

ENVIRONMENT FOR DEVELOPMENT
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FOREST TENURE REFORM IN ASIA AND AFRICA

LOCAL CONTROL FOR IMPROVED
LIVELIHOODS, FOREST MANAGEMENT,
AND CARBON SEQUESTRATION

EDITED BY RANDALL A. BLUFFSTONE
AND ELIZABETH J.Z. ROBINSON



Forest Tenure Reform in Asia and Africa

‘This very readable book looks at different countries’ strategies to use tenure innovations to manage forest resources. An especially interesting contribution is the comparison of China’s privatization of forest rights to the community-based forestry management approach in other developing countries. The book evaluates a variety of outcomes – livelihoods, biodiversity, and carbon sequestration potential – in these different settings. Based on extensive on-the-ground experience, the editors and authors demonstrate valuable insights into the important role of tenure reform in managing forest resources.’

Peter Berck, Professor of Agricultural and Resource Economics and Policy, S.J. Hall Professor of Forestry, University of California, Berkeley, USA

Forest tenure reforms are occurring in many developing countries around the world. These reforms typically include devolution of forest lands to local people and communities, which has attracted a great deal of attention and interest. While the nature and level of devolution vary by country, all have potentially important implications for resource allocation, local ecosystem services, livelihoods and climate change.

This book helps students, researchers and professionals to understand the importance and implications of these reforms for local environmental quality, climate change, and the livelihoods of villagers, who are often poor. It is shown that local forest management can often be more successful than top-down management of common pool forest resources. The relationship of local forest tenure reform to the important climate change initiative REDD+ is also considered.

The work includes a number of generic chapters and also detailed case studies from China, Ethiopia, Kenya, Nepal, Tanzania and Uganda. Using specific examples and a wide variety of disciplinary perspectives, including quantitative and qualitative analytical methods, the book provides an authoritative and critical picture of local forest reforms in light of the key challenges humanity faces today.

Randall A. Bluffstone is Professor of Economics and Fellow of the Institute for Sustainable Solutions, Portland State University, USA and Research Associate with the Environment for Development (EfD) programme, administered from the University of Gothenburg, Sweden.

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Forest Tenure Reform in Asia and Africa

Local control for improved
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and carbon sequestration

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Randall A. Bluffstone and
Elizabeth J.Z. Robinson**

First published 2015

by RFF Press

Taylor & Francis, 2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

And by RFF Press

Routledge, 711 Third Avenue, New York, NY 10017

RFF Press is an imprint of the Taylor & Francis Group, an informa business

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British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data

Forest tenure reform in Asia and Africa: local control for improved livelihoods, forest management, and carbon sequestration/edited by Randall A. Bluffstone and Elizabeth J.Z. Robinson.

pages cm

Includes bibliographical references and index.

1. Forest policy—Asia. 2. Forest management—Asia. 3. Forest policy—Africa. 4. Forest management—Africa. I. Bluffstone, Randall, 1960—II. Robinson, Elizabeth J. Z.

SD641.F64 2015

333.75095—dc23

2014019567

ISBN: 978-1-138-81964-1 (hbk)

ISBN: 978-1-315-74426-1 (ebk)

Typeset in Times New Roman

by Florence Production Ltd, Stoodleigh, Devon, UK

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Acknowledgements

The editors would first and foremost like to thank the readers of this book, who are interested in, involved with and attempting to solve the difficult forest management issues discussed in this book. We would especially like to thank the authors who have generously contributed their creativity, efforts and patience. All the authors have numerous outlets for their work, but have kindly chosen to contribute to this volume. We would like to express our deep gratitude to the Environment for Development (EfD) Initiative and particularly to director Gunnar Köhlin for the inspiration and financial support that made this book possible. The generosity of EfD and Sida has been enormous and very much appreciated.

We would also like to note our appreciation to Tim Hardwick of Taylor & Francis, who pushed us to ever sharpen and increase the quality. Finally, we would like to thank Cyndi Spindell Berck of International Academic and Policy Editorial Services, who shepherded the book to completion. Cyndi copy-edited and gave valuable input on all chapters and managed communications as we brought the book to the finish line. All of us who worked on this book sincerely hope that it helps move forward the academic and policy dialogues on local forest tenure reform.

