conflicts originating from outside or inside the community; and obstacles to tenure reform concerning the tendency of some governments to side with business interests, aspects of decentralization and devolution that impinge on the success of tenure reform, and deficiencies in government administration and capacity.

Section 5 points out that, although there are challenges, there also are signs that positive forest tenure change is underway and that there are opportunities to be seized. Among these positive signs are: new national policies strengthening tenure rights; cases demonstrating that strengthened forest tenure rights can improve livelihoods, serve as the basis for excluding outside claimants, and promote forest conservation; the emerging interest in rewarding forest peoples to help keep forests standing and therefore reduce the global threat posed by climate change; and the growth of grassroots movements and national, regional, and international organizations and networks in support of forest tenure reform.

The concluding section identifies some opportunities for extending, improving, and speeding up the process of statutory forest tenure reform.

2

THE TENURE TRANSITION: CUSTOM, CONTESTATION, AND STATUTORY LAW

The world is experiencing a forest tenure transition that involves contestation between two fundamentally different tenure systems: customary and statutory. Before describing this contestation, it is useful to explain some key terms. Tenure systems define who owns and who can use what resources for how long, and under what conditions.⁵ Customary tenure systems are determined at the local level and are often based on oral agreements. Statutory tenure systems are applied by governments and are codified in state law.

Hundreds of millions of people live on forest lands, and a large but undetermined number have no or weak land and resource tenure security. The reasons for this insecurity vary. Local people might enjoy rights under both customary and statutory tenure arrangements, but are unable to oppose the claims made on land and resources by outsiders. In some cases, the customary arrangements may be clear and well accepted at the local level, but statutory arrangements contradict or nullify them. And in other cases, customary tenure arrangements—for whatever reasons—are unable to serve their function.

Forest tenure security is important because it is often the foundation for the social identity, personal security, and cultural survival of indigenous peoples and ethnic minorities. Forest tenure is also important for economic reasons. It has a strong role in determining who benefits or loses in the competition for economic goods and environmental services provided by forest ecosystems. Security

of tenure is often a prerequisite for capital investment by government or businesses, while conversely, conflicts over forest lands discourage investment and undermine sound management. Tenure security also has a strong role in the structure of incentives that motivate protection or destruction of forests.

In order to fully appreciate the contemporary importance of forest tenure, it is useful to observe how it has changed throughout the world in the last several hundred years. Centuries back, indigenous peoples living in forested areas determined largely for themselves how they would use and manage their forest environments. Though historical documentation of such customary laws and practices is limited, it can be assumed that forest peoples had a relatively free hand in governing their environments. Of course, this does not exclude the possibility of territorial war and conflict among ethnic groups, and early domination and exploitation by foreign colonizers in non-remote forests.

In the course of recent centuries, with the widening reach of sedentary agriculture, the onset of the industrial revolution and capitalism, the establishment of nation states, the founding of cities and centers of trade, the growth of colonialism, the marketing of primary goods both domestically and internationally, rapid population growth, and conversion of large areas of forest to other land uses, modern governance of forest lands took shape. National governments declared public or

state ownership of large areas of forests as part of the national domain and formulated laws enshrining their role as the ultimate decision-making body for forest lands and the resources on them.

In this early stage of the forest tenure transition, people living in and near forests went from perceiving ownership over their land and resources to perceiving exclusion. In this process, they lost a sense of belonging and security, and lost confidence that one's land and resources cannot be taken away arbitrarily. Over time, individuals and entire communities lost their place in the world.⁶ They were dispossessed of their land and resources as more powerful entities asserted the right to manage, use, and sell those lands and resources.

Today, forest areas managed under customary tenure greatly exceed the area of community and indigenous lands acknowledged by statutory tenure law.

A favorable outlook on state seizure of forest ownership says this step served the “public good.” From this point of view, government monopoly control of vast stretches of forests aimed to protect the national forest estate against rapid deforestation and ecological devastation; aimed to protect valuable natural timber resources against decimation, viewing it as a strategic resource; and aimed to designate protected areas that would never be subject to land-use conversion. “Scientific forestry” was promoted as a way to rationalize the timber economy and maintain resource stocks into the future.

A less-than-favorable outlook on state seizure of forest lands contends that it was done primarily to create a system of privileged access to lucrative forest resources (e.g. timber, oil and other minerals underlying forests, and certain precious nontimber forest products) for powerful people in government, well-connected private entrepreneurs, and favored

members of the military establishment. By forcibly excluding competitors, the state could not only guarantee access to vast supplies of natural resources, but also create systems of natural-resource patronage (i.e. expect favors in return for government largesse), and nullify competing resource claims made by indigenous peoples under customary laws. Eventually, this logic was part and parcel of promoting a large-scale industrial model for the timber sector, of favoring centralized state revenue over local development, and of imposing an exclusionary model of forest protection.

States are complex and multi-faceted entities, so it is possible that both the “favorable” and “unfavorable” motivations can unfold within the same governing entity. And of course, high-minded motivations can serve to disguise unflattering ones. Whatever the fundamental reasons for worldwide government acquisition of national forests, the outcome was often the same: failure to achieve their stated goals. In most countries, centralized government ownership and control of forest lands and resources failed to avert massive deforestation, forest degradation, and severe damage to the environmental services forests provide. Moreover, monopolistic control over forest lands and the stream of forest wealth deprived local people of one possible path out of poverty, and in the worst cases, imposed poverty, misery, dislocation, and cultural decimation where none existed previously.

Today forest areas managed under customary tenure greatly exceed the area of community and indigenous lands acknowledged by statutory tenure law. Although in many countries around the world national governments sought to eliminate customary land tenure (including but not limited to forests), these systems of local rights and management practices have (to greatly varying degrees) endured. Today most communities, with the exception of some that are remote, seek formal legitimacy or protection to secure their customary

rights. For this reason, they seek to influence, or adapt to, state and international treaty law to protect their interests.⁷

In recent decades, there has been a worldwide trend toward the recognition of human rights, and toward decentralization of national governments, often linked to new constitutional provisions related to democratization. A tendency has gradually unfolded in many countries to recognize local rights and to devolve management over natural resources—including forests—from government to local people and communities. Together, these transitions have encouraged tenure reform in many countries.

In recent years, position papers by multilateral and bilateral institutions have championed the idea of strengthening local tenure rights, including to forest lands, with the belief that doing so can contribute to promoting social and economic development. Taken together these papers espouse the belief that strengthened local tenure over land and other natural resources can encourage local investment in land and resources, enable access to credit through use of titles as collateral, improve land markets, establish a legal basis for excluding competitors and thus reduce resource conflict, encourage sustainable resource use, serve as a strong stimulus to economic growth, and promote the legal transfer of land from one generation to the next.⁸

What are the key building blocks required for achieving a transition from exclusion to ownership—that is, for achieving tenure security at the level of the community? According to Ellsworth and White the key elements are: “effective internal institutions of the community, legal recognition and support of community rights, the presence of independent judicial arbitration systems, effective regulatory mechanisms and institutions, and a supporting political constituency.”⁹

In this report we focus most of our attention on statutory forest tenure: to what extent and in what ways it is changing, and the challenges in and opportunities for making it a useful policy and legal tool. Nevertheless, we do not stray far from the topic of customary tenure. The two modes of tenure are intertwined through their contestation, and also because customary tenure is often compelled to seek a legal mantle to survive and prosper.

Statutory forest tenure, through its different permutations in the course of history, reflects dramatically different state visions of who should manage forest lands. The historic trend toward exclusion of local people from secure rights and benefits to forest resources has given way to a new philosophy. In a growing number of countries, governments are recognizing customary rights, and are conferring new forms of statutory rights to indigenous peoples, communities, individuals, and firms.

3

STATUTORY FOREST TENURE CHANGE FROM 2002 TO 2008

3.1 METHODS

The 2002 publication *Who Owns the World's Forests?* presented statutory forest tenure data on 24 of the 30 most-forested countries. Building on this approach, Table 1 below compares world statutory forest tenure data for 2002 and 2008. It includes the 30 most-forested countries in the world, covering 85% of the area of the global forest estate.¹⁰ The countries are listed in descending order of total forest area using the *FAO Global Forest Resources Assessment 2005* as the source of data on forest area.¹¹ Due to changes in forest area in the 2002–2008 interval, the composition and the order of the countries has changed compared to those displayed in the 2002 publication.¹²

Table 2 shows statutory forest tenure data for 6 West African countries in 2002 and 2008. The intention behind presenting this table is to understand whether the forest tenure transition is occurring in countries that are not heavily forested.

Tables 1 and 2 apply the same tenure definitions and data compilation approach used in the 2002 publication. Doing so ensures that time-series changes detected in the 2002–2008 interval reflect real change and not modification of the standards of measurement. The tenure categories related to these definitions are not hard and fast, and in fact describe a spectrum in which the categories blend into one another at the margins. Minor alterations

in the wording of variable definitions were made for purposes of clarification.

Tables 1 and 2 distinguish between the *public* domain and the *private* domain of forest lands in the “legal” forest estate. The “public” and “private” domains are further subdivided into two categories, yielding four tenure categories:

- *Public lands administered by government* typically include all forests in the legal forest estate that are owned and administered exclusively by the government and that are not designated for use by communities or indigenous peoples. Note that this category includes some protected areas¹³ and forest lands awarded as concessions for logging, agro-industrial or silvicultural plantations, and mining.
- *Public lands designated for use by communities and indigenous peoples* are lands set aside on a semi-permanent but conditional basis. According to the 2002 publication: “governments retain ownership and the entitlement to unilaterally extinguish local groups’ rights over entire areas. Under this arrangement, local groups typically lack rights to sell or otherwise alienate land through mortgages or other financial instruments. Although the distribution of rights between government and community in this category is different in almost every country, governments invariably retain strong authority to extract and manage forest resources.”¹⁴

- *Private lands owned by communities or indigenous peoples* refers to forest lands where rights cannot be unilaterally terminated by a government “without some form of due process and compensation.”¹⁵ In theory, private land owners typically “have rights to access, sell or otherwise alienate, manage, withdraw resources and exclude outsiders.”¹⁶ However in the real world, there are some situations where not all of these rights are awarded to private land owners, and others where some of these rights are conferred to people on public, designated for community-use forest land. For this reason, the legal right of the government to terminate a land right with or without due process and compensation serves as the chief criterion for distinguishing public from private forest tenure. Note that in some cases where private lands are said to be owned by communities or indigenous peoples, the state is considered to be the ultimate owner under statutory law, though the communities and indigenous peoples are recognized as the lawful right holders.
- As with the category above, *private lands owned by individuals or firms* are those where

the rights cannot be unilaterally terminated by a government without due process or compensation.

The quality and availability of forest tenure data for creating Table 1 is as challenging in 2008 as it was in 2002. Among the challenges are the facts that many countries do not compile statutory forest tenure data systematically or routinely, and statutory tenure categories tend to be different from country to country. Annex 1 describes the methods difficulties we faced.

We developed a protocol for ensuring accuracy, for enabling comparability with the 2002 data, for resolving inconsistencies, and for providing instructions for future attempts to update the data. The protocol is shown in Annex 2.

There were four main methods considerations in creating a framework for the 2002–2008 data comparison in Table 1. They concern: retrospective discovery of improved 2002 data; changing definition of “forest” between the two time periods; assignment of data to different columns from one period to the next; and exclusion of comparisons for country cases where data were unavailable for both years. They are summarized in Annex 3.

3.2

RESULTS

Table 1, together with its visual counterpart Figure 1, show that the forest tenure transition has continued through 2008. The results are based on a comparison of the 25 country cases that were complete in all tenure categories for both 2002 and 2008. These 25 countries account for 80% of the global forest estate.¹⁷

The results show:¹⁸

- The absolute area of public forest land administered by government in 25 of the 30 most-forested countries has decreased from 2,583 Mha in 2002 (80.3% of the global forest estate) to 2,408 Mha in 2008 (74.3%).
- The absolute area of forest designated for use

by communities and indigenous groups in these countries has increased from 49 Mha in 2002 (1.5% of the global forest estate) to 76 Mha in 2008 (2.3%).

- The absolute area of private community and indigenous land in these countries has increased from 246 Mha in 2002 (7.7% of the global forest estate) to 296 Mha in 2008 (9.1%).
- The absolute area of forest land owned by individuals and firms in these countries has increased from 339 Mha in 2002 (10.5% of the global forest estate) to 461 Mha in 2008 (14.2%).
- In 13 of the 30 countries there was a net increase in the total area of forest land not administered by government.

