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Editorial

Incentives and Constraints of Community and Smallholder Forestry

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Received: 12 September 2016; Accepted: 14 September 2016; Published: 16 September 2016

Abstract: This editorial introduces the special issue: *Incentives and constraints of community and smallholder forestry*. The special issue contains nine papers, listed in a table in the main text. The editorial reviews briefly some key elements of our current understanding of community and smallholder forestry. The editorial also briefly introduces the nine papers of the special issue and points out how they link to the debate among academics and specialists on community and smallholder forestry. Finally, the editorial highlights the new elements that the nine papers contribute to our understanding of community and smallholder forestry, before it concludes at the end.

Keywords: communal logging; forest policy and governance; enabling conditions for community forestry; forest sector reforms; REDD+; forest transition

1. Introduction

Since the 1990s a large number of countries reformed their forestry sector within broader attempts to enhance governance of natural resources and social participation. Many of these reforms promoted local-forest development, or at least changed regulations to permit local communities and smallholders to extract products from forests which traditionally had contributed to meeting daily subsistence needs, or to enhance their income streams by using them commercially. This sparked an international debate on the potential of community and smallholder forestry, a debate that was also held within the academic community (e.g., [1–4]). Humphreys et al. [5] suggest two types of academic scholarship related to community forestry. The first, which we term the forest dependency academic debate, largely explores and theorizes on the role of forests and their benefits and services linked to rural livelihoods. The second type, the community forest development debate, focuses more on efforts to enhance the delivery of goods and services from forests owned or controlled by communities, or over which communities have rights of access.

More recently, the debate on community forestry has evolved within a broader debate focused on the role and value of forests, forestlands, and forest landscapes in solving environmental and sustainable development challenges, for instance, as a repository of carbon and a sink of carbon dioxide [6], but also for their role in societal adaptation to climate change [1]. This debate is intrinsically related to the plethora of ecosystem services that forests provide, many of which are crucial for human well-being [7]. Changing forest conditions will affect the provision of ecosystem services, thus impacting the dependence of smallholders and communities on forest resources, and also the degree to which these resources can contribute to human and economic development. The important role of forests was clearly recognized in the recently adopted Sustainable Development Goals (SDGs). The achievement of many of the SDGs will depend on interactions between forests and society, and especially forests and local communities. Progress towards the achievement of the SDGs will, in many

locations, require that forests contribute to the improvement of rural incomes, enhance food security, and regulate downstream water supply, among other benefits (e.g., [8]).

The nine papers of this special issue link together the two strands of the debate on community forestry by examining both local communities' and smallholders' dependency on forests and the contribution of forests to development. Linking these two debates sheds new light on the ongoing and evolving debate on community forestry.

This introduction to the special issue: *Incentives and constraints of community and smallholder forestry* explores how this collection of papers can advance the discussion on community and smallholder forestry, and especially the discussion on options and opportunities to enhance forest benefits to communities while forests are conserved. However we must also take into consideration the recent revaluation of natural environments and their expanding role in addressing global sustainable development challenges, such as climate change mitigation or the restoration of the provision of forest ecosystem services in general, and how this creates both new opportunities, but also new challenges for community forestry.

The papers draw on case studies from tropical Latin America, Africa, and Asia. They analyze community and smallholder efforts to achieve different forest related objectives and associated outcomes stemming from these efforts. The papers examine in-depth a number of relevant topics, such as the conditions shaping forest dependency, mechanisms through which rural livelihoods can be improved through forests, and implications for forest outcomes, when forests are targeted to support people's livelihoods, while also providing local and global environmental services. These concerns are of high relevance to debates exploring potential synergies and trade-offs between sustainable development and climate change.

Three of the papers [9–11] review wider forestry reforms in Western Amazonia, mainland Southeast Asia, and the Philippines, and associated implications for smallholders and communities undertaking forest management. Two of the papers [12,13] review several decades of experiences from community forest management in Quintana Roo and Mozambique, and explore how regulatory, economic, and social factors have shaped community forestry initiatives, and the capacities of communities to adapt to changing regulatory, policy, and market environments. The other four papers focus on a number of key issues in debates about community forestry, for example, the economic feasibility of community-based timber extraction, prospects for local innovations in mitigating climate change, factors that incentivize tree planting among smallholders, and the role of interactions among forest agents and stakeholders in forest change.