Randy Bluffstone and Elizabeth Robinson
Editors

Abbreviations

ADB	Agriculture Development Bank of Nepal
AfDB	African Development Bank
ATT	Average Treatment effect on the Treated
CADU	Chilalo Agricultural Development Unit
CBA	Cost Benefit Analysis
CBFF	Congo Basin Forest Fund
CBFM	Community-based Forest Management
CBNRM	Community Based Natural Resource Management
CBO	Community-based Organizations
CBS	Central Bureau of Statistics
CCCP	Central Committee of the Communist Party
CDM	Clean Development Mechanism
CEM	Country Economic Memorandum
CEPF	Critical Ecosystems Partnership Fund
CF	Community Forestry
CFA	Community Forest Association
CFM	Community Forest Management
CFR	Community Forest Reserves
CGE	Computable General Equilibrium
CIDA	Canada's International Policy Statement
CIFOR	Center for International Forest Research
CPFM	Common Property Forest Management
CPR	Common-property Resource
CRS	Contract Responsibility System
DFS	District Forestry Service
DID	Difference in Difference
DRC	Democratic Republic of Congo
EDRI	Ethiopian Development Research Institute
EEPFE	Environmental Economics Policy Forum for Ethiopia
EFAP	Ethiopian Forestry Action Programme
ENEC	Ethiopian National Energy Committee
EPA	Environmental Protection Authority
EPRDF	Ethiopian People's Revolutionary Democratic Front

ESMF	Environmental and Social Management Framework
ETB	Ethiopian Birr
FAO	Food and Agriculture Organization
FAWCDA	Forestry and Wildlife Conservation and Development Authority
FBD	Forest and Beekeeping Division
FCPF	Forest Carbon Partnership Facility
FDRE	Federal Democratic Republic of Ethiopia
FIP	Forest Investment Programme
FRC	Forestry Research Centre
FSSD	Forest Sector Support Department
FSUP	Forest Sector Umbrella Programme
FUC	Forest Users Cooperatives
FUG	Forest User Group
GHG	Greenhouse Gas
GoE	Government of Ethiopia
GRIF	Guyana REDD+ Investment Fund
GRL	Green Resources Ltd
HLFFDP	Hills Leasehold Forestry and Forage Development Project
HRS	Household Responsibility System
IASCP	International Association for the Study of Common Property
IBDC	Institute of Biodiversity Conservation
ICAR	Institutional Change in Agriculture and Natural Resources
ICDP	Integrated Conservation-Development Project
IFAD	International Fund for Agriculture Development
IFMP	Integrated Forest Management Project
IRDC	International Rural Development Centre
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature and Natural Resources
IVI	Importance Value Index
JFM	Joint Forest Management
JGI	Jane Goodall Institute
KFMP	Kenya Forestry Master Plan
KFS	Kenya Forest Service
LEAT	Lawyers' Environmental Action Team
LF	Leasehold Forestry
LFLP	Leasehold Forest and Livestock Programme
LFUGs	Leasehold Forest User Groups
LPG	Liquefied Petroleum Gas
LULUCF	Land Use, Land Use Change and Forestry
MCDI	Mpingo Conservation and Development Initiative
MLHHS	Ministry of Lands, Housing and Human Settlements Development

MNRT	Ministry of Natural Resources and Tourism
MoARD	Ministry of Agriculture and Rural Development
MoFED	Ministry of Finance and Economic Development
MoFPED	Ministry of Finance, Planning and Economic Development
MRV	Monitoring, Reporting and Verification
MWLE	Ministry of Water, Lands and Environment
NACOFA	National Alliance of Community Forests Associations
NEMA	National Environment Management Authority
NF	National Forest
NFA	Natural Forestry Authority
NFP	National Forest Policy
NFPA	National Forest Priority Area
NFPP	National Forest Protection Program
NLUPC	National Land Use Planning Commission
NPC	National Planning Commission
NPD	National Programme Documents
NSGRP	National Strategy for Growth and Reduction of Poverty
NTFP	Non-timber Forest Products
ORS BOARD	Oromia Regional State Bureau of Agriculture and Rural Development
PEP	Poverty Environment Partnership
PES	Payment for Environmental Services
PF	Private Forest
PFM	Participatory Forest Management
PMO-RALG	Prime Minister's Office – Regional Administration and Local Government
RECOFTC	Regional Community Forestry Training Center
REDD+	Reducing Emissions from Deforestation and Forest Degradation
REPOA	Research on Poverty Alleviation
RFPA	Regional Forest Priority Area
RLCL	Rural Land Contract Law
R-PP	Readiness Preparation Proposals
SCFR	Southern Collective Forest Region
SEA	Strategic Environmental Assessment
SESA	Strategic Environmental and Social Assessment
SFODA	State Forest Development Authority
SLM	Sustainable Land Management
SNNP	Southern Nations, Nationalities and People
SPGS	Sawlog Production Grant Scheme
SSA	Sub-Saharan Africa
TAPAFON	Temperate Asia Pasture and Fodder Network
TFAP	Tropical Forestry Action Plans
TFCG	Tanzania Forest Conservation Group
TFCMP	Tanzania Forest Conservation and Management Project