TABLE 1. FOREST TENURE DISTRIBUTION IN THE 30 MOST-FORESTED COUNTRIES, 2002–2008¹⁹

All figures expressed in millions of hectares (Mha); Numbers have been rounded

Except where noted, data sources for the 2002 data can be found in the 2002 publication *Who Owns the World's Forests*²⁰

Country ²¹	Public				Private			
	Administered by government		Designated for use by communities and indigenous peoples		Owned by communities and indigenous peoples		Owned by individuals and firms	
	2002	2008	2002	2008	2002	2008	2002	2008
Russia ²²	886.50	882.98	0.00	0.00	0.00	0.00	0.00	0.00
Brazil	295.26 ²³	88.56 ²⁴	11.68 ²⁵	25.62 ²⁶	74.50	109.13 ²⁷	57.30	198.00 ²⁸
Canada ²⁹	388.90	374.14	0.00	0.00	1.40	1.46	27.20	26.48
United States	110.00	129.16 ³⁰	6.92	7.46 ³¹	0.00	0.00	164.10	166.46 ³²
China	76.06 ³³	72.85 ³⁴	0.00	0.00	103.50 ³⁵	99.94 ³⁶	0.00	0.00
Australia	114.57 ³⁷	109.30 ³⁸	0.00	0.00	13.63 ³⁹	20.85 ⁴⁰	28.68 ⁴¹	17.24 ⁴²
DRC ⁴³	109.20	133.61	0.00	0.00	0.00	0.00	0.00	0.00
Indonesia ⁴⁴	104.00	121.89	0.60	0.23	0.00	0.00	0.00	1.71
Peru ⁴⁵	nd	42.34	8.40	2.86 ⁴⁶	2.25	12.62 ⁴⁷	nd	5.29 ⁴⁸
India ⁴⁹	53.60	49.48	11.60	17.00	0.00	0.00	5.20	1.07
Sudan ⁵⁰	40.60	64.68	0.80	2.82 ⁵¹	0.00	0.00	0.00	0.05 ⁵²
Mexico ⁵³	2.75	nd	0.00	0.00	44.00	38.71 ⁵⁴	8.30	nd
Colombia	36.46 ⁵⁵	33.23 ⁵⁶	0.00	0.00	24.50	27.50 ⁵⁷	0.00	0.00
Angola ⁵⁸	59.73 ⁵⁹	59.10 ⁶⁰	0.00	0.00	0.00	0.00	0.00	0.00
Bolivia ⁶¹	28.20	22.88 ⁶²	16.60	19.52 ⁶³	2.80	9.04 ⁶⁴	5.40	1.10 ⁶⁵
Venezuela	49.51 ⁶⁶	47.70 ⁶⁷	0.00	0.00	0.00	0.00 ⁶⁸	0.00	0.00
Zambia	44.68 ⁶⁹	42.44 ⁷⁰	0.00	0.10 ⁷¹	0.00	0.00 ⁷²	0.00	0.00
Tanzania ⁷³	38.50	31.79	0.40	1.58 ⁷⁴	0.00	2.05 ⁷⁵	0.00	0.06
Argentina	5.70	nd	0.00	nd	0.00	nd	22.20	nd
Myanmar ⁷⁶	34.55 ⁷⁷	32.18	0.00	0.04 ⁷⁸	0.00	0.00	0.00	0.00
PNG ⁷⁹	0.80	0.26	0.00	0.00	25.90	25.51	0.00	0.00
Sweden ⁸⁰	2.26 ⁸¹	4.37	0.00	0.00	0.00	0.00	20.34 ⁸²	18.63
Japan ⁸³	10.50	10.24	0.00	0.00	0.00	0.29	14.60	14.44
CAR ⁸⁴	22.90	22.76	0.00	0.00	0.00	0.00	0.00	0.00
Congo	22.06 ⁸⁵	22.01 ⁸⁶	0.00	0.46 ⁸⁷	0.00	0.00	0.00	0.00
Finland	10.20 ⁸⁸	10.70 ⁸⁹	0.00	0.00	0.00	0.00	16.10 ⁹⁰	15.60 ⁹¹
Gabon ⁹²	21.00	21.76	0.00	0.00	0.00	0.00	0.00	0.00
Cameroon	22.80	20.11 ⁹³	0.00	1.14 ⁹⁴	0.00	0.00	0.00	0.00
Malaysia	nd	nd	nd	nd	nd	nd	nd	nd
Mozambique ⁹⁵	nd	17.26	nd	0.00	nd	2.00	nd	0.00
Subtotal (25 complete cases)	2582.83	2408.18	48.60	75.96	246.23	295.77	338.92	460.84
Total (all cases)	2591.28	2467.78	57.00	78.82	292.48	349.10	369.42	466.13

FIGURE 1. FOREST TENURE DISTRIBUTION BY TENURE CATEGORY IN 25 OF THE 30 MOST-FORESTED COUNTRIES, 2002–2008



Figure 2 shows that the forest tenure transition in 25 of the 30 most-forested countries is also evident in the numbers of countries experiencing change:

- 18 countries experienced a decrease in the area of land administered by government, no country experienced no change, and 7 countries saw an increase.
- 10 countries experienced an increase in the area of forest land designated for communities and indigenous peoples, 14 countries experienced no change, and 1 country saw a decrease.

- 7 countries experienced an increase in the area of forest land owned by communities or indigenous peoples, 16 countries experienced no change, and 2 countries saw a decrease.

- 5 countries experienced an increase in forest land owned by individuals or firms, 13 countries experienced no change, and 7 countries saw a decrease. (This is the one deviation from the tenure transition pattern.)

- “No change” is the dominant pattern in the three tenure categories other than “administered by government.”

FIGURE 2. NUMBER OF COUNTRIES EXPERIENCING A DECREASE, INCREASE, OR NO CHANGE IN THE TOTAL FOREST AREA UNDER EACH TENURE CATEGORY IN 25 OF THE 30 MOST-FORESTED COUNTRIES, 2002–2008

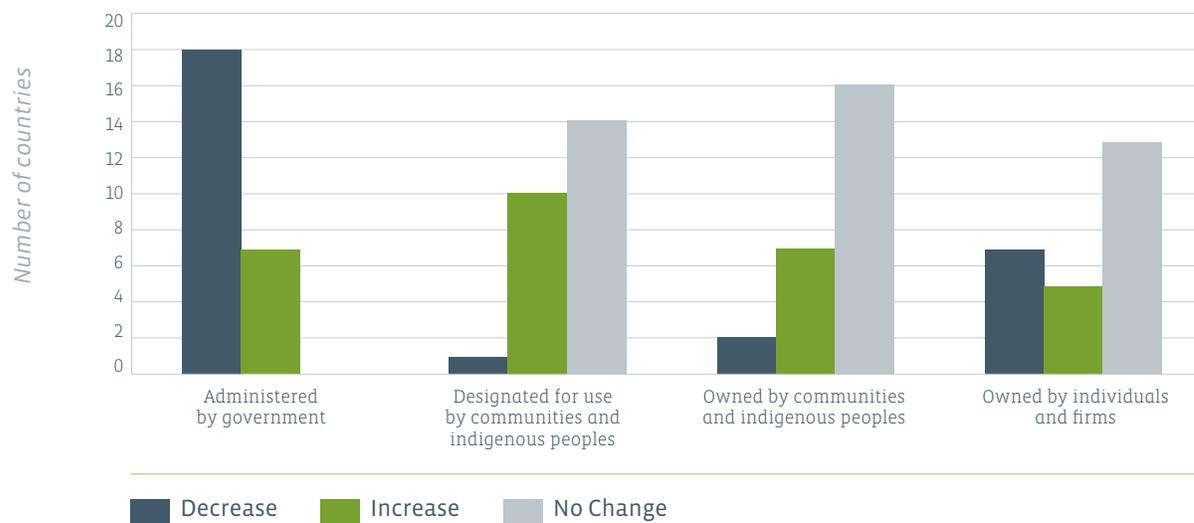


TABLE 2. FOREST TENURE DISTRIBUTION IN SIX WEST AFRICAN COUNTRIES, 2002–2008⁹⁶
 All figures expressed in millions of hectares (Mha); Numbers have been rounded

Country ⁹⁷	Public				Private			
	Administered by government		Designated for use by communities and indigenous peoples		Owned by communities and indigenous peoples		Owned by individuals and firms	
	2002	2008	2002	2008	2002	2008	2002	2008
Mali ⁹⁸	nd	15.895	nd	0.705	nd	0.000	nd	0.000
Chad ⁹⁹	12.317	11.221 ¹⁰⁰	0.000	0.700	0.000	0.000	0.000	0.000
Senegal	nd	12.771 ¹⁰¹	nd	0.987 ¹⁰²	0.000 ¹⁰³	0.000 ¹⁰⁴	0.000 ¹⁰⁵	0.062 ¹⁰⁶
Burkina Faso ¹⁰⁷	6.688	6.348 ¹⁰⁸	0.226	0.394	0.000	0.000	nd	0.052
Niger	4.742 ¹⁰⁹	4.125 ¹¹⁰	0.626 ¹¹¹	0.873 ¹¹²	0.000 ¹¹³	0.000 ¹¹⁴	0.000 ¹¹⁵	0.008 ¹¹⁶
Gambia	nd	0.414 ¹¹⁷	nd	0.017 ¹¹⁸	0.024 ¹¹⁹	0.029 ¹²⁰	0.000 ¹²¹	0.000 ¹²²
Total	23.747	50.774	0.852	3.676	0.024	0.029	0.000	0.122

Table 2 shows the statutory forest tenure distribution in six West African countries in 2002 and 2008. While the data are not sufficiently complete to make detailed, country-specific comparisons as done in Table 1, a comparison of the 2002 and 2008 data shows an increase in forest land designated for communities in Burkina Faso, Chad, and Niger;

an increase in forest land owned by communities and indigenous peoples in Gambia; and an increase in forest land owned by individuals and firms in Niger and Senegal. These data confirm, at least in part, that the transition away from government-administered forest land is occurring in forest-poor countries as it is in forest-rich countries.

3.3

DISCUSSION OF TABLE 1 RESULTS

Although Table 1 (together with Figures 1 and 2) makes it clear the forest tenure transition has continued in recent years, the change must be interpreted with caution. There are various nuances of the trend that must be discussed so that it can be understood correctly.

First, although the amount of forest land administered by the government has decreased by 175 Mha in the 25 complete cases, it is not clear that all of this decrease is explained by transfer of forest land to the three other tenure categories. Some of the decrease probably results from deforestation, and relatedly, from forest lands that have been

transferred out of the forest domain to agriculture or other land uses.

Second, just eight countries (Australia, Bolivia, Brazil, Cameroon, Colombia, India, Sudan, and Tanzania) account for almost all of the net increase in the area of lands designated for and owned by communities and indigenous peoples. Brazil alone accounts for most of the net increase in the area of forest owned by individuals and firms. In most other countries in the 2002–2008 period, there has been no progress towards allocating forest lands to communities and indigenous peoples.

Third, it is important to clarify an apparent discrepancy between the findings of the 2002 publication and the analysis in this publication. In 2002 the authors found that 77% of the area of the global forest estate was administered by government and 23% was not administered by governments. Calculations based on data in the current report show that in 2002, 80% of the area of the global forest estate was administered by government and 20% was not administered by governments. This discrepancy is partly explained by retrospective adjustments to the data (see Annex 3). Another cause is that we limited the current analysis to the 25 countries where data are complete for both years and in all four tenure categories, in order to make the comparison between 2002 and 2008 accurate. Under these parameters, this analysis shows that in 2008, 74% of the area of the global forest estate is

administered by government and 26% is not administered by governments.

Lastly, it is important to note that while all of the area in Table 1 is classified as “forest,” a portion of the area does not in fact have much forest on it. In *Global Forest Resources Assessment 2005*, FAO classifies as “forest” lands with 10% canopy cover or greater, meaning it includes some lands with sparse forest cover.¹²³ Also, following the pattern set in the 2002 publication, for some countries we included “Other Wooded Lands” (lands with 5–10% canopy cover).¹²⁴ Moreover, because we attempted to include data on the *legal* area of forest and not just the biophysical area, there are some “forest” lands included in the table that may be nearly or completely deforested. We include such lands in the table because many governments strengthen local tenure rights to these lands precisely because most of the marketable timber has been sold off.