Piketty et al. [14] provide a detailed cost-benefit analysis of communal forestry logging operations in Brazil, shedding light on the limitations communal timber operations must face to become a viable commercial option and the struggle communities undergo to be successful in a highly competitive sector. Poffenberger [15], in turn, focuses on how villagers in Northeast India strive to adapt to standards that emerge from global efforts to align local forest management to wider goals of climate change mitigation. Etongo et al. [16] examine the factors that incentivize tree planting among smallholder farmers in Burkina Faso, and Sloan [17] explores how communal forest management and reforestation contribute to forest cover and forest condition change, while interacting with corporate actors in the wider landscape. The list of papers can be found in Table 1.

Table 1. Papers of the special issue.

Authors	Title
Edward Ellis et al.	Endurance and Adaptation of Community Forest Management in Quintana Roo, Mexico
Daniel Etongo et al.	Smallholders' Tree Planting Activity in the Ziro Province, Southern Burkina Faso: Impacts on Livelihood and Policy Implications
David Gritten et al.	An Uneven Playing Field: Regulatory Barriers to Communities Making a Living from the Timber from their Forests—Examples from Cambodia, Nepal, and Vietnam
Mark Poffenberger	Restoring and Conserving Khasi Forests: A Community-Based REDD Strategy from Northeast India
Pablo Pacheco et al.	Smallholder Forestry in Western Amazon: Outcomes from Forest Reforms and Emerging Policy Perspectives
Marie-Gabrielle Piketty et al.	Annual Cash Income from Community Forest Management in the Brazilian Amazon: Challenges for the Future
Juan Pulhin and Mark Anthony Ramirez	Timber Regulation and Value Chain in Community-Based Timber Enterprise and Smallholder Forestry in the Philippines
Almeida Sitoe and Benard Guedes	Community Forestry Incentives and Challenges in Mozambique
Sean Sloan	Tropical Forest Expansion, Smallholders, and Interactions Amongst Agents of Forest Change

Section 2 of this editorial provides a brief review of some elements of the community forestry debate that is relevant for the set of papers included in the special issue. Section 3 introduces briefly the papers of the special issues and relates them with the topics introduced in Section 2. Section 4 highlights the more relevant insights of the papers of the special issue, and Section 5 concludes.

2. Community and Smallholder Forestry: Achieving Local and Non-Local Benefits

Community forestry is a term that links forests, institutions, and rural livelihoods. Community forestry has been defined differently by academics, development practitioners, and policy makers. The understanding of community forestry has also evolved over time. Here, we use the broad characterization of community forestry by Charnley and Poe [18] who stipulate that community forestry includes the authority granted to communities to manage areas of forests, the purpose of which is to derive socio-economic benefits but constrained by the condition that forests must be conserved in order to provide ecosystem services and benefits to non-local users. An important number of synonyms of community forestry with similar meanings are widely used, like for instance, communal forestry, community-based forest management, or community-based natural resource management [19]. While for some time the debate on community forestry referred primarily to management undertaken through collective operations, it has expanded over time to include individual smallholders as well.

The focus on community forestry has evolved since its early debate among rural development experts and academics. During the 1970s, the focus was more on on-farm tree planting (e.g., [20,21]). Since the introduction of sustainable development in global discourses, and with it the concept of sustainable forest management, community and smallholder forestry has focused primarily on how communities and smallholders utilize natural forests to satisfy livelihood needs. As a result, many have understood community forestry as a "new" approach to enhance income streams from forest-related activities for rural dwellers who live in or near forests, and depend on forests for making a living, this through enhancing their capacity to use commercially timber and non-timber forest products (e.g., [1,22]). Many forest communities manage forests and benefit from forest resources to meet subsistence as well as cash-income needs independently from any external support or incentives, relying on local practices, arrangements, and institutions.

The "refocusing" of community forestry as an approach to further rural development has led to an increased emphasis on communal harvesting of timber, being one of the few forest products that is in high national and international demand with prices that enable communities to obtain significant income from their sale [22,23].