xx *Abbreviations*

TFS	Tanzanian Forest Service
TGE	Transitional Government of Ethiopia
UIA	Uganda Investment Agency
ULA	Uganda Land Alliance
UNFCCC	UN Framework Convention on Climate Change
USD	US Dollars
UWA	Uganda Wildlife Authority
VDC	Village Development Committee
VIF	Variance Inflation Factors
VLFR	Village Land Forest Reserve
VNRC	Village Natural Resource Committee
VTA	Valuing the Arc
WBISPP	Woody Biomass Inventory and Strategic Planning Project
WCS	Wildlife Conservation Society
WCST	Wildlife Conservation Society of Tanzania
WUARC	Wood Utilization and Research Center
WWF-TCO	World Wide Fund for Nature – Tanzania Country Office

1 Introduction: local forest reform

Theory and experience

*Randall A. Bluffstone, Elizabeth J. Z.
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Introduction

This book addresses the extent to which improved forest management can be achieved through giving people who depend on forests in developing countries greater control over those resources, coupled with incentives to conserve them. Because many of these efforts have in common a shift from centralized to localized control, we focus particularly on local forest tenure reform and the implications for rural livelihoods, environmental health, and climate change.

A key contribution of this book is to bring together detailed assessments of forest tenure reforms in specific countries; practical examples of how innovative approaches to protecting forests and livelihoods are being introduced and implemented; and rigorous analysis of the impact of forest tenure reforms on people, poverty, and forests, from the perspective of environmental economists, political scientists, and ecologists. We address both the theory and practice of defining individual and community rights over forests and provide insights into why managing forests is so tricky, whether it is done by governments, communities, or individuals.

Natural forests are an important source of livelihoods for nearby communities, but a lack of active management of these forests has frequently resulted in deforestation and degradation. The environmental consequences include loss of habitat, siltation of rivers due to clear-cutting for timber or agriculture, soil degradation, and loss of environmental services. Because forest loss and degradation have significant negative consequences for human well-being (Daily, 1997; Millennium Ecosystem Assessment, 2005), poverty reduction strategies through sustainable management of forests have become particularly important over time (World Bank, 2001; FAO, 2006; Seixas et al., 2009). Further, the importance of forests in providing global public goods such as biodiversity protection and carbon sequestration is increasingly being recognized. Indeed, deforestation and forest degradation are both important sources of greenhouse gas emissions, suggesting that forests have a key role to play in climate change mitigation.

Forests play a particularly important role for rural households in many developing countries, especially for those households that own little or no arable

land and depend on livestock that is fed by forage from forests. According to the World Bank (2004), about 1.6 billion people rely on forest resources for their livelihoods, while 1.2 billion people in developing countries use trees on farms to produce food and generate incomes.

Who owns these forests? Who governs them? In many developing countries, forests are publically owned but are, in effect, open access resources, typically due to a lack of government capacity to regulate forest use or to enforce existing regulations. Many forest-dependent communities have tried to manage these resources, but have not had the ability or mandate to enforce rules (especially against people living outside the community), or the incentive to conserve resources (because they have no guarantee of receiving benefits in the long term). These open access problems are closely connected with forest tenure, the set of rights that a person or some private entity holds in land or trees (Bruce, 1989). Put another way, forest tenure is a bundle of property rights, which, depending on the context, may include use rights (rights to extract and use or sell forest products), management or control rights (rights to restrict entrance onto forest land or extraction of forest products, or rights to change how forest land or trees are used), and/or ownership rights (including the right to sell or lease forest land).

One policy approach to protecting forests has been the creation of protected areas. However, particularly where biodiversity or carbon imperatives are central, such protection has typically involved excluding people from forests on which they have traditionally depended (Phelps et al., 2010). Rural villagers have thus faced a double bind: “fence and fine” measures improve the quality of forests but bar families from obtaining food, fuel, and saleable products from the forest; poorly managed yet accessible forests have experienced continued degradation, which in turn threatens the resources on which these households depend.