4

CHALLENGES TO REALIZING THE POTENTIAL OF STATUTORY TENURE REFORM

It is good news that the forest tenure transition continues. Where implemented appropriately many countries and millions of rural people will benefit from this trend and forests can be better managed as a result. Moreover, clarification and strengthening of forest tenure will contribute to addressing global problems including conflict and war, slow economic growth, and climate change.¹²⁵

The bad news is limited progress, particularly on recognizing local private ownership. Various challenges stand in the way of achieving progress

through forest tenure reform. They are of five types: (1) inadequate enforcement and implementation of reforms; (2) lack of progress on rights that complement forest tenure reform; (3) government preference for industrial concessions and conservation over people; (4) competition within and among forest communities; and (5) weak performance of government in advancing reforms. In this section we describe how statutory forest tenure reform has fallen short, the reasons for these problems, and other challenges that will be faced in the future.

4.1

INADEQUATE ENFORCEMENT AND IMPLEMENTATION OF REFORMS

As we have seen above, world progress towards recognizing local ownership and access rights in recent years has been slow. A minority of the countries among the 30 most-forested countries account for most of the change in area, and few of these top 30 countries have begun to recognize non-government tenure since 2002.

Moreover, even in those countries where legal forest land rights of indigenous peoples and communities have been recognized, the new rights conferred sometimes fail to achieve what was intended. Recognition and strengthening of forest

tenure rights are assumed to bestow a wide range of benefits. The strongest of these sets of rights are those denominated “private ownership.” Forest peoples favor private ownership of forests because, at least in principle, it overcomes the sense of exclusion and restores the sense of ownership described in Section 2. Private ownership theoretically provides communities and individuals with confidence that their lands cannot be taken by government or other parties without due process of law. Although people with designated use rights to public forest lands do not enjoy a legal guarantee

of due process, they nonetheless are given a range of rights that are deemed valuable.

Nevertheless, private ownership of forest lands by indigenous peoples or communities does not always safeguard and promote the newly-recognized rights. Three examples will serve to illustrate this point:

World progress towards recognizing local ownership and access rights has been slow.

- In *Peru*, there is substantial overlap in the areas of habitation of indigenous peoples, remaining natural forests, and mineral ores.¹²⁶ Beginning in the early 1990s, Peru experienced a dramatic increase in mining investment by national and international companies; mining (mainly gold and copper) accounted for more than half of foreign exchange income in 2005.¹²⁷ The government gave easements to mining investors and in so doing violated the protections of collective land titles.¹²⁸ With the recent increase in the price of oil, the government of Peru has allocated about 80 percent of the country's Amazon forests for oil and gas exploration.¹²⁹
- In *Liberia*, even communities with formal title to customary properties, almost all of which have substantial forests, have no rights to the trees on that land.¹³⁰ Moreover the law states explicitly that the people on those lands are unable to object to logging on their own lands. Their consent is not required for leasing of their lands, for up to 35 years, for logging or salvage.¹³¹
- In *Papua New Guinea*, although forest people are constitutionally endowed with property rights over the forests they live in,¹³² they have become victims of the process of industrial timber harvesting. There has frequently been failure to obtain informed consent from communities before logging.¹³³ There have been widespread human

rights violations in cases where forest owners object to the practices of forest entrepreneurs. Politicians and the police have tended to side with the interests of the entrepreneurs.¹³⁴ Promised financial benefits from logging were either not delivered, or if delivered, were too small.¹³⁵

Forest access rights provided on areas designated for use by communities and indigenous peoples also sometimes fail to fulfill the goals they were designed to achieve:

- In *Brazil*, extractive reserves covering more than 12 Mha of Amazonian lands have been created to secure the rights of traditional rubber-tapping communities while promoting forest conservation.¹³⁶ These communities are given use rights to delimited areas of federal forest lands for the extraction of forest products and subsistence agriculture. However, tenure security and resource access is not fully guaranteed as the land tenure regularization process in extractive reserves is rarely concluded. The government agency responsible for supporting the residents and regulating land use within the reserves is failing to prevent incursion on reserve lands. The agency enforces a regulatory framework based on strict conservation models, which restricts residents' forest product sales.¹³⁷ Moreover, in the absence of adequate government protection, the pressures from illegal mineral exploration,¹³⁸ land sales, logging and cattle ranching are threatening community livelihoods.¹³⁹
- In *Tanzania*, a Joint Forest Management (JFM) model has been promoted in central government forest reserves that have high biodiversity value. Unfortunately, participants in JFM find that the legal benefits from the forests are very restricted because of the high conservation status of the forests. Where JFM has been introduced into central government forest reserves that are managed for productive purposes, it has also stalled due to the government's failure to share

timber royalties with communities co-managing the forest. Some observers have criticized the Tanzanian JFM model, saying the management costs imposed on communities far outweigh the tangible benefits that can be realized.¹⁴⁰

- In *India*, the Joint Forest Management (JFM) program, which covers 27 percent of the national forest area and 85,000 village committees, has failed to realize the potential of forests to support

the livelihoods of participants.¹⁴¹ The current JFM model is weighted in favor of state forest department control; many communities view JFM as top-down and imposing external rules that ignore existing management institutions.¹⁴² As explained in a World Bank report: “The JFM benefit-sharing system is overly complex, has high transactions costs, and is focused on a narrow range of revenue generation options at the primary resource level.”¹⁴³

4.2

LACK OF PROGRESS ON COMPLEMENTARY RIGHTS

Though forest tenure rights provide a foundation and essential tools for defending the rights and wellbeing of forest peoples, they do not achieve all that is necessary. Even in cases where forest peoples have formal forest tenure rights, communities and individuals often face serious threats to their lands and livelihoods.¹⁴⁴

There are many non-tenure rights that are essential for forest peoples’ wellbeing.

Many statutory community forestry arrangements are not sufficient to assure improved livelihoods because the tenure rights they establish are weak. Weak tenure arrangements frequently include restrictive management plans and conditional performance reviews, or prohibit the sale and restrict proceeds from forest products. All too often, these weak arrangements fail to recognize customary forms of land ownership and management.¹⁴⁵

There are also many non-tenure rights that are essential for forest peoples’ wellbeing, but are often not enforced. First and foremost among these is the right to citizenship. Many forest peoples lack citizenship and therefore have no legal personality to pursue formal recognition of their property

rights. Forest peoples are also often denied the right to free, prior, and informed consent to external claims on their natural resources. Similarly, forest peoples often lack the right to redress and rule of law, which are key to just resolution of contested claims and conflicts.

According to international human rights law, all indigenous peoples have rights to their customary territories and their cultural heritage, but these rights too are often denied. Customary claims in particular are often disregarded or not fully recognized by central governments. Indigenous forest peoples are often the targets of ethnic and racial discrimination. Women often suffer from tenure and rights deprivation within their societies.¹⁴⁶

Addressing the tenure rights of women is important and particularly challenging. This issue has roots not only in law and politics, but also in culture. Within households, men often dominate decision-making processes, divert income for their own benefit, and regulate access rights to natural resources, just as local elites can within the community. Women face daily discrimination and hardships despite the vital role they play to ensure community and household wellbeing. The extension of statutory tenure rights to communities and households does not mean

women will enjoy the benefits of full citizenship and equity.

In many tenure systems, both customary and statutory, women must rely on their male relatives for access to natural resources. In statutory systems men are often the only ones to receive land titles, while in customary systems women are often denied inheritance rights and must remarry to gain access to land and resources.¹⁴⁷ Women often have little control over income-generating

assets, and their movements and freedoms are often heavily restricted.¹⁴⁸ Worldwide, women's literacy rates are generally lower than men's, which can greatly reduce their ability to understand their rights and interact with statutory institutions to claim them.¹⁴⁹ Following violent conflicts, women often become heads of households yet find difficulty claiming tenure rights without the support of male relatives.¹⁵⁰

4.3

GOVERNMENT PREFERENCE FOR INDUSTRIAL CONCESSIONS AND CONSERVATION OVER PEOPLE

Demands on forest lands are growing at an unprecedented pace. These demands include agro-industrial and silvicultural plantations, pasture lands, natural forest concessions, and mines. Forest lands are becoming commodified in some countries. More forests are being set aside for conservation. With population growth and migration, more forest lands are being colonized as part of agrarian reforms and spontaneous occupations.

concessions in some of the most-forested countries of the world; (2) the biofuels boom; (3) the widening search for oil and other minerals in forest subsoils; (4) natural timber concessions; (5) the creation of forest protection zones; and (6) competition for land and resources among forest peoples themselves.

THE AREA OF CONCESSIONS AWARDED ON FOREST LANDS

Concessions are tracts of land granted to industrial firms or other groups by the government for a stated purpose and a limited period of time. Concessions on forest lands are often granted to industry for logging, harvesting nontimber forest products, mining, exploration for and exploitation of oil and gas, and agricultural production. In some cases, concessions for community forestry or for conservation provide legal protection to forest resources and the livelihoods dependent on them. In Table 1, the area of concessions is classified under the heading "administered by government."¹⁵¹

The 2002 report *Who Owns the World's Forests?* included a table describing public forest concessions in 16 forest countries, which

Demands on forest lands are growing at an unprecedented pace.

Clarification of tenure rights should precede this growing demand on forest lands, but unfortunately, it is lagging far behind. Without progress in specifying property rights, conflict over forest lands is growing. A review of current and anticipated demands on forest lands underscores the point that governments must urgently address the problem.

We present an overview of the main types of growing demands on forest lands with attention to six themes: (1) the current area of industrial forest

comprised 23% of the global forest estate.¹⁵² The authors showed that in these 16 countries the area of public forest allocated to industry greatly exceeded the area of forest land designated for or owned by communities and indigenous peoples. This is important because it reflects the legacy of exclusion of forest peoples from the forests they inhabit, as well as the persistent preference of many governments for industrial-scale over community-scale forest tenure and enterprises. The total area of industrial concessions was smaller than the area owned by individuals and firms.¹⁵³

The area of industrial concessions in these countries is much larger than the combined area of forest lands designated for use or owned by communities and indigenous peoples.

Table 3 below aims to update the analysis done in 2002. The 15 countries in this table are different from the 2002 country cases; 8 countries are common to both data sets. The 15 countries presented in Table 3 comprise 40% of the area of the global forest estate.¹⁵⁴ Figure 3 summarizes the data in Table 3.

Together, Table 3 and Figure 3 demonstrate that the combined area of industrial concessions in these countries is much larger than the combined area of forest lands designated for use or owned

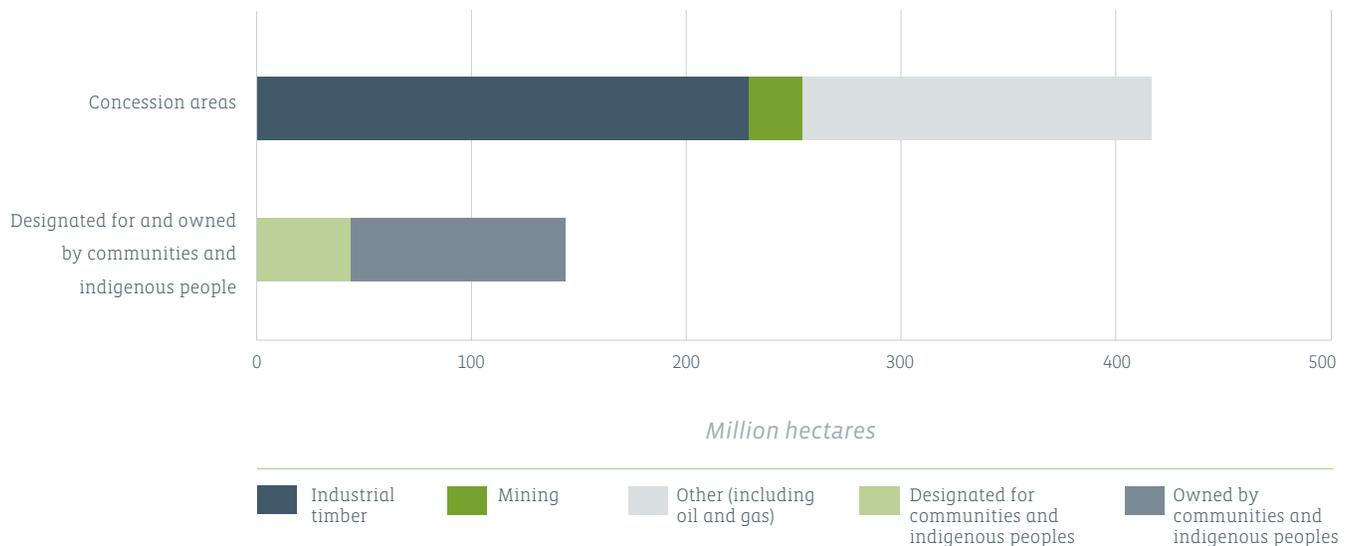
by communities and indigenous peoples. In the 15 countries listed in Table 3 the area of concessions on forest land covers 412 Mha, or 270 Mha more than the forest land designated for or owned by communities (142 Mha, of which 100 Mha are owned). The area of industrial concessions is much larger than the area of lands designated for use or owned by communities or indigenous peoples in all but 5 of the 15 countries.¹⁵⁵ The area of concessions in the 15 countries is 30% of the area of government-administered forests in Table 3. It is important to note, however, that in some cases, concession areas of different types may overlap (e.g., timber and mineral concessions on the same forest land).