The analysis of community forestry using empirical evidence and reductionists' principles poses a number of challenges. The agent in community forestry is often implicitly understood to be a group of households that reside in a small settlement joined together in some kind of social organization, with internal dynamics and economic interactions with local and regional markets and possessing recognized political status. From the latter, the community as a collective of member households often derives a number of rights, for instance land rights. In contrast, local forest operators may maintain holdings independently and are referred to as smallholders. Many empirical studies that focus on community forestry take the household as the unit of analysis (e.g., CIFOR's Poverty Environment Network - PEN studies) [24]. Other studies highlight collective action of entire communities or groups within communities. The latter are identified equally with different terms, like, for instance, forest user groups or community forest groups (e.g., [1]). The identification of the agent of community forestry is relevant, because many scholars either try to characterize the different groups of forest users, or aim to establish causal relationships between attributes of these forest users and "external" factors influencing forest use and management. These analytical complexities are commonly contextually resolved.

Scholarship on community forestry often has an underlying objective, specifically to contribute to better outcomes of community forest efforts and projects. This is reflected in a number of explorations of conditions or factors that are favorable to community forestry, especially when they align in a collective fashion. Sabogal et al. [4] carried out a comprehensive study in Latin America to identify factors and conditions that favor positive outcomes in community forestry. Broadly, their analysis yielded five principal factors or conditions in Latin America that are part of an enabling environment for community forestry. These include technical capacity and issues related to forest management; establishment and operation of effective communal or smallholder organizations and enterprises; appropriate public policies and administration; compatibility with social and cultural dimensions of communities and smallholders; and access to community and smallholder development assistance. Katila et al. [2], in drawing upon the literature and significant case studies, propose that a number of prerequisite conditions contribute to positive outcomes of community and smallholder forestry, including tangible links to improved livelihoods and sustainable provision of forest ecosystem services. The prerequisite conditions are grouped within the following four realms: (1) policies, institutions, and governance; livelihoods, capacities; (2) cultural and socio-economic aspects; (3) natural resource base; and (4) research and monitoring. Examples of pre-requisite conditions in the first realm includes adequate and necessary tenure and rights over forests; an effective, efficient, and just public administration; adequate representation and division of power and participation of forest stakeholders in forest governance; effective enforcement of laws and regulations; a reconciliation of cross-sectoral issues and policies. Attention was also focused on regional-international and global processes to determine to what degree they had influenced outcomes observed on the ground. In the second realm, pre-requisite conditions related to the existence of: commercial opportunities and linkages to markets, ideally through value chains; technical, managerial, and leadership capacities; access to capital; and the absence of serious issues relating to security and conflict. Baynes et al. [1] identify factors that "influence the success of community forestry". The factors are many, but key categories include: socio-economic and gender equality, property rights, intra-community forestry group governance, government support, and benefits. These factors all contribute to building "bonding social capital" and "bridging social capital", which in turn leads to success of community forestry. Although the authors show similarities in the conditions they deem important for community forestry, in practice it has been difficult to accomplish synergistic, parallel progress among these conditions in different contexts.

In addition to exploring factors that influence community forestry outcomes, review studies have attempted to assess these outcomes across a large number of cases. Pelletier et al. [19],

for example, found that the vast majority (87%) of community forestry cases do contribute to sustainable management of forests and thus do contribute to sustainable forest landscapes (p12). While environmental objectives of community forestry efforts are widely achieved, the same is less evident for social and economic outcomes. Pelletier et al. [19] find that only 44% of the cases resulted in increases in income from forests, an equal number had a neutral effect on incomes, which would imply that in 22% of the projects the effect on income had actually been negative. When community forest projects have been evaluated using a poverty capability approach (cf. [25]), community forestry projects score quite well, as they have enhanced security, have had a much more modest outcome on creating employment, but have had in some cases a negative influence on equity. Community forestry projects appear to diminish forest benefits for the poorest and for female led households (p14).