In an effort to protect forests in developing countries while maintaining or improving livelihoods, forest tenure reform in recent years has often taken the form of devolving centralized forest governance to systems of participatory forest management (PFM), such as community forest management (CFM) or joint forest management (JFM). A key aim of these policies is to replace government responsibility for managing a forest with community responsibility, by defining management and use rights for a forest user group (FUG) or community forest association (CFA) that provide incentives for groups to conserve resources. Yet, despite its current popularity, devolution combined with community forest management is not a panacea for improved forest governance. Indeed, not all countries are taking this approach. We highlight the experience of China, in the chapter by Xu and Hyde, where forest tenure reform has involved a shift from collective forest rights to privatization, to provide a counterpoint.

Whether rights are transferred to the individual or community, a number of themes emerge. First, is the importance of clearly defined property rights, which can align individual or group incentives with socially desirable conservation goals. Second, is devolving forest rights to local actors, whether functioning individually or as a defined group. A third, is ensuring security of property rights, so that those responsible for managing the forests can make long-term plans.

The recent and ongoing developments in forest tenure reform suggest it is timely to write this book, which provides specific perspectives on how particular elements of forest tenure reform and local forest management in Africa and Asia affect forest-dependent households and ecosystem services. This geographic focus reflects both the experiences of the authors and the reality that many exciting innovations in forest tenure reform and local forest management can be found on these two continents. We leave to others a discussion of the experiences of forest tenure reforms and devolution in Latin America, which have many of the same inspirations and outcomes as in Africa and Asia (Pacheco et al., 2011).

We divide the book into three parts, each of which addresses a distinct aspect of forest tenure reforms and local forest management. Our first group of chapters provides insights into forest tenure reform through a number of detailed case studies from Africa and Asia that draw strongly on the experiences of individuals who have been closely involved in the processes.

The second is a multidisciplinary exploration of the implications of forest reforms for livelihoods and ecosystem services. For example, an environmental economics perspective focuses on the extent to which reforms address trade-offs between extracting forest resources for purposes of livelihoods (such as woodfuel collection and timber production) and environmental outcomes (such as forest quality, biodiversity, and environmental services), taking into account household welfare and equity. A political economy perspective brings in factors such as transparency and consistency in policy-making.

Our third group of chapters focuses on the linkages between forest institutions and climate, with specific attention to the relationship between the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation (REDD+) in Developing Countries and forest tenure reform. REDD+ is a relatively new and, at the time of this writing, still evolving initiative. REDD+ seeks to financially compensate developing countries for measurable reductions in deforestation and forest degradation. REDD and its successor REDD+ are likely to have considerable implications for the ownership and management of forests in developing countries.¹

Property rights and local level forest reforms

Our first group of chapters, introduced in Chapter 2 by Purdon, looks in detail at the rationale and practicalities of forest tenure reform through a number of selected country case studies that exemplify different approaches to local forest tenure reform, though with similar aims to improve both forest quality and forest-dependent livelihoods.

The worlds' forests are, in the main, publicly owned. Estimates suggest that over three-quarters of total forest area is owned by governments (White and Martin, 2002), including 98 percent in Africa, 95 percent in Asia, 90 percent in Europe, 82 percent in South America and 70 percent in North and Central America (FAO, 2010; PEFC website). In higher-income countries, these forests tend to be actively managed, either directly by governments or under concession, and are under

relatively low threat of illegal deforestation and encroachment. Indeed, in the US and Europe, forest cover has been increasing; this has also recently been the case in China (Wang et al., 2004; Rudel et al., 2005), as highlighted in Chapter 3 by Xu and Hyde. In contrast, in many developing countries, there is often little active management of the forests. Despite government ownership, about 25 percent of developing world forests are under *de facto* community ownership. Yet villagers typically have little formal mandate to protect and manage these forests (Gilbert et al., 2009).

Poorly defined and enforced property rights, including contested overlapping rights between the state, traditional authorities and/or local communities, have long been recognized as important reasons for natural resource degradation (Banana and Gombya-Ssembajjwe, 2000; Chhatre and Agrawal, 2008). When individuals or groups can neither control extraction rates nor benefit from investments, potentially valuable resources can be degraded to the point where they have little value, a phenomenon sometimes called the “tragedy of the commons” (Hardin, 1968).² The so-called “problem of the commons” may be at least as important now as it was in 1911 when Coman discussed collective action problems in the lead article to the inaugural issue of the *American Economic Review* (Coman, 1911). Even if local village communities commit to managing their nearby forests sustainably, without the right to exclude “outsiders,” degradation and deforestation are likely to continue.