In many cases, concessions are awarded on lands that have been designated for use by or titled to indigenous peoples. Despite legal titles, indigenous peoples and communities often do not retain the subsoil rights or the right to fully manage their forest land.¹⁵⁶ In Peru, 45 Mha of land is under contract for oil and gas exploration and exploitation, and almost all titled indigenous lands are affected in some way by these concessions.¹⁵⁷ In the 5 Central African countries listed in Table 3 (Cameroon, Central African Republic, Congo, Democratic Republic of the Congo and Gabon), there are at least 73 Mha of concessions on forest lands for timber and mineral exploitation compared to 1.6 Mha of forest land designated for use by communities.

TABLE 3. CONCESSION DATA FOR 15 OF THE 30 MOST-FORESTED COUNTRIES, 2008
 All figures expressed in millions of hectares (Mha); Numbers have been rounded

Country ¹⁵⁸	Area of forest lands under concession	Area of forest lands designated for and owned by communities and indigenous groups	Comments
Russia ¹⁵⁹	112.22 (timber) 2.43 (other) Total: 114.65	0.00	
Australia ¹⁶⁰	68.30 (pasture) Total: 68.30	20.85	
DRC	22.91 (timber) ¹⁶¹ 6.90 (diamond) ¹⁶² 3.70 (mining) ¹⁶³ Total: 33.5	0.00	Timber concessions are allocated to companies from Belgium, China, India, Italy, Lebanon, Liechtenstein, Portugal, and Switzerland.
Indonesia	38.23 (timber) ¹⁶⁴ 32.77 (onshore oil) ¹⁶⁵ Total: 71.00	0.23	In Indonesia there are 319 natural forest concessions and 219 timber plantations.
Peru	7.30 (timber) ¹⁶⁶ 45.62 (onshore oil and gas) ¹⁶⁷ Total: 52.92	15.48	Many oil and gas concessions are in Amazon forest areas and overlap with titled indigenous lands. ¹⁶⁸
India	0.06 (mining) ¹⁶⁹ Total: 0.06	17.00	
Colombia	2.15 (timber) ¹⁷⁰ Total: 2.15	27.50	
Bolivia ¹⁷¹	6.29 (timber) ¹⁷² 2.50 (NTFP) 0.48 (long-term forest contracts) Total: 9.27	28.56	
Tanzania	0.61 (timber) ¹⁷³ Total: 0.61	3.63	
PNG ¹⁷⁴	10.50 (timber) 4.99 (oil and gas) ¹⁷⁵ 0.19 (minerals) ¹⁷⁶ Total: 15.68	25.51	
CAR	3.40 (timber) ¹⁷⁷ 1.97 (diamonds) ¹⁷⁸ Total: 5.37	0.00	Timber concessions allocated to companies from China, France, Lebanon, and Malaysia.
Congo	7.36 (timber) ¹⁷⁹ 1.28 (copper and diamond) ¹⁸⁰ Total: 8.64	0.46	Timber concessions are allocated to companies from China, Denmark, Germany, Italy, and Lebanon.
Gabon	6.98 (timber) ¹⁸¹ 9.90 (diamonds) ¹⁸² 0.23 (gold) ¹⁸³ 1.81 (onshore oil and gas) ¹⁸⁴ Total: 18.92	0.00	Timber concessions allocated to companies from China, Denmark, France Italy, Malaysia, Portugal, and Switzerland. ¹⁸⁵ Most oil and gas concessions in Gabon are offshore.
Cameroon ¹⁸⁶	4.95 (allocated timber) 1.15 (unallocated timber) 0.30 (gold) ¹⁸⁷ Total: 6.40	1.14	Timber concessions allocated to companies from China, France, Italy, Lebanon, and Netherlands.
Mozambique	4.55 (allocated forest) ¹⁸⁸ 0.07 (uranium) ¹⁸⁹ Total: 4.62	2.00	
Total	412.09	142.37	

FIGURE 3. COMPARISON OF THE AREA OF INDUSTRIAL CONCESSIONS AND COMMUNITY FOREST LAND IN 15 COUNTRIES, 2008



THE BIOFUEL BOOM

World production of biofuels¹⁹⁰ has increased gradually for decades, but in 2006 high prices of fossil fuels, fears about peak oil, and concern about climate change contributed to a boom in investment and production of industrial biofuels. Investors and governments believed that biofuels could be a carbon-conscious answer to energy demand and a more geopolitically secure source of energy. More than 20 countries stated goals for increasing production of biofuels over the next decade and many more have created national targets for greater biofuel consumption.¹⁹¹

Investment in biofuel production soared from US\$2.5 billion in 2005 to \$4.7 billion in 2006, and reached \$2.5 billion in the first quarter of 2007 alone.¹⁹² This flow of financing is fueling a new boom in land speculation for cultivation of biofuel inputs like palm oil, sugarcane, soy, and jatropha.

Various crops (e.g. corn, sugarcane, and soy) can be used either for food, for biofuels, or for other purposes. Because end use for food or fuel is often not determined until after the crops have been

harvested and sold, it is difficult to disaggregate the impacts of growing demand for food and fuel on land use overall. Moreover, biofuel expansion alone is not the whole reason for increased demand for agricultural land; growing population and global consumption are increasing demand for food and there is corresponding pressure to convert more land to agricultural use.

The net effect is clear: soaring demand and competition for land have contributed to record prices for agricultural commodities. High prices are intensifying land speculation, deforestation, and encroachment on an unprecedented scale. The trend is particularly marked in the Amazon basin and Southeast Asia, where these commodities are cultivated on a large scale.

If biofuel investment and consumption continue as currently projected, cultivation of biofuel crops will require an *additional* 30 to 35 Mha of new productive land.¹⁹³ Anticipated land-use change at the country level is difficult to gauge reliably, but the scale of projected growth is immense. Here we draw on estimates of projected growth in the area to be used for production of

industrial crops, including those destined for food and fuel, in several key producer countries:

- In Brazil, 28 Mha are currently under cultivation for soy and sugarcane. By 2020, soy and sugarcane plantations are expected to cover 88 to 128 Mha of Brazilian land.¹⁹⁴

If biofuel trends continue as projected, cultivation of biofuel crops will require an additional 30 to 35 million hectares of new productive land.

- In Indonesia, 6.5 Mha of land are dedicated to oil palm plantations. By 2025, oil palm plantations are projected to require 16.5 to 26 Mha of land in Indonesia.¹⁹⁵
- In China, biofuel cultivation alone is expected to require an additional 13.3 Mha of land by 2020.¹⁹⁶

With increasing land pressure, forests will be converted to make way for plantations. Pasture and small-scale crop cultivation will encroach further on the forest frontier as these activities are displaced by plantations. These effects are well-documented: high prices for soy in Brazil have been directly correlated with increased deforestation in the Amazon in 2001–2004.¹⁹⁷ More recent satellite data show high rates of deforestation in the Brazilian Amazon in states where biofuel crops are cultivated. From 2006 to 2007, deforestation in the Brazilian state of Pará increased 59%, 84% in Mato Grosso, and 602% in Rondônia.¹⁹⁸

As powerful industrial interests move further into the forest frontier, forest peoples in remote areas with insecure land rights will be among the most vulnerable. Central governments frequently promote large-scale plantations as an integral part of a national economic growth strategy, and both legal and illegal expropriation of indigenous and communal forest lands for plantations is spreading unchecked. In Mozambique, a new interpretation of an otherwise progressive 1997 land law is seriously

undermining security of communal land tenure.¹⁹⁹ Other governments are also seeking “available” land for growing biofuels. In 2007, Brazil identified close to 200 Mha of dry-tropical forests, grasslands and marshes as “degraded lands available for cultivation.”²⁰⁰

This intense land pressure has also led to conflict and serious human rights abuses, as forest peoples’ livelihoods and security are threatened by the actions of powerful outsiders seeking access to their land. Murders in the Xingu region of Mato Grosso, Brazil, have attracted global attention in recent years; booming demand for soy is an important factor in the conflict. The 2.6 Mha Xingu Indigenous Reserve is surrounded by soy monoculture plantations.²⁰¹

In Colombia, paramilitary groups are forcibly evicting forest peoples and selling their lands to speculators and palm oil plantations. In Indonesia, extensive human rights abuses, illegal land appropriation, violent attacks, and murder are taking place in forest areas being cleared for palm oil plantations. According to the Indonesian nongovernmental organization Sawit Watch, at least 400 communities in Indonesia have been affected by land conflicts caused by the expansion of palm oil plantations.²⁰²

THE WIDENING SEARCH FOR FOSSIL FUELS AND MINERALS

The expanding global search for fossil fuels (i.e. oil, coal, and natural gas) and minerals is a serious threat to forest peoples and the forests they inhabit. Due to the exhaustion of more readily accessible fossil fuel and mineral reserves, energy companies are increasing their attention to untapped reserves that lie beneath the world’s remaining tropical forests. The pressure to seek unexploited non-renewable resources will continue to intensify, creating economic and political pressures that threaten existing ownership rights

and legal protections for lands containing subsoil deposits of minerals and hydrocarbons. These rights are already far from secure.

Despite trends to support communal titling and management of forest lands, governments are reluctant to relinquish control of subsoil rights to fossil fuels and minerals. In Latin America, state control of subsoil resources is the most critical threat to recent tenure security gains of community groups and indigenous peoples in forest areas.²⁰³

The conventional approach to forest conservation has had negative effects on the livelihoods, wellbeing, health, and culture of the millions of people excluded from forest areas.

THE ONWARD MARCH OF TROPICAL TIMBER HARVESTING

The establishment of agro-industrial and timber plantations and mining concessions are now the leading edge of new pressures on the lands of people living in and near forested areas. Natural forest timber harvesting, although having passed its peak in some tropical regions and countries (e.g. Mesoamerica and most of Southeast Asia), is on the increase in others (e.g. Democratic Republic of the Congo).