Comparable outcomes were reported by Katila et al. [2] who suggest that important progress has been made in many of the prerequisite conditions that have been seen to contribute to positive outcomes. In recent years, good but not uniform progress has been made in tenure reform, something that is also confirmed, for instance, by Sunderlin [26]. Progress in tenure reform is very much a national policy issue, so while it has made strides in some countries, for instance, Bolivia and Colombia, less progress has been made in many other tropical forest countries in Africa and Asia. While this is the case, there is also increasing evidence that formalized tenure change is indeed a prerequisite condition for successful community and smallholder forestry, and that there is also a serious issue with actually respecting rights that should be derived from formally sanctioned ownership over forests. Where collective ownership has been given internal arrangements among those who hold collective rights are quite important in determining how tenure reforms eventually influence community and smallholder forestry outcomes. Baynes et al. [1: 233] argue that property rights is the most complex factor determining the success of community forestry. Enhanced forest tenure is an important condition to enhance local benefits from forests, but in and of itself is not sufficient to result in improving forest benefits and progress towards sustainable forest management (e.g., [27]).

Similar complexities are in evidence when considering concerns of power, representation, and participation. The latter relates to the interactions between communities and smallholders on the one side and other stakeholders on the other who hold administrative or governance responsibilities, or who have particular interests in forested areas targeted for community or smallholder forestry. Katila et al. [2] also observe that important progress has been made in these prerequisite conditions, but major challenges remain in order that forest governance arrangements evolve into exemplary cases of democracy and representation. While the critical importance of issues of power, representation, and participation is widely acknowledged and in many instances addressed (e.g., [1]], the desired democratic processes are not easily created, in large part because different stakeholders have different resources at their disposal, different skills, or can influence persons who hold political power. As a result, issues of power, representation, and participation that are integral to forest governance still require much progress in order to support and facilitate community and smallholder forestry.

While tenure and access, and issues power, representation, and participation are quite dynamic areas in which some progress has been made, enormous challenges persist relating to these prerequisite conditions. Another important challenge corresponds to the lack of compliance with the rule of law among many actors who derive profits from forest products, especially timber. Community forestry is linked to forest sector legality in a myriad of ways, as discussed in several of the papers of the special issue (e.g., [9–14]). For example, financial viability of community forestry timber production is threatened by illegally produced timber in Brazil [14], but also in many other countries. On the other hand, communities also suffer from the imposition of regulations that result in higher transaction costs for small-scale timber producers when, for example, acquiring permits. These additional costs undermine the economic viability of these operations, which can drive well-meaning stakeholders to exploit their forests outside of the law [10]. Illegal conversion of forests to alternative land uses also continues to remain a major challenge, reflecting once more a driver leading to inadequate compliance with the law that characterizes the forest sector in many contexts (e.g., [9,11–13]).

The degree to which international, regional, or global processes have influenced the effectiveness of legality verification was also explored in the Katila et al. [2]. Cashore et al. [28] briefly review the link between global processes of REDD+ (reducing emission from deforestation and forest degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries (e.g., [19])), zero deforestation, and legality verification, and communal forest access and tenure. Of much interest for community forestry are global efforts to address climate change [12,15,19]. A considerable number of countries that pursue community and smallholder forestry development are preparing national REDD+ strategies and harbor high expectations to implement these strategies. In a parallel fashion, private sector or civil society REDD+ projects are also being implemented [25,29]. While REDD+ is believed to hold great potential, including for community and smallholder forestry, the implementation of the global REDD+ program still faces major hurdles [19]. These obstacles are evident in the Poffenberger [15] paper, which describes in detail the kind of challenges that are faced when attempts are made to derive compensation from the enhancement of carbon stocks in community forestry efforts.

During the last half century, the academic understanding on the role of forests in communal livelihoods, and experiences and expertise on how forestry can be mobilized as a resource that contribute to communal development have increased significantly. In a number of cases, important progress has been made in enhancing forest contributions to rural livelihoods through community forestry. However, while progress has been made, multiple constraints and challenges still persist in enhancing the contributions of forestry to improving rural livelihoods, while producing additional forest ecosystems services that are beneficial to non-local forest users. The papers in this special issue explore some of these challenges, but they also point at new opportunities for community forestry. The papers also suggest various incentives that would serve to make community forestry more attractive, enhance its contribution to material and social benefits, and favor sustainability. The next section will briefly introduce the papers of the special issue and link them to the various issues that have been summarized in this section.

3. Papers of the Special Issue

Each of the nine research papers in this special issue discusses a case of community or smallholder forestry in a tropical region. Three papers are from Asia [9,11,15], two from Africa [13,16], two from Central America [12,17], and two from the Amazon basin [10,14].