Perhaps not surprisingly, therefore, many regions continue to experience high rates of deforestation: for example, in South America and Africa around 4 and 3.4 million hectares of forest area per year respectively were lost between 2000 and 2010 (FAO, 2010). In addition to deforestation, there have been declines in forest biomass due to degradation. In many African countries, degradation is an important element of biomass loss, estimated to account for over one-third of all biomass declines on the continent (Lambin et al., 2003; Murdiyarso et al., 2008). In some countries, this share is much higher. For example, in central Mozambique, degradation represents two-thirds of net forest biomass loss (Ryan et al., 2011).

As a result, many countries have recently embarked, or are currently embarking, on often far-reaching forest tenure reforms (Larson et al., 2010; Sunderlin, 2011; Larson and Dahal, 2012), based on the premise that local rural communities are highly dependent on forests and therefore should have an increased role in their management (Bose, 2011). Pressures such as increasing population or new opportunities to realize the value of those resources, such as REDD+ or other payments for ecosystem services schemes, may trigger institutional innovations, including more individualized land tenure that provides security for land improvements (Boserup, 1965; Kabubo-Mariara, 2007).

For example, Zambia began to recognize customary tenure in 1995; in 1997, Mozambique made titles for customary rights available; and Uganda in the early 2000s embarked on devolution of forests to district and local councils. Countries such as Uganda, Ghana, and South Africa have undertaken over-arching forest sector reform programmes while ownership of the forests remains with the governments. In contrast, other countries, such as Tanzania, Gambia, and Cameroon,

have devolved forest management and, in some circumstances, ownership to local communities through various forms of joint and community management (White and Martin, 2002; Hobley, 2007).

In practice, the bundles of rights that are actually devolved to communities differ dramatically across and within countries. We highlight these differences in our first group of chapters. Nepal has experimented with both CFM and leasehold forestry, but in both cases ownership remains with the government. In Chapter 12, Poudyal and Adhikari examine Nepal's community-based leasehold forest program in the context of the country's overall forest tenure reforms. They find evidence that this program, which specifically targets the poor, is indeed improving livelihoods.

Tanzania has emphasized participatory forest management in its recent forest tenure reforms, either as joint forest management, manifested as co-management of government-owned forests where villagers have relatively limited user rights, or as community-based forest management, in which ownership of the forest is transferred to the village (Robinson et al., 2013). Chapter 5 by Kahyarara provides a history of the ownership and management of Tanzania's forests spanning pre- and post-colonial eras, providing context for the later chapters that address specific elements of forest reforms. Tanzania's experience is part of an important regional trend towards participatory approaches to forest management.

Kenya, though not as advanced in the process, is similarly implementing a type of PFM that incorporates co-management by local communities as an important element, discussed in this volume in Chapter 11 by Guthiga and co-authors, and also in Mogoi et al. (2012). Purdon's Chapter 6 provides us with a political scientist's perspective on forest tenure reforms, using as a central example a comparison of Tanzania's and Uganda's experiences. In Chapter 4, Mekonnen and Bluffstone focus on Ethiopia's experiences of forest reforms, where forests are government owned, and closed canopy forest cover is believed to be less than 5 percent and annual deforestation about 1 percent (Mekonnen and Bluffstone, 2008).

In contrast, China's well-established collective ownership is gradually giving way to household tenure over forests at the household level. Details of China's forest tenure reforms, within the context of the country's broader market reforms that began in 1978, can be found in Chapter 3 by Xu and Hyde, which provides a distinct contrast to the experiences of other countries discussed in this book. The experience of China demonstrates that privatization at the individual household level can be a successful alternative to community-based management. Indeed, privatization-based local reform for forests has long been advocated (see, for example, Demsetz, 1967, for an early paper that uses examples from North America's forests in the eighteenth century) as an option to provide incentives to maximize the long-run flow of ecosystem services provided by those forests.

Examples of the evolution of informal individual land rights and land markets are numerous, though the benefits of formalizing systems may be unclear (Feder and Feeny, 1991; Besley, 1995; Platteau, 1996; Feeney, 1988; Daley, 2005; Chimhowu and Woodhouse, 2006; Unruh, 2006; Neudert and Rühls, 2013).