One perverse aspect of the lifecycle of natural timber harvesting is that, as legitimate timber supplies in production forests are exhausted, timber entrepreneurs sometimes turn their attention to illegal timber supplies, including in forests classified as protected. An important factor fueling this process is that large sunk costs to create industrial timber processing capacity increase the incentive for companies to violate the law. In Indonesia, over US\$15 billion has been

invested in industrial pulp and paper mills since the early 1990s, despite knowledge that processing capacity far exceeds the legitimate raw material supply available in the country. This overcapacity has been a major cause of deforestation, including in protected areas.²⁰⁴

PUBLIC PROTECTED AREAS AND LOCAL PEOPLE

The conventional approach to protecting forest biodiversity and ecosystem services has been to establish public protected areas where human access is restricted or prohibited. Currently more than 10% of the world's forest area is in public systems of protection, and more than one billion people (among the poorest in the world) live in the world's 25 "biodiversity hotspots."²⁰⁵ Protected areas tend to overlay territories of indigenous peoples, especially in Australia, Brazil, Canada, India, Indonesia, and the United States.²⁰⁶ About half of the 20,000 state protected areas which were created in the past 40 years overlap indigenous customary territories; 86% overlap in Latin America.²⁰⁷

This approach to forest conservation has had negative effects on the livelihoods, wellbeing, health, and culture of the millions of people excluded from forest areas. It is estimated that globally there are 130 million conservation refugees.²⁰⁸ There have been widespread human rights abuses related to government enforcement of forest protection laws. Analysts have commented that preserving biodiversity for its own sake is failing as a conservation strategy,²⁰⁹ and that even if protected areas have been important for protecting rare species and habitats, it is not clear that the human displacement conducted justifies this marginal gain.²¹⁰ The dominant conservation paradigm is challenged by the fact that much of the world's biodiversity is found in areas of human

settlement and not necessarily within the boundaries of the protected areas system.²¹¹

People in the conservation community are increasingly recognizing that one of the solutions to the failings of the conventional forest protection approach is to place more trust in the resource management practices of peoples who have long

lived in the forest, and to undertake a rights-based approach. Community conservation has been expanding in recent decades with the recognition of indigenous and other community land rights.²¹² The area of community conservation in the world's forested areas is at least equal to the area in public protected forest areas.²¹³

4.4

COMPETITION WITHIN AND AMONG FOREST COMMUNITIES

Conflicts over forest lands and resources result not just from the effects of outsiders, but also from resource competition within communities. Among the factors that propel this problem are growth of the market economy and commodification of local resources, the introduction of consumer culture, local population growth, slowed rural to urban migration, and deterioration of not just the quantity but also quality of local resources. The dynamics may involve local elites laying claim to a disproportionate share of resources, but conflicts

may also emerge among households of equal standing or among villages. Two factors aggravate this set of problems. The first is the mutually reinforcing synergy between worsening poverty and increasing resource scarcity and deterioration. The second is the effect of external claims on local resources. As powerful outsiders remove, destroy, or prevent access to resources that local people depend on, shortages can emerge or worsen, causing or aggravating horizontal conflict.

4.5

WEAK PERFORMANCE OF GOVERNMENT IN ADVANCING REFORMS

The difficulties in initiating, implementing, and enforcing forest tenure reform are partly related to weak performance and limited capacity of government. For example, a government agency will sometimes side with an external claimant on local lands and resources. How well can governments serve the interests of forest peoples? Answering this question requires attention to three interrelated aspects of forest tenure reform: (1) government response to competing constituencies; (2) the effect of devolution and tenure reform policies; and (3) the administrative capacity of

branches of government to implement and enforce reform programs.

BIASED ALLEGIANCE IN COMPETITION OVER LAND

One of the functions of government is to serve as an arbiter between segments of society. On the one hand, the corporate sector is intent on advancing market share and financial returns. On the other hand, there are people on the margins of survival, who lack political muscle and economic options, and who seek secure livelihoods, adequate

health and safety, essential services, protection of rights, and just employment.

Statutory tenure reform can sometimes fail if decentralization and devolution have not given sufficient importance to community forest ownership as a policy goal.

The business sector often has the upper hand in this competition through its political connections and financial leverage, and its resulting role in influencing the implementation of policies, laws, and regulations. The problem is worsened by the fact that forest peoples are often among the least politically powerful segments of society for a variety of reasons: they lack income and therefore influence; as racial or ethnic minorities they experience discrimination and marginalization; they inhabit remote rural areas that are frequently overlooked in government investment decisions; and they are sometimes viewed as “obstacles” to the use of lands and resources sought by powerful economic actors.

Yet the lower echelons of society are not always powerless, among other reasons because politicians in many countries must seek legitimation to achieve stable rule. This can require satisfying the needs and aspirations of broad segments of the population, including people in remote areas and their political allies.

DECENTRALIZATION AND DEVOLUTION POLICIES CAN UNDERMINE TENURE REFORM

Statutory forest tenure reforms have often occurred in the context of national decentralization and devolution policies implemented in the last three decades. Statutory tenure reform can sometimes fail, if decentralization and devolution

have not given sufficient importance to community forest ownership as a policy goal. Decentralization is defined as the transfer of “both decision-making authority and payment responsibility to lower levels of government,” and devolution is defined as the “transfer of rights and responsibilities to user groups at the local level.”²¹⁴

Although in some cases decentralization and devolution have undoubtedly served to improve the property rights of forest peoples, this is not always the outcome. Relocation of decision making to a lower level of government does not ensure that the interests of forest-dependent communities will be looked after any more than they were before the change.²¹⁵ There is documentation of cases where decentralization increases the vulnerability of forest peoples,²¹⁶ where devolution policies increase government control over the management of local resources,²¹⁷ and where decentralization encourages local governments to generate income through natural resource exploitation, and as a consequence, minority community land rights are disregarded and past government policies continued.²¹⁸

There is a common thread in these cases that accounts for the negative outcomes of forest decentralization and devolution: lack of power and effective control in forest communities. As observed by Agrawal and Ostrom, “the chances of success of devolutionary initiatives are ... related to the role played by collective action. Thus, it matters whether local institutions self-organize, or whether they are mainly the result of administrative fiat.”²¹⁹ Other important conditions for increasing the success of forestry decentralization and devolution are improved control over local authorities, the framing of specific policy demands by local actors’ associations and movements,²²⁰ and well-functioning democratic processes.²²¹

LOW CAPACITY AND WEAK IMPLEMENTATION

Even assuming there is political will for government to recognize rights and carry out tenure reform, this does not ensure success. There must be adequate administrative capacity and implementation within the various branches of government to demarcate, delimit, and enforce forest tenure rights. The major deficiencies fall into four areas: failure of coordination among branches of government; budget constraints; lack of expertise; and problematic content of policies.

Efforts to strengthen local forest tenure have been slowed or paralyzed by failure of coordination among branches of government. This can take the form of horizontal gridlock (between sectors and ministries) or vertical gridlock (between levels of government). Among the problems that can block progress are: disagreement over limits of jurisdiction; overlapping authority over the same area of land; policies that are mutually incompatible; inability to focus on forest land tenure because other issues take precedence; corruption; and budget constraints which can make any of these problems worse.

Forest management arrangements are frequently unworkable for local people because the regulatory obstacles are too great.

Budget constraints are a fundamental problem because they can slow, stop, or undermine the quality of forest tenure reform at all levels. In Bolivia, insufficient budgetary support for completing community and indigenous land regularization and titling pose a threat to local rights and livelihoods.²²² In Uganda, inadequate

fiscal support from the national government has been a contributing factor to the inability to fully implement decentralized forest management.²²³

Implementation of tenure policies and of efforts to improve local tenure rights requires a wide range of skills that are often lacking, especially in the lower echelons of government. Inadequate funds and knowledge often accompany the transfer of administrative responsibilities from higher to lower levels of government. In India's forest sector, for example, the government suffers from a wide variety of capacity deficiencies including the ability to conduct mapping and forest resource assessments; moreover, the geographic area of responsibility of the field staff is too large, and there is limited capacity for conducting financial and economic analysis on behalf of communities.²²⁴

In addition to constraints on improving land rights, governments frequently hesitate to reform the regulatory system, which diminishes rights to use and benefit from forest lands.²²⁵ Forest management arrangements are frequently unworkable for local people because the regulatory obstacles are too great. The arrangements may require villagers to file applications, formulate and present management plans, conduct monitoring, and perform other tasks at a level of cost or sophistication that is beyond their reach. Contributing factors to these outcomes are: lack of understanding of local capabilities; administrative fiat by levels of government that are far away; insufficient appreciation for customary management systems (i.e. "modern" and "sophisticated" forest management systems are often designed to supplant local ones); and the arrogance and unaccountability of bureaucratic culture.

4.6 SUMMARY OF THE CHALLENGES

Clarifying and improving forest tenure rights is a tall challenge. In countries where forest peoples have formal tenure rights, some are unable to exclude powerful outside claimants and are unable to realize the full potential of forest lands and resources to secure or improve their livelihoods. External threats to local ownership of and access to forests are likely to increase in the near term because of the increasing scarcity of fossil fuel supplies (i.e. the biofuel boom and the search for fossil fuels and minerals underlying forests), the increasing demand for various kinds of agro-industrial and silvicultural production and mining, and the legacy of an outmoded model of protecting forest biodiversity and ecosystem services. Horizontal conflict among forest peoples and communities also poses a monumental problem. Governments are an important dimension of the challenge because they are susceptible to being swayed by the rich and powerful, because

some aspects of forest decentralization and devolution have not ended up favoring the interests of forest peoples, and because the administrative capabilities of government may be limited.

There is a fundamental problem that perpetuates this state of affairs. Forest peoples tend to lack the political power necessary to counteract the forcible appropriation of their lands and resources and to promote policies that would protect and enhance their rights. As various observers have rightly pointed out, rights lack meaning and utility unless they are accompanied by the power to enforce them.²²⁶

In sum, there is slow progress and many constraints. At the same time, there is in fact much progress in some places and some signs of the ways the situation can be improved. We now turn our attention to these signs of progress.

5

SIGNS OF PROGRESS

Although there are daunting obstacles to the realization of improved statutory forest tenure reform, there are four areas in which we see signs of progress: (1) recent policy changes in various countries that signal at least an intention to join the worldwide trend toward strengthening local forest tenure; (2) research findings suggesting that strengthened forest tenure can under some

circumstances improve wellbeing, provide the means to exclude outside claimants, and improve forest management and conservation; (3) possible leverage that forest peoples might gain as a result of global responses to climate change; and (4) the emergence of grassroots mobilization for forest tenure reform.

5.1

LAW AND POLICY DEVELOPMENTS THAT CLARIFY AND STRENGTHEN TENURE

Global trends in law and policy development show increased concern paid to communities' and indigenous peoples' rights to land and forests. Shifts at the international level have been translated into national policies over the past five years in several countries. However, these policies and laws must not be interpreted as complete responses to deep-rooted inequities.

For many years, indigenous peoples' movements have pressured global and regional organizations to acknowledge their historic resource rights, including their rights to forest lands. In September 2007, the United Nations General Assembly nearly unanimously adopted the United Nations Declaration on the Rights of Indigenous Peoples.²²⁷ The Declaration stated, among other things, that indigenous peoples "have the right to the lands,

territories and resources which they have traditionally owned, occupied or otherwise used or acquired."²²⁸ Meanwhile, other international institutions have increased their promotion and recognition of community rights, not just indigenous peoples' rights, in national policy and legislation.

Since 2002, many forested countries have passed legislation to give indigenous peoples and communities stronger rights to forests (summarized in Table 4).²²⁹ In a show of commitment to its indigenous peoples, Bolivia adopted the UN Declaration as national law in December 2007.²³⁰ Bolivia is also implementing a policy to clarify land and forest rights in a process known as *saneamiento*, which has already provided titles to many indigenous communities.²³¹

Brazil's 2006 Law on Public Forest Management²³² permits the allocation of forest concessions to communities and gives special attention to the recognition of and respect for local communities' rights to forests.²³³ Communities in the Democratic

Since 2002, many forested countries have passed legislation to give indigenous peoples and communities stronger rights to forests.

Republic of the Congo have also obtained the right to receive forest concessions, but to date there is no evidence that concessions have been allocated to communities.²³⁴ Similarly, in Indonesia, the creation of the People's Plantations Policy with long-term leaseholds of 100 years is seen as a positive step towards greater community control over timber resources.²³⁵ In Angola, the government passed the 2004 Land Law²³⁶ which "recognizes and protects the land rights of communities" based on customary use and occupation, including those to forest lands.

The cases of Angola, DRC, and Indonesia bring the implementation issue to the forefront. While legislation in many countries recognizes and states an intention to protect community rights, there is often little implementation at the local level for a variety of reasons. For example, in Mozambique, the 1997 Land Law²³⁷ acknowledges the community tenure rights of historic occupants, but surveys have shown that government officials responsible for implementing the law and supporting communities asserting their rights have little awareness about the rights and procedures to secure them.²³⁸

In other countries, deforestation mobilizes support for protecting indigenous peoples and other communities. This is the case in Argentina, where laws have been passed to stop logging on indigenous peoples' lands. Widespread protests in Argentina led to the 2007 Forest Law,²³⁹ which declared a moratorium on logging.²⁴⁰ The new law requires public hearings before any logging activities can take place, and it prioritizes the rights of many local communities and indigenous peoples over logging interests.