Three papers pursue an analysis of laws, regulations, and policies that explicitly seek to foster community and smallholder forestry, or through diverse mechanisms have been influential in this broad approach to forest management. The papers include the Gritten et al. [9] paper, which analyzes regulations in three Southeast Asian countries, Vietnam, Nepal and Cambodia, and how they constrain communities from benefiting from timber resources, to which they gained access through prior land and forestry reforms. A somewhat similar analysis is undertaken by Pulhin et al. [11] who review the barriers created by regulatory and administrative requirements and associated extra-official practices that impact benefits communities receive from timber harvesting in the Philippines. A third paper in this group is by Pacheco et al. [10], who review the regulatory and policy reforms in the Western Amazon, Ecuador, Peru, and Bolivia, and how these regulations have evolved to adapt to emerging needs and claims from smallholders. The Western Amazon analysis, however, does not place its primary focus on communal timber production, rather it explores how broader forest sector regulatory and policy reforms have furthered sustainable forest management as intended, and how these reforms are impacting forest communities.

The papers by Ellis et al. [12] and Sitoe and Guedes [13] also focus primarily on the regulatory environment, and how it affects community forestry; specifically, policies and laws promoting community forestry in Mexico's Quintana Roo and Mozambique. These two papers describe efforts to enhance institutional facilitation and recognition of community and smallholder forestry, assessing cases of ongoing community and smallholder practices that have persisted for over 20 years. Both

papers conclude that community and smallholder forestry is feasible and can be successful, but that it must evolve over time to address persistent challenges and changing tides in the enabling conditions, including the regulatory environment, market conditions, and associated adaptation of community forestry itself. Both papers make clear that community forestry is not a fixed objective that once reached can proceed on its own; it demands a continual process of analysis, learning, and adaptation.

Four papers in the special issue explore the multiple influences that shape the directions of communal and smallholder forestry activities. These papers focus on different aspects of communities and external factors. For example, Piketty et al. [14] undertake a detailed cost benefit analysis of communities in the Brazilian Amazon that engage in timber extraction, seeking to identify options to make this means of production more competitive, and more likely to improve rural incomes, while assuring sustainable timber production over time. The regulatory environment, but especially public administration support, or lack thereof, is singled out as one compounding factor reducing profitability and chances of success. The paper by Etongo et al. [16], on the other hand, analyzes factors impacting profitability of tree plantations among villagers in Ziro province, in Burkina Faso. While the paper identifies major influences like tenure security and access to land, it also explores characteristics of farmers who engage in tree planting and those that refrain from doing so, concluding that intra-communal variations play a major role in tree planting behavior, and therefor influence outcomes of community and smallholder forestry.

The paper by Sloan [17] takes a different tack, exploring forest cover dynamics among forest communities in Panama, identifying principal actors who contribute to forest cover gain, and why. While recognizing the role of community and smallholder forestry in forest recovery, the paper emphasizes how other actors have dominated this process. The paper is relevant to this special issue, as it contributes to the discussion of links between community forestry and forest cover change, specifically reduction of deforestation (e.g., [19]) and restoration of forest cover. This aspect is particularly relevant in the aforementioned revaluation of forests for their carbon stocks, carbon capturing capacity, or as producers of wider forest ecosystem services. This links the Sloan [17] paper to the Poffenberger [15] analysis of how a federation of 10 Khasi tribal kingdoms in India have been striving to implement a community forest carbon project. The potential role of forest communities in REDD+ is a major area of discussion in the literature, largely because it is now widely held that the success of the global REDD+ project will for an important part depend on how REDD+ can be made compatible with community forestry [19] or how REDD+ can indeed be made to work such that it will result in tangible benefits to communities [30]. Along this line, Poffenberger [15] explores implications of national policies and international arrangements and policies intended to enhance the contribution of community and smallholder forestry to mitigating carbon emission and climate change for Khasi communities in India.