Governing forests as private resources may be optimal where the costs of protecting the resource by excluding those without use rights are low relative to the benefits of preventing encroachment, as is the case for land use activities such as agriculture and tree-crop farming (Otsuka and Place, 2001, p. 18). However, the conditions under which private property rights improve the efficiency of forest use are somewhat limited. Private property can create the right incentives for forest management only when there are few conflicts between uses. For example, if the benefit of the forest is primarily the production of fuelwood or timber, privatization or concessions may be the most appropriate institutional arrangements, because there are few ways owners of forests can infringe on others' property rights. Indeed, in practice, many public forests are governed as concessions (Agrawal, 2007).

Yet natural forests often produce multiple products that benefit communities at different scales, from local to national and increasingly international. As a result, there are technical and political problems associated with their privatization (Bluffstone, 1993). At a local scale, villagers may be deprived of historical rights and poorer villagers, who often rely much more heavily on forestlands than the rich (Jodha, 1986), may find themselves worse off than when land access is open access, even though open access land may be more degraded. Common pool resource values that are important at a regional or global scale, such as watershed protection, carbon sequestration, or wildlife, may also be reduced when forests are privatized.

Indeed, there is a literature that suggests that the formalization of individual land rights, or indeed any formalization of these rights, can be highly problematic. Formalization, the argument goes, favors elites and facilitates land grabs. It is therefore suggested that it is better to leave informal land markets informal (Platteau, 1996; Lastarria-Cornhiel, 1997; Toulmin et al., 2002; Unruh, 2006). Unruh has extended this argument to carbon forestry projects, urging that "the poor often need to be protected from governments, and yet governments will be responsible for law-making, guaranteeing rights, and titling programs [necessary for afforestation and reforestation carbon offset projects]" (Unruh, 2008, p. 702). A critique of this literature is that it may cast too wide a net by assuming that all state land tenure interventions are illegitimate. That said, since 1978 China has actively devolved forest control to households, and preliminary results indicate that this approach has improved forest management and increased forest cover (Wang et al., 2004).

Whether formal or informal, common property systems are often seen as preferable for the management of common-pool resources, such as forests and fisheries. Because common pool resources cannot be restricted to individuals and often cannot be managed effectively by the state, the argument is made that common pool resources could be best managed as "community" property. Indeed, there are numerous examples of effective communal property systems (Gibson et al., 2000; Agrawal, 2007).

There are also, however, concerns that enthusiasm for common property management is to some degree based on romantic notions of communal life in

peasant societies that are not always appropriate (Popkin, 1979, pp. 1–31; Chimhowu and Woodhouse, 2006) or adequately linked to democracy and environmental conservation (Ribot et al., 2010). Phuc (2011) and Adhikari (2005) argue that CFM's effects are by no means always benign in Vietnam and Nepal. Indeed, they both express unease about increased social differentiation due to CFM. Ntambirweki, a leading Ugandan legal scholar, makes a much stronger argument when he notes that “[d]espite attempts to couch ‘common property regimes’ in a cloak of traditional legitimacy, it can be identified for what it is: Yet another attempt to experiment with collectivism in Africa and other third world domains” (Ntambirweki, 1998, p. 41). One example of such an experiment comes from the failure of Ujamaa villagization in Tanzania (Hydén, 1980),³ but there are also less dramatic context-specific concerns that group property rights schemes may increase inequality (Colfer and Wadley, 2001; Adhikari, 2005) and bolster the authority of ethnic groups in ways that undermine national solidarity, which is often still fragile in many developing countries (Boone, 2007; Poteete, 2009). Tacconi (2007) adds to this critique, arguing that because deforestation is often in communities' interests, devolution may not even improve conservation outcomes.

Despite the literature that eschews any formalization of property rights, establishing and enforcing clear property rights – whether government, private or group – through appropriate institutional arrangements is generally believed to be perhaps *the* critical prerequisite to simultaneously increasing forest cover and forest-related incomes in many low-income countries. Clarifying property rights may not solve all problems, but the economic literature is doubtful that tree cover – or, for that matter, any depletable common pool resource – can be sustainably increased without clear property rights (Gordon, 1954; Hartwick and Olewiler, 1998; Field, 2001). Yet clear and secure tenure does not guarantee equity or automatically lead to improved livelihoods or conservation outcomes (Dahal et al., 2010). Conservation efforts, for example, are often driven by global demands and frequently lack understanding of local needs (Barry et al., 2010).