India's Forest Rights Act of 2006²⁴¹ provides for vastly improved rights to forest lands compared to the Joint Forest Management (JFM) regime in place today. The legislation secures the rights of tribal communities to benefit from their forests, although the process to determine how much forest land will be transferred to communities is still underway. In Vietnam, the government has implemented forest tenure reform over the past several years, transferring 3.5 Mha to local communities. Research shows, however, that the most productive forests often remain in the hands of the government, and local communities do not understand their new rights.²⁴²

While the overall trend in policy and law has been toward an increased recognition of the role communities play in forest management and their historical rights to territories, more concerted effort is needed locally and nationally to improve the implementation of such policies. Where such policies and laws do not exist, mass mobilization, lobbying and advocacy, and legal challenges may be viable strategies to increase and improve community forest rights. As the idea of community rights is increasingly accepted, effort is needed to ensure that rights on paper turn into rights in reality.

TABLE 4. RECENT POLICY AND LAW DEVELOPMENTS THAT STRENGTHEN COMMUNITY TENURE RIGHTS

Country	New Policy or Law	Effect
Angola	The 2004 Land Law recognizes the rights of communities to land acquired according to customary law. ²⁴³	Community titling underway. Several thousand hectares of land have been titled to San communities. ²⁴⁴
Argentina	The 2007 Forest Law suspended forest clearing and orders that public hearings be held before clearing can take place. It also mandates that forests used by peasant and indigenous communities be protected. ²⁴⁵	Each province manages its forests and the effect of the moratorium is not clear.
Bolivia	National Law 3760 of 2007 adopts the UN Declaration on the Rights of Indigenous Peoples as national law. ²⁴⁶	
Brazil	The 2006 Law on Forest Management aims to combat deforestation in the Amazon and provides for the demarcation of public forests including indigenous areas. The law also provides for concessions to local communities. ²⁴⁷	The Brazilian Forest Service published data on the area of public forest under indigenous and community ownership in July 2007. ²⁴⁸
Cameroon	The 2001 order 0518/MINEF/CAB specifies additional community rights to acquire community forests. ²⁴⁹ The order demonstrates government commitment to the community forest program and establishes a new regulatory framework.	See Table 1. There is an increasing number of community forests.
China	The New Countryside Development Initiative of 2005 allows for increased local decision-making power over forest management and tenure arrangements in collective forest areas. ²⁵⁰ The Property Law of 2007 defines collective ownership as joint ownership by all members of the community. ²⁵¹	Research on the effects of the 2005 policy shows no clear trend towards individualization of forest areas. ²⁵²
DRC	The 2002 Forest Code allows community concessions and transfers management responsibilities to local communities. ²⁵³	There is no evidence of community concessions.
Gambia	The 2002 Local Government Act gives decentralized area councils the responsibility to protect, control and manage the forest resources located in their jurisdiction. ²⁵⁴	
Honduras	The 2007 Forestry Law provides for the participation of communities in forestry consultative councils, the regularization of forested lands with demarcation of areas of protection, conservation, and community management. ²⁵⁵	The implementing regulations have not been passed.
India	The 2006 Forest Rights Act provides for a series of rights to scheduled tribes and other traditional forest-dwelling communities to forest land including more decision-making power over natural resource management. ²⁵⁶	The area to be transferred to communities and households is still to be determined. Estimates range up to 10 Mha.
Indonesia	Creation of People's Plantations in 2007 with long-term leaseholds of up to 100 years over state forest area. ²⁵⁷	Not clear how the policy will be implemented.
Mali	Under the 2002 Tenure Law, communities and private individuals were granted the right to possess forests and customary use rights and institutions were recognized. ²⁵⁸ The 2007 Forest Policy reaffirms the government's commitment to promoting community forest management. ²⁵⁹	
Niger	The Forest Code of 2004 promotes the transfer of forest management responsibilities to the regions, departments and communities. ²⁶⁰	
Romania	In 2005, Law 247 removed limits on the total amount of forest land that private owners can claim from the state through the process of forest restitution. The law eliminates the cap established by the 1991 Law on Land Resources. ²⁶¹	Approximately two thirds of Romania's forests will be returned to private owners.
Sudan	The Forestry Law of 2002 (Article 33/E/2) states that Popular Forests or community forests shall be administered by committees selected by the citizens of the area. ²⁶²	
Tanzania	The 2002 Forest Act introduced Participatory Forest Management, which provides a clear legal basis for communities, groups or individuals across mainland Tanzania to own, manage, or co-manage forests. There are two regimes in place: Community Based Forest Management (CBFM) with stronger rights than Joint Forest Management (JFM). ²⁶³	There are increasing numbers of CBFM and JFM areas.

Country	New Policy or Law	Effect
Thailand	The 2007 Community Forestry Bill upholds the legal right of forest communities to preserve and manage forest land surrounding their communities. ²⁶⁴	
Venezuela	In 2005, Venezuela's legislature passed a new law on indigenous peoples and communities which includes a provision ensuring the land and property rights of indigenous peoples and communities. The law also specifies the process for demarcating and titling indigenous lands, recognizing ancestral rights to forest lands and specifying the process for demarcating and titling indigenous lands. ²⁶⁵	Approximately 0.7 Mha have been titled to indigenous peoples' communities in agricultural areas.

5.2

THE IMPACTS OF FOREST TENURE REFORM

There are many motivations for strengthening forest tenure, including recognition of human rights, upholding dignity, defending cultural survival, and helping assure forest peoples' place in the world. In addition to these, there are more utilitarian goals advanced by governments and development organizations. These include the ability to reduce poverty, diminish conflict, and improve forest management and conservation. As progress on statutory reform is limited, so is the progress of science in assessing the impact of tenure reform outcomes. Nevertheless, there is general agreement in the development community that secure property rights are central to achieving social, economic, and environmental goals.

Secure property rights are central to achieving social, economic, and environmental goals.

Although it is not yet conclusive, there is emerging evidence of the impact of forest tenure reforms on income, the ability to exclude claimants, and forest conservation and management. Rather than compile an exhaustive summary of the research literature, we here provide some illustrative findings.

Recent studies in various countries show that strong formal forest tenure rights can improve the income of beneficiaries. Research on 200

households in Mexico shows that community forest enterprises can help reduce poverty.²⁶⁶ Cost-benefit analysis in Bolivia shows that, all other factors being equal, the income from timber exploitation is higher if the forest users have legal alienation rights to forest products.²⁶⁷ Research in China concludes that forest tenure change led to increased farmer revenue from forests, including timber harvests.²⁶⁸

In Section 4 we documented cases where formalization of forest tenure rights does not necessarily provide an effective basis for excluding claimants. Fortunately, there are some counterexamples. In Nicaragua, recognition of the rights of indigenous communities to their historic territories led to the suspension of logging concessions in indigenous territories and no new concessions were granted.²⁶⁹ In Eastern and Southern Africa, some communities have gained security over the local forest commons through changes that have allowed people to own land in common; as a consequence, these landholdings were less vulnerable to appropriation by others.²⁷⁰ A 1998 decree by the Indonesian government enabled farmers in Krui, Sumatra to register their rights to lands farmed on state forest land. As of 2005, none of the communities had applied to register their rights, but nevertheless, the decree was instrumental in stopping outsiders' attempts to appropriate these forests.²⁷¹

Many studies have found that strengthening forest tenure security can result in improved management and conservation of forests, and conversely, that weak tenure can result in poor management and conservation outcomes. In the Brazilian Amazon, inhabited reserves tend to

inhibit deforestation and forest fires when compared to uninhabited parks,²⁷² and insecure property rights are one of the main causes of deforestation.²⁷³ In Uganda, well-known and enforced forest property rights are associated with improved forest condition.²⁷⁴

5.3

THE OPPORTUNITY OF CLIMATE CHANGE, BARGAINING POWER, AND THE RIGHTS OF FOREST PEOPLES

Slowing deforestation and promoting afforestation and reforestation have suddenly become a policy priority not just to slow greenhouse gas emissions from forest conversion, but also to safeguard and increase the role of forests in maintaining the global carbon balance and absorbing surplus carbon from other sectors.

In this context, forest communities and individuals with forest ownership rights have more bargaining power than those who remain tenants of the state. These owners can participate in and potentially be compensated by climate mitigation programs. So these owners have leverage in determining whether these schemes succeed or fail, and as such, the terms of their compensation for their contribution to the public good. Forest land managers are a heterogeneous group that includes everyone from indigenous peoples to the leaders of corporations conducting business in the forest landscape.

The extent to which local people can effectively participate in and benefit from climate regimes depends on many questions regarding rights. To begin, who owns the carbon? More specifically, who owns the carbon sequestered in trees and forest soils, and who owns the rights to the avoided carbon emissions? Who should be compensated for protecting the world's forests, thereby helping assure climate stability? Will they be only those who have formal and secure tenure? If so, the arrangements run the risk of excluding the poor, because it is disproportionately they who lack

secure formal tenure. Will they be those who not only have secure formal tenure, but also those with the largest landholdings? There will be strong appeal to take this approach in order to minimize transaction costs, but this approach will also exclude the poor. Will the system favor those who threaten the most damage to forests? If so, then once again, the bigger players will be favored as participants in such schemes.

There is a moral imperative to include the poor and those without secure tenure in forest-based carbon sequestration schemes. But there are also practical incentives to include the poor and tenure-insecure in carbon sequestration schemes: vast areas of the forest landscape are inhabited by the poor; there are risks of moral hazard in rewarding land owners who do the most damage; and there is a risk that forest peoples can find ways to thwart the success of carbon sequestration schemes if they are excluded from the stream of benefits.

The leading approach for involving forest land managers in carbon sequestration, called REDD (Reducing Emissions from Deforestation and Degradation), involves establishing a system of compensation that is financed either through carbon trading or through international conservation funds.²⁷⁵ Many analysts writing about REDD options have called for strengthening tenure and local involvement to ensure that forest peoples benefit. Additional provisions are advocated to ensure the best possible outcome for indigenous

and other forest-dependent peoples: they must be involved in debates about the pros and cons of REDD arrangements;²⁷⁶ their human and customary rights must be respected;²⁷⁷ there must be clarification of the legal and ownership status of

carbon, provision of accessible market information, and an oversight mechanism in the carbon value chain;²⁷⁸ and institutions must be established to ensure poor people do not lose out in the arrangement.²⁷⁹

5.4 THE GROWTH OF ORGANIZATIONS AND NETWORKS IN SUPPORT OF FOREST TENURE REFORM

Collective action and empowerment are necessary to strengthen forest tenure rights and to enforce them once they are obtained. It is therefore encouraging that there is an increasing level of organization and institution-building in support of forest tenure reform. Collective action to advance rights over land and resources is not new, at least at the local level. It has existed for as long as forest peoples have felt their livelihoods at risk and their rights violated.

historic territories is probably the most important factor behind increasing community control of forests.²⁸¹ A report on land rights and reform of governance in Africa remarks that “a more action-based and community driven evolutionary process is needed” because it will be important to “drive and sustain political will towards real removal of the chronic tenure insecurity of the poor.”²⁸² A paper on forest tenure in Asia says that in Nepal there is “a strong, organised social movement of community foresters who have been able to resist pressure from the Forestry Department to reassert control over forests where timber values have been restored. This social movement has even played a wider role in maintaining a democratic, national political process but still faces challenges in extending the community forestry model to the lowland forests (*terai*) and to allow community foresters to sell timbers outside their areas.”²⁸³

The growth of the forest rights movement is also evident in various other ways. International forestry organizations, including those involved in research, have developed a rights-based approach in their work in recent years. International donor organizations are beginning to place forest rights high on their agendas. National and regional networks have emerged or strengthened.

At the international level, the forest tenure movement is experiencing challenges, among them: diverse views and interests among participants, sometimes making communication, agreement, and decision-making difficult; and pressure to learn

Collective action and empowerment are necessary to strengthen and enforce forest tenure rights.

What is new in recent years is the growth of organizations and networks supporting forest peoples, and an increasing degree of integration, inter-communication, and visibility that reflects the scale of both the threats experienced by forest peoples and the opportunities.