4. Persistent Challenges and New Opportunities of Community and Smallholder Forestry

4.1. Creating Regulations and Policies That Support Community Forestry

From these papers, it can be concluded that community and smallholder forestry initiatives have often had positive environmental, social, and economic outcomes. Notable progress has been made during the last decades that has created opportunities for communities and smallholders to benefit from their forests in ways that would not have been possible before forestry reforms. The most evident example of these regulatory and policy changes relate to forest tenure reforms that have taken place in many parts of the world. Yet even when tenure reforms enable communities to have access to resources, cumbersome regulations can prevent communities from fully capturing benefits from these forests. Pacheco et al. [10] report on positive tenure reforms in Bolivia and Ecuador resulting in large areas of forest being placed under communal control. In Bolivia, indigenous and non-indigenous rural communities legally own or occupy nearly half of all forest territory (42%) in the country. In Ecuador this figure is about 68%. The area under control by forest communities, however, was much less in

Peru (18.2%). In all three countries, rights over forestlands were accompanied by mechanisms to allow communities to engage in timber harvesting.

While forestland tenure and forest exploitation rights were adjusted to enable communities to benefit economically from their forests, Pacheco et al. [10] point out that considerable constraints still persist in Western Amazonian countries, limiting the effectiveness of these policy reforms. For example, a significant portion of smallholders and communities continue conducting timber operations and engaging with markets in informal ways. While these informal practices and arrangements make it possible for them to manage forests according to their capacities and needs, and engage in markets more flexibly, they generally must rely on intermediaries who shape community forestry operations by dictating the terms of agreements, establishing links to urban buyers, and being the sources of capital to carry out timber operations. There are multiple ways through which intermediaries transgress regulations, often mixing legal and illegal sources in order to meet urban demand for timber.

These types of constraints are common in many parts of the world. The papers by Griffen et al. [9] and Pulhin et al. [11], for example, demonstrate that quite similar problems plague community and smallholder forestry in Southeast Asia, in countries like Cambodia, Nepal, Vietnam, and the Philippines. In the three mainland Southeast Asia countries, communities are required to prepare and submit complex forest management plans, a major burden that constrains successful communal timber production. This burden is created by a combination of factors: a lack of preparedness among communities to develop these forest management plans and financial resources to pay for them, compounded by insufficient incentives and motivation within the forest administration office to provide technical and financial support that could serve to overcome this constraint [14].

4.2. Competitiveness of Community Forestry

Piketty et al. [14] and Pulhin et al. [11] draw attention to the challenges that community forestry faces in an environment characterized by cumbersome regulations, private sector competition, and poor support from public administration. Both papers provide detailed economic analyses of where along the timber supply chain these challenges translate into costs that diminish benefits, and at times undermine the viability of community forestry in Brazil and in the Philippines. The two papers demonstrate with cost benefit analysis that under certain conditions community forestry in both countries is profitable, not only for communities, but also for the other actors in the value chain. However, while this is the case, community timber producers, like most timber producers in other parts of the world, commonly operate in a tight economic environment. This is the case, because the forest sector is quite competitive and the timber that communities produce is often not of the highest quality, making it incapable of capturing premium prices on national or international markets. In addition, as alluded to in the previous section, community and smallholder forestry operators are dependent on a public administration sector that has minimal incentives to support community forestry, largely because there is little gain to be derived from such support. Lofty goals of improving community livelihoods and using forests sustainably are supported by some politicians, and civil society and grassroots organizations, but often not by officials working in the forest public administration in charge of administrating the forest sector, including even those mandated with facilitating communal forestry operations (e.g., [31]).

An additional challenge and threat to community and smallholder forestry is the pressure to convert forest land to agricultural production, as forestry operations seldom create sufficient household income. Furthermore, as stressed by Sitoe et al. [13], population growth and increasing demand and prices of agricultural commodities result in pressures for forest conversion. Increasing productivity in existing agricultural lands may thus be critical for maintaining forest cover in many locations.