Implications of local forest management

Our second group of chapters, introduced by Cooke and Poudyal in Chapter 7, addresses the impact on people and forests of local forest management. In Chapter 8, Gelo and Alemu find a connection between local forest management and increased household incomes in rural and disadvantaged households in Ethiopia. Also in Ethiopia, Mebrahtu and Gebremedhin demonstrate in Chapter 9 that institutions developed at the initiative of local communities can result in improved plant biodiversity. Cooke examines forest management in poor communities in Nepal in Chapter 10; Poudyal, Adhikari, and Lovett look further at Nepal in Chapter 12 and evaluate the effects of leasehold forestry. In Chapter 11, Guthiga, Nyangena, and Juma address local forest management from the perspective of those often most affected by devolution, with particular emphasis on Kenya's recent reforms. Below, we provide some background to introduce their work.

Porter-Bolland et al. (2012) find that well-managed community forests are healthier than government-managed protected areas, reflecting an emerging conventional wisdom. In Nepal, for example, devolution of forests from the central government to communities has been underway since the early 1980s. Transfer of management responsibility to user groups began in 1993 (Pradhan and Parks, 1995; Cooke, 2000; Adhikari, 2002), and indeed, as of 2013, it is difficult to find hill forests that have not been devolved to users. Forest quality has been found to have dramatically improved as a result, with the area of forest increasing by about 2 percent per year from 1990 to 2010 (Niraula et al., 2013).⁴ In Bolivia, local communities have had substantial control over natural resources at least since the 1950s (Bluffstone et al., 2008). Tanzania, Ethiopia, and Kenya have all taken important legislative steps toward community management that are discussed throughout this book.

During the period 1997–2008, the area of formal collective ownership of forests roughly doubled to 250 million hectares worldwide (World Bank, 2009). By the early twenty-first century, more than 50 countries had ceded some control over resources to local users (Agrawal, 2001; 2000). In some cases, this has meant re-instituting regimes that were disrupted in the past (Agrawal et al., 2008; Sunderlin et al., 2008).

Partly driving the increase in community-level devolution has been a steady increase over time in our understanding of common-property resources and what is required to sustainably increase the supply of direct-use ecosystem services. The theoretical strand of this literature has largely found that community ownership can have efficiency outcomes that are similar to private property if there are incentives for members to cooperate (Olson, 1965; Bromley, 1990; Ostrom, 1990; Baland and Platteau, 1996; Sethi and Somanathan, 1996; Dayton-Johnson, 2000). Important literature has also discussed practical common-property forest management design principles. This work suggests that effective community forest management systems can be incentive compatible at the household level (Shyamsundar, 2008) when they empower communities and have clear access and extraction rules, fair and graduated sanctions, public participation, clear quotas, and successful monitoring (Ostrom, 1990; Agrawal, 2000; 2001). Recent work also emphasizes that community forest management comes in many forms. There is, therefore, a need to analyze the details of community management rather than treat it as either being “present” or “absent” (Jodha, 2008; Shyamsundar, 2008; Agarwal, 2010).

Empirical evidence on the efficacy of community forestry management and its components is still limited and the subject of current empirical research; indeed, empirical work focusing on community management elements has only relatively recently emerged (Cooke, 2000; Heltberg et al., 2000; Heltberg, 2001; Edmonds, 2002; Linde-Rahr, 2003; Hegan et al., 2003; Nepal et al., 2007; Bluffstone et al., 2008). A substantial portion of this literature cautions against the implementation and imposition of community forestry from outside the community itself (Colfer and Wadley, 2001; Adhikari 2005; Khatri-Chetri, 2008; Ostrom, 2010).

Issues for the future: opportunities and challenges of REDD+

The three final chapters in this book, introduced by Albers in Chapter 13, focus on the interplay between local level forest reforms, rights over forest carbon, and climate change mitigation. Trees sequester carbon while growing the total carbon stored in forests is currently estimated at 638 Gt (UNFCCC, 2011), with about 247 Gt sequestered in Latin America, sub-Saharan Africa, and Southeast Asia.⁵ However, atmospheric greenhouse gases are released when forest biomass is burned or decomposed (Anger and Sathaye, 2008; van der Werf et al., 2009), such as occurs during deforestation and forest degradation, which globally account for between 12 percent and 20 percent of total annual greenhouse gas emissions (van der Werf et al., 2009; Saatchi et al., 2011).