The growth of these movements and their effects are documented and evaluated. A report analyzing four cases in Central America and Brazil found that “[a] combination of indigenous capacity for collective organization and significant external assistance helped produce grassroots forest movements capable of becoming proactive partners in the management and defense of protected areas.”²⁸⁰ A study on forest tenure and poverty in Latin America observes that “...the demand of indigenous peoples for recognition of

quickly and multitask because of the importance of forest tenure in connection with emerging global issues (e.g. food shortages, biofuels, and climate change). Along with the challenges, there are golden opportunities created by two factors. First, technology has improved communication among people and institutions in the movement, enabling rapid dissemination of information and decision making. Second, the forest rights agenda is growing

quickly in part because of a fundamental change in its composition. Forest rights are no longer just a moral issue, but a much wider one propelled by an emerging understanding that clarification and strengthening of forest tenure is at the core of many global issues such as human rights, violence and conflict, economic growth, and climate change.²⁸⁴

5.5 WHERE WE STAND, ON BALANCE

In this report we have found that, since 2002, the trend to shift tenure out of the public domain and towards the private domain continued. The total area of forest administered by government has decreased, and the total area of forest designated for or owned by communities and indigenous peoples, and owned by individuals and firms has increased in the 30 most-forested countries. Moreover there have been important policy reforms strengthening rights in at least 18 countries in the world since 2002.

Some of the news related to this trend is disappointing. The dominant pattern in 2002–2008 was no change in the number of countries increasing area of forest designated for or owned by communities and indigenous peoples, and owned by individuals and firms among the 30 most-forested countries (Figure 2). In many countries, formal rights of forest peoples are often not enforced. Often attention to tenure alone is insufficient for protecting and improving the wellbeing of forest peoples. The area under industrial concessions is still much larger than the area of formal community access or ownership. There is a pronounced recent trend towards increased acquisition of forest lands for industrial purposes. The traditional conservation model and competition for land and resources among forest

inhabitants pose persistent challenges.

Government does not always perform well in clarifying and formalizing tenure rights for reasons related to competing interests, inadequate attention to property rights in decentralization and devolution programs, and weaknesses of administration.

However this unfortunate reality is counter-balanced by substantive progress. Many new national forest tenure policies have been created in recent years, indicating a broadening of the forest tenure transition in the near future. The formalization of local forest tenure rights has recognized the human rights of many and has, in many cases, improved the wellbeing of forest peoples, enabled forest landholders to exclude unauthorized claimants, and led to improved forest management and conservation. Climate change has created a possible opportunity for forest peoples to gain bargaining power in protecting their interests and in determining their destinies. Collective action and institution-building to reform forest tenure has grown in recent years.

How can we work to ensure that the positive trends and opportunities prevail over the many challenges? In the next section, we present a list of ideas for moving the forest tenure reform movement forward.

6

OPPORTUNITIES FOR MAKING BETTER PROGRESS

Who owns the world's forests? National governments still claim ownership of most of the world forest area. There has been change toward less government control, but progress has been slow and largely concentrated in a small number of countries.

The need for change is urgent. The process of statutory forest tenure reform must begin where it has not yet started and then progress rapidly. Reforms should: prioritize ownership rights over mere access; ensure that both ownership and access rights, where already conferred, provide the protections and benefits that are offered in the letter of the law; and improve upon the tenure rights already conferred where they are deficient.

The forest tenure transition should signify not just a change from government to non-government administration of forests, but also a shift from exclusion to ownership by forest peoples.

Clarifying and strengthening forest tenure, including the recognition of customary claims, is an urgent ethical priority. Most forest peoples still experience the exclusion imposed centuries ago. It is time for this era of injustice to end. The forest tenure transition should signify not just a change from government to non-government

administration of forests, but also a shift from exclusion to ownership by forest peoples.

Forest tenure reform is also a practical priority. Addressing land and resource disputes and creating tenure security for all stakeholders can resolve violent conflicts, create incentives for household investment, lay the foundation for stable and predictable investment by the government and the private sector, and contribute to national and regional economic growth. Resolving ambiguity in forest property rights is a key first step towards protecting and increasing the capacity of the global forest estate to sequester carbon, and thereby address one of the key causes of climate change. At this moment in history, forest tenure reform can benefit *all* of society, not just forest peoples.

The 2002 report *Who Owns the World's Forests?* set forth key areas of opportunity for advancing forest tenure reform. In many ways, not much has changed—those recommendations are as relevant now as they were then. Here we build upon those recommendations and propose specific roles that groups of stakeholders might play in advancing reforms.

CREATE A VISION, SHARE KNOWLEDGE AND IMPROVE UNDERSTANDING

If countries have not yet developed a vision and plan for forest tenure reform, it is a priority for

them to do so. In cases where forest tenure reform has been undertaken, forest peoples must be well informed of tenure policies and legislation, and of their own rights and responsibilities within this framework. To achieve this end, governments can create and publicly disseminate strategies for implementing tenure reforms. Governments can consider strategies which aim to improve tenure reform performance on the basis of lessons learned and best practices. Full realization of effective reforms must also include capacity building within communities to ensure they understand new legislation and have the confidence and ability to assert their right to full participation in the control of land and resources in their communities.

CREATE AN ENABLING POLICY ENVIRONMENT

An enabling policy environment for accelerating and improving the implementation of forest tenure reforms is an essential pre-condition for improving tenure security. First, an enabling environment must strive for equity and encourage full civic participation. To achieve this, governments and advocates should:

- Establish and support full citizenship rights for all and the political space and freedom for participation as a political constituency
- Ensure the active participation of forest peoples in tenure policy and law development processes
- Disseminate information and conduct public debate on the positive and negative consequences of industrial concession policies
- Institutionalize and enforce application of free, prior, and informed consent in forest land allocation processes
- Consider social equity in the formulation and implementation of forest tenure reforms, particularly the rights of women and minorities

Second and equally important, an enabling policy environment must have efficient and effective systems of governance. To achieve this, policy makers and advocates should:

- Establish, strengthen, and support effective mechanisms and institutions of regulation over land and resource use
- Establish, strengthen, and support independent judicial arbitration systems
- Diagnose and resolve administrative gridlock and overlapping inter-departmental authority in the forest sector
- Strengthen capacity building for government staff involved in management of forest areas and tenure reform processes
- Strengthen the capacity of communities to govern their forest lands, particularly where forest reforms have been recently initiated

INVEST TO ACCELERATE REFORMS

The recognition of property rights and statements of vision and policy are not expensive undertakings—especially relative to the benefits and revenues of the forest estate. Yet in some cases funds for tenure demarcation and delimitation may be beyond the reach of developing countries' governments. Multilateral agencies and other donors with an interest in supporting effective forest reform may partner with governments to support and finance forest reforms. Climate change is adding to the urgency of forest tenure reform and is creating opportunities for some forest peoples and countries; multilateral agencies and private sector entities investing in REDD strategies and carbon markets may become sources for complementary funding. Each of these investors may partner with governments to support:

- Improved data collection, documentation, and clarification of existing forest tenure systems
- Creation of opportunities for dialogue within communities, and at the policy level, for forest peoples' representatives
- Design, public dissemination, and implementation of tenure reforms
- Steps to strengthen full civic participation of forest peoples in the tenure reform process

- Steps to strengthen effective systems of governance in forest areas

DEFINE, CLARIFY AND STRENGTHEN PROPERTY RIGHTS TO ECOSYSTEM SERVICES

It is important to clarify not only property rights to land and resources, but also the rights to ecosystem services provided by forest lands. These services include carbon sequestration, watersheds, biodiversity, and ecotourism. The emergence of climate change as a major global issue underscores the importance of clarifying property rights to carbon not just locally, but also on a national scale. These systems must be defined in a participatory process that recognizes customary systems of ownership and management rights to ecosystem services.

STRENGTHEN KNOWLEDGE AND INFORMATION ABOUT FOREST TENURE

There continues to be a lack of adequate information on tenure claims, conflict, and ownership in the forest areas of most countries. Two changes are needed. First, the provisions of statutory tenure laws themselves should be clarified. A clear legal framework for forest tenure rights is essential for resolving uncertainties and disputes around access to forest resources, and for laying the foundation for new and improved tenure regimes. Second, there should be accurate, detailed, and publicly available information on ownership and control of forest resources.

Since 2002, there has been noticeable improvement in tenure data collection for some countries, but in most the inadequacies remain. In many countries, even basic census data of numbers of forest residents is absent or unreliable; for some there are no public data at all. We note in this report that forest land-use change is far outpacing

tenure reform. This underscores the urgency of developing accurate and reliable knowledge on both statutory and *de facto* forest tenure.

POTENTIAL ROLES OF STAKEHOLDERS

Here we identify some roles that should be played by key stakeholders to ensure that forest tenure reforms serve forest peoples and society as a whole.

Governments should take steps to improve, launch, or accelerate the forest tenure transition. Among the most important steps are to: address corruption and collusion between industry and individuals in government; address problems in the judiciary system so that it can function properly for land and resource dispute resolution; engage with forest peoples and ensure that they are included in national policy and law development processes; document customary claims to forest lands and their associated tenure systems; conduct land and resource tenure training to overcome capacity deficits; resolve the issue of overlapping responsibility among government departments and ministries for the same forest lands; reduce the logistical and financial hurdles sometimes faced by people who obtain statutory rights (e.g. the preparation of complex management plans); and help create equal opportunities for small and medium forest enterprises to compete with larger ones.

Forest-dependent peoples can engage in collective action, lobbying, and advocacy to promote tenure reform legislation and to compel enforcement of existing legislation. Forest peoples can benefit from REDD provisions under discussion. However, these benefits will likely accrue only if forest peoples exercise their leverage, and they will only have bargaining power if they are well organized. Forest peoples must be involved in debating the pros and cons of REDD arrangements.

Multilateral development banks and other donor agencies can follow through on the emerging understanding that forest tenure has implications beyond the forest sector. Consistent with this they can elevate the profile of forest tenure in their programs and financing. If multilateral banks have a role in the implementation of REDD, their actions will benefit from approaches that accelerate clarification of tenure and recognize the role of otherwise marginalized people. Multilateral banks should also create and support a mechanism to oversee investment in carbon finance and climate change mitigation mechanisms, thus enforcing respect for forest peoples and for their rights to forest lands and resources.

Responsible industries making investments on forest lands should take advantage of the opportunity to demonstrate support for and compliance with free, prior, and informed consent provisions.

Forest management certifying bodies can take on board tenure and rights in their standards. Moreover, they can consider certifying small and medium forest enterprises that are alternatives to the industrial model.

Environmental NGOs can carry forward the paradigm shift in the direction of community conservation, can become advocates of tenure reform, and can participate in the creation of pro-poor systems of payments for ecosystem services.

ANNEX 1

THE CHALLENGE AND RISK OF COMPILING WORLD STATUTORY FOREST DATA

Compiling reliable and updated data on world forest tenure is a time-consuming and complicated challenge. Though forest tenure and tenure dynamics are important, there has been no world institution taking full responsibility for monitoring and updating the data. Moreover, most governments do not make tenure information available to the public or do not collect it systematically.

In many countries, the institutions responsible for forest tenure data collection and classification change over time, as do their methods. This complicates the task of assuring that data changes from one period to the next are real and not merely a reflection of changed metrics.

Governments collect data according to national tenure classifications, which are not standard across countries. In order to compile world forest tenure data in one table it was necessary to group tenure regimes by standard categories. This required a thorough understanding of the national legal framework, context, and geography. It also required verification from forest and land tenure specialists familiar with each country's context.

Although we made an effort to include in our data set only information that achieves minimum standards of reliability and consistency across periods and across countries, we may have made some errors. We welcome feedback on how to improve our approach, data sources, and data. This is important not only for retrospective corrections (we will be posting Table 1 online and making corrections as necessary) but also for improving our monitoring and analysis in the future.

Fortunately, the FAO has begun compiling forest tenure data worldwide through regional tenure assessments in selected countries in Africa and Asia.²⁸⁵ FAO's *Global Forest Resources Assessment 2005* limits its forest tenure statistics to public and private tenure, but the 2010 assessment will include data on forests under individual and community ownership.²⁸⁶ Hopefully the FAO and national governments will continue to develop and refine their tenure information management approaches to make future compilation, monitoring, and analysis more complete and robust.

Beyond the challenge of compiling national government data on world forest tenure there is also the risk of legitimizing the government outlook on forest tenure over other, often competing perspectives. Non-formal land claims—including but not limited to customary land tenure—often greatly exceed the area of land formally awarded to communities and individuals by governments. This view is sometimes at variance with, or even in conflict with, the formal government land documentation.