4.3. Resilience and Adaptive Capacity of Community Forestry

Community forestry has been progressing over the last half century, but as has been shown, is still facing numerous obstacles. These are often regulatory and administrative in nature, compounded by

limited skills and capacities among communities to act as savvy economic operators, and by markets that allow rent seekers to operate, or operators to use power positions to dictate terms of trade or agreements. While these obstacles and constraints do exist, the papers illustrate the adaptive capacity of community forestry, and the need to foster this adaptability to address changing circumstance that affect the forest sector at large. This is convincingly argued by Ellis et al. [12], who review the case of community forestry in Quintana Roo, one of the oldest cases of community forestry worldwide. Community forestry in Quintana Roo is unique, because it has been built on a historical trajectory that has supported communal resource control that early on was expanded to include forests within communal territories. These favorable conditions were recognized when the international development community sought to support community based resource management in the late 1980s. Community forestry was "started" and was functioning reasonably well in the region since about the 1990s. As a result, Quintana Roo became an international showcase of the potentialities of community forestry to generate wellbeing and enable sustainable forest management, but with varying outcomes across communities.

The Ellis et al. [12] paper demonstrates that since "modern day" community forestry began in Mexico, quite a few circumstances have changed, including terms of international trade agreements and national forest and agricultural policies, among others. In addition, community forestry entrepreneurs have had to face severe impacts brought on by natural calamities, like, for instance, hurricanes that frequently plague Central America, including Southern Mexico. These and other quite dramatic changes have affected community forestry operations in Quintana Roo, and only a handful of communities have been able to remain profitable throughout this period of flux. The main insight from the Ellis et al. [12] study is that even where community forestry can be promoted successfully, it will face changing forest, land use, and wider economic and policy environments. Community forestry will also have to adapt to changes within the social and economic circumstances within the communities themselves, brought about by, for example, changes in markets and new economic opportunities.

Both the Ellis et al. [12], but also the Sitoe and Guedes [13] papers do suggest that community forestry does contain an inherent resilience to adapt to changing circumstances. The changing circumstances may also include new opportunities that were not yet present when community forestry was started in a particular region. The most widely discussed new opportunity relates to compensation for ecosystem services other than forest products that are traded in regional, national, or international markets. Compensation for managing forest carbon stocks, and capturing atmospheric carbon in tree vegetation, are among the most discussed options of payment for environmental services. There is now a broad consensus that in countries where REDD+ projects are being implemented, communities need to be included from the beginning in the preparation of the national REDD+ strategies, and become a part of National REDD Readiness proposals. The challenges that community projects face when trying to include compensation for carbon stocks management, or enhancing stocks management is analyzed in detail by Poffenberger [15], among Khasi Hills Community REDD+ in India, and has been explored hypothetically by many others. Countries that engage in a REDD Readiness trajectory and that develop national REDD strategies will need to address relevant issues of how to deal with communities. However, independent of the national approach to the global REDD+ project, or CDM (clean development mechanism) reforestation and afforestation projects, communities which strive to capture carbon compensation will face a new round of regulations, policies, and trade challenges, similar to what occurred when communities began to explore options to engage in timber production and trade from communal lands. The new opportunities for community and smallholder forestry to derive benefits from these new developments is only just beginning. They will bring with them many new challenges, and lessons from past experiences should be taken into account.

5. Conclusions

Community forestry has matured as a communal natural resource development intervention, with much accumulated experience and outcomes to show for this experience. Community forestry, or

at least the interest of local forest users, communities, and smallholders, is now widely considered in national forest policies. The accumulated experiences of community forestry interventions invite comprehensive assessments to derive lessons to identify strategies or approaches that are more likely to lead to successful community initiatives in forest management and conservation. The fact that academic inquiry into community forestry has been undertaken in parallel with real, on-the-ground efforts to promote and support community forestry is of fundamental importance, resulting in a deeper understanding of the factors that influence community forestry and specific mechanisms that tend to favor its success.

While community forestry and the interests of local forest users are now widely considered in national forest policies, it is especially in this area where much improvement is still required and can be made. Several papers in the special issue draw attention to policies and administrative procedures that are often cumbersome and inappropriate. In these cases, policies and administrative procedures prioritize a business as usual rationale, and are therefore defined according to established procedures and formats, even though they fail to achieve, and often interfere, with intended objectives. An additional major obstacle corresponds to deficient public administration which results in few incentives, motivations, or capacities to provide good services to support community forestry. Quite commonly, rather than providing support, the public administration becomes an obstacle and plays an important role in fostering failing legality compliance that characterizes the sector.

There is much expectation that community forestry can play an important role in achieving global environmental objectives, like, for instance, contributing to climate change mitigation by