The Stern Review argued that reducing deforestation is a highly cost-effective way of reducing greenhouse gas emissions (Stern, 2007), and thus there is a clear link between the aims of forest tenure reforms discussed in the previous two sections of the book and this final group of chapters. REDD+ is a climate mechanism that pays developing countries to reduce and reverse deforestation and forest degradation. There is no general consensus as to how REDD+ will be implemented. Indeed, current REDD+ initiatives are at the pilot stage and vary considerably as to how they are being implemented. Moreover, at this early stage it is not possible to evaluate the extent to which REDD+ initiatives will be successful. However, as our final group of chapters demonstrates, there is already a growing body of literature that explores under what conditions we might expect to see REDD+ work.

In keeping with this book's focus on forest tenure reforms and local governance, we address REDD+ in the context of the improved management of natural forests by nearby communities. Thus the focus is as much on addressing forest degradation (often neglected in the earlier REDD+ literature) as deforestation. Much of the early literature and understanding of REDD+ has emanated from Latin American countries, where deforestation has been a particular focus, and Chapter 14 of this book touches on a study that utilized data from Latin America as well as Asia and Africa. However, our two case study papers, presented in Chapters 15 and 16, come from Kenya and Tanzania, where a number of REDD+ pilot projects are being implemented in conjunction with devolution of ownership and/or user rights to nearby communities in the context of forest tenure reforms. Typically in these community forests, forest loss continues due to relatively uncontrolled resource extraction, agricultural encroachment, and shifting cultivation, rather than an active decision by an individual landowner to convert forest to agricultural land.

It is difficult to envision a successful REDD+ mechanism without coming to terms with local forest reform. Indeed, there is a general agreement that tenure needs to be clear and secure if REDD+ is to function as an efficient and equitable system for compensating those who incur opportunity costs in the course of sequestering carbon. Yet the relationship between REDD+ and forest reform runs both ways. Clearly defined and secure tenure rights are necessary to implement

a payment for ecosystem services (PES) program such as REDD+, and CFM provides an institutional structure for developing and enforcing forest management plans and distributing REDD+ payment benefits. But REDD+ initiatives may well be the catalyst for the introduction and development of these new forest rights for local communities.

Chapter 14, by Westholm, Biddulph, Hellmark, and Ekbohm, provides a broad review of the current debate over REDD+ and forest tenure. The two following chapters are country-specific case studies that focus on the implementation of REDD+ pilots. In Chapter 15, Robinson, Albers, Meshack, and Lokina provide a detailed exposition of one particular REDD+ pilot initiative in Tanzania. Slunge, Ekbohm, Loayza, Guthiga, and Nyangena, in Chapter 16, consider the extent to which the assessment tool Strategic Environmental and Social Assessment (SESA) can be used to help implement REDD+ in ways that improve forest governance.

REDD+ can include a variety of payments for ecosystem services schemes, where buyers of REDD+ carbon credits are in UNFCCC Annex 1 (developed) countries and sellers are in non-Annex 1 countries. Whether via created carbon markets or public sector “funds,” such payments have the potential to add value to forest carbon sequestration services that are currently undervalued or not valued in monetary terms. In the process, once governments and communities can realize greater value from standing forests, a key hope is that REDD+ will create incentives for those who control forests to sequester carbon and for those who emit carbon into the atmosphere to pay for the sequestration services. However, how REDD+ should be implemented – for example, whether through markets or centralized funds administered at the international level – is still a matter of debate.

A number of papers and reports argue for the development of carbon markets, suggesting that carbon benefits from land improvements, such as restoration of degraded land, reduced slash and burn agriculture, and better forest management, could be had at very low cost. For example, McKinsey & Company (2010) estimate that reduced forest degradation – in addition to providing potentially significant co-benefits – could reduce carbon emissions at a cost of less than €10 per ton. Similar results were also found by Kindermann et al. (2008) and Strassburg et al. (2009), who, using simulation techniques, estimate that 80 percent of avoided deforestation can be achieved for costs less than US\$5 per ton of CO₂. Such results suggest that forests may be able to compete effectively with other methods to reduce carbon in the atmosphere.

However, considerable controversy remains regarding whether such studies have taken into account all local opportunity costs of carbon sequestration, particularly the costs of enforcing access and use restrictions and dealing with, or accounting for, leakage. Leakage occurs when policies to reduce forest loss in a particular forest displace degrading and deforestation activities into other, less-protected forests (Morris et al., 2008; Dyer and Counsel, 2010; Gregorsen et al., 2011). Indeed, costs may be especially high in situations documented in this book, because communities must endeavor both to manage their own use of REDD+ forests while excluding outsiders who benefit from extracting resources, but would