ANNEX 2

TECHNICAL GUIDELINES FOR COMPILING DATA ON STATUTORY FOREST TENURE CHANGE

Tables 1 and 2 present the most reliable and up-to-date government data on statutory forest tenure available for 2002–2008. Since definitions of tenure categories vary among countries, and because governments often do not collect forest tenure data in a systematic way, the following guidelines were developed to select the most accurate data possible in compiling Tables 1 and 2.

1. Priority for selecting data sources will be as follows: (1) government information sources; (2) government figures cited by other organizations (e.g. FAO); and (3) trusted independent sources.
2. Only absolute numbers will be presented. Averages based on different sources will not be included.
3. The most current and reliable data will be presented. Data points in original sources must refer to years ranging from 2002 to 2008 to be included in the 2008 column. If no data are available for years after 2001, the data may be repeated if in-country sources confirm their current validity.
4. In cases where it is impossible to find accurate absolute numbers, percentages from reliable sources may be applied to the total forest area presented in the same source or to the area of the legal forest estate.
5. One of the following three conditions must be met in order to make retrospective changes to the 2002 table data: (1) 2002 data become available that were not available in 2002; (2) miscalculations were made in the 2002 data; and (3) changes made in the definition of “forest area” require adaptation of the 2002 data to maintain time-series consistency.
6. In some cases where the 2002 tenure data included “Other Wooded Lands” (OWL, lands with 5–10% canopy cover as defined in FAO 2006a), the 2008 tenure data includes OWL.
7. Where possible, data points will be verified by in-country forest tenure specialists.

ANNEX 3

MAIN CONSIDERATIONS IN CREATING A FRAMEWORK FOR THE 2002–2008 COMPARISON IN TABLE 1

There were four main methods considerations taken into account in creating a framework for the 2002–2008 time series comparison in Table 1:

- *Retrospective discovery of improved 2002 data.* In some cases, we discovered more accurate data for the 2002 table. For example data on forests owned by communities and indigenous peoples in Peru were changed because of inaccurate conversion of square kilometers to hectares in the 2002 report.
- *Changing definition of forest.* In 2002 the authors cited Australian government data that included “Other Wooded Lands”. The 2008 data do not include OWL. That change reduced the reported national forest area drastically, from 579 Mha in 2002 to 147 Mha in 2008. We decided to use data from the original 2002 source, but we excluded OWL in order to ensure comparability with the 2008 figures.
- *Assignment of data to different columns.* We found it was best to reassign some 2002 data to different categories on the basis of new knowledge. For example, the “designated for use by communities and indigenous peoples” data were moved to the “owned by communities and indigenous peoples” column for Brazil and Canada.
- *Exclusion of comparisons for country cases where complete and reliable data were unavailable for both years.* Complete and reliable data were unavailable for Colombia, Malaysia, Mozambique, and Peru in 2002. Complete and reliable data were unavailable for Argentina, Malaysia, and Mexico in 2008.

ENDNOTES

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- ² White and Martin 2002:6.
- ³ White and Martin 2002:11.
- ⁴ White and Martin 2002:16,19.
- ⁵ Adapted from: Food and Agriculture Organization of the United Nations (FAO). 2002. Land Tenure and Rural Development. FAO Land Tenure Studies 3. Rome: FAO. p7.
- ⁶ We borrow this term from: Ellsworth, Lynn. 2004. A Place in the World: A Review of the Global Debate on Tenure Security. New York: Ford Foundation. http://www.rightsandresources.org/publication_details.php?publicationID=117
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- ⁸ FAO 2002.
Deininger, Klaus. 2003. Land Policies for Growth and Poverty Reduction. Washington DC: World Bank and Oxford University Press.
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Swedish International Development Cooperation Agency (SIDA). 2007. Natural Resource Tenure. A position paper for SIDA. Stockholm: SIDA. http://www.sida.se/sida/jsp/sida.jsp?d=118&a=32805&language=en_US
- ⁹ Ellsworth and White 2004:11.
- ¹⁰ The global forest area totals 3,952 Mha and the forest area for the countries in Table 1 totals 3,353 Mha, based on:
FAO. 2006a. Global Forest Resources Assessment 2005: Progress Toward Sustainable Forest Management. FAO Forestry Paper 147. Rome: FAO.
- ¹¹ FAO. 2006a.
- ¹² Finland and Malaysia joined the top 30 while Guyana and Paraguay are no longer in the top 30.
- ¹³ IUCN protected area management categories 1-4.
IUCN. 2002. The IUCN Protected Area Management Categories. Information Sheet 3. Gland: IUCN. http://www.iucn.org/themes/wcpa/wpc2003/pdfs/outputs/pascat/pascatrev_info03.pdf
- ¹⁴ White and Martin 2002:4.
- ¹⁵ White and Martin 2002:6.
- ¹⁶ White and Martin 2002:6.
- ¹⁷ The 25 complete country cases account for 3,146 Mha out of the total 3,952 Mha of global forest cover (FAO 2006a).
- ¹⁸ The results are calculated using the 25 complete country cases from Table 1. They exclude the cases of Argentina, Malaysia, Mexico, Mozambique and Peru because they are not complete for 2002 and 2008 in all tenure categories.
- ¹⁹ The classification of the 30 most-forested countries is drawn from FAO 2006a.
- ²⁰ White and Martin 2002:25-26.
- ²¹ Countries are presented in descending area of forest cover as presented in FAO 2006a.
- ²² Includes Other Wooded Lands.
FAO. 2005a. Global Forest Resources Assessment 2005: Russian Federation Country Report 053. Rome: Food and Agriculture Organization of the United Nations. p15. <http://www.fao.org/forestry/webview/media?mediald=8859&geold=166>
- ²³ The total area of forests administered by government is an estimation and is calculated as follows: The sum of *Areas Protegidas* and *Terras Devolutas* was reduced by the area owned by communities and indigenous groups and the area designated for use by communities and indigenous groups. Data for *Areas Protegidas* and *Terras Devolutas* are drawn from:

Lentini, Marco, Adalberto Verissimo, and Leonardo Sobral. 2003. *Fatos Florestais da Amazonia 2003*. Belém: Imazon. p21. http://www.imazon.org.br/upload/im_livros_002.pdf

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http://www.planalto.gov.br/ccivil_03/Constituicao/Constitui%C3%A7ao.htm

²⁴ Government-administered areas include the following national classifications:

In Federal forests: *Estação Ecológica, Parque Nacional, Reserva Biológica, Reserva Ecológica, Área de Relevante Interesse Ecológico, Terra arrecadada* and *Floresta Nacional*; and

In State forests: *Estação Ecológica, Monumento Natural, Parque Estadual, Reserva Biológica, Reserva Ecológica, Refúgio de Vida Silvestre* and *Floresta Estadual*.

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http://www.mma.gov.br/estruturas/sfb/_arquivos/imagem_florestas_publicas_destinacao.jpg

Instituto Socioambiental (ISA). 2007. *Unidades de Conservação na Amazônia Legal*. Accessed 5 May 2008.

http://www.socioambiental.org/uc/quadro_geral

²⁵ The figure for the 2002 category “designated for use by communities and indigenous groups” includes the following national classifications and refers to the legal Amazon only:

In Federal forests: *Reserva de Desenvolvimento Sustentável*, and *Reserva Extrativista*; and

In State forests: *Floresta Extrativista, Floresta de Rendimento Sustentado, Reserva de Desenvolvimento Sustentável, Reserva Extrativista*, and *Projeto de Desenvolvimento Sustentável*.

ISA. 2007. *Amazônia Brasileira 2007*. São Paulo: ISA. Accessed 9 June 2008.

http://www.socioambiental.org/banco_imagens/pdfs/10293.pdf

²⁶ The figure for the 2008 category “designated for use by communities and indigenous groups” includes the following national classifications and refers to the legal Amazon only:

In Federal forests: *Reserva de Desenvolvimento Sustentável*, and *Reserva Extrativista*; and

In State forests: *Floresta Extrativista, Floresta de Rendimento Sustentado, Reserva de Desenvolvimento Sustentável, Reserva Extrativista, Projeto de Desenvolvimento Sustentável*.

Azevedo 2007.

SFB 2007.

ISA 2007.

²⁷ Refers to Terras Indígenas (SFB 2007).

²⁸ Refers to legal forest reserves on private lands.

International Tropical Timber Organization (ITTO). 2005. *Status of tropical forest management 2005*. Yokohama: ITTO. p209.

http://www.itto.or.jp/live/Live_Server/1222/SFMTropics2005.zip

²⁹ FAO. 2005b. *Global Forest Resources Assessment 2005: Canada Country Report 067*. Rome: FAO. p10.

<http://www.fao.org/forestry/webview/media?mediaId=8859&geoid=203>

³⁰ United States Department of Agriculture (USDA). 2004. *Forest Resources of the United States, 2002*. General Technical Report NC-241. St Paul: USDA. p32. http://www.ncrs.fs.fed.us/pubs/gtr/gtr_nc241.pdf

³¹ Refers to the 18,426,678 acres of forest on forested reservations.

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³² USDA 2004:32.

³³ Refers to state tree ownership in 2001. All forest land in China is under state or collective ownership.

FAO. 2005c. *Global Forest Resources Assessment 2005: China Country Report 051*. Rome: FAO. p21. <http://www.fao.org/forestry/webview/media?mediaId=8859&geoid=102>

³⁴ Refers to state-owned forests. Data are drawn from the Sixth National Forest Inventory of China as presented in:

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- 48 Refers to *Áreas de predios privados independientes*. These areas are titled to individuals, and they cannot be considered completely forested (FAO 2005d:29).
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<http://www.fao.org/forestry/webview/media?mediaId=8859&geoid=74>
- 51 Refers mostly to gum arabic forests managed by communities. The data cover Northern Sudan and parts of Southern Sudan (Jonglei, Upper Nile and Unity states) (FAO 2005e:11).
- 52 Refers to community forests defined as "the forest owned by one individual" (FAO 2005e:11).
- 53 The distribution of forest tenure in Mexico is widely understood as 80% in ejidos forestales, 15% in individual or firm-owned forest, and the remaining 5% are state forests. Information from the Mexico Country Report to the FAO shows that the percentage of ejidos forestales is approximately 59% of the total, while "other property" makes up 41%. Other property is not disaggregated.
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<http://www.fao.org/forestry/webview/media?mediaId=8859&geoid=176>
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- 56 Calculated as the total forest area of 60.73 Mha (FAO 2006a:201) less the 27.5 Mha of areas owned by communities and indigenous groups.

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- 63 Refers to *Tierra Comunitaria de Origen* lands claimed by communities and currently under *saneamiento* in lowland areas as of 2007. Instituto Nacional de Reforma Agraria data provided by
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- 69 Refers to the 2000 total forest area (FAO 2006a:201). No JFM areas existed prior to 2002.
Personal communication with Manyewu Mutamba. 22 April 2008.
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- 71 Refers to Joint Forest Management areas. Data from the Zambian Forestry Department provided by:
Personal communication with Bwalya Chendauka, Zambia Forestry Department Eastern Province. March 2008.
- 72 The Zambia Country Report to the FAO states that 3.47 Mha of other wooded lands (Hill woodland, Munga and Termitaria vegetation and bush groups) are under customary ownership.
FAO. 2005i. Global Forest Resources Assessment 2005: Zambia Country Report 062. Rome: FAO. p15. <http://www.fao.org/forestry/webview/media?mediaId=8859&geold=20>
- 73 FAO. 2006e. Forest Tenure Matrix: Tanzania. Forest Tenure Assessment. Rome: FAO. <http://www.fao.org/forestry/webview/media?mediaId=13380&geold=19>
With the Land Act of 1999 and the Village Land Act of 1999, village land in Tanzania became the property of the communities. This included forested village lands. The figures in Table 1 reflect only the forested village lands legally reserved by the communities. The central government continues to exercise control over unreserved forest areas, and an accurate estimation of the forested village land is not available.
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Government of Tanzania. 1999b. Land Act 1999. <http://faolex.fao.org/docs/pdf/tan23795.pdf>
- 74 Refers to Joint Forest Management (FAO 2006e).
- 75 Refers to reserved areas of village land under Community Based Forest Management (FAO 2006e).
- 76 FAO. 2005j. Global Forest Resources Assessment 2005: Myanmar Country Report 107. Rome: FAO. p11.

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- ¹⁰² FAO 2006j.
- ¹⁰³ FAO 2006a:203.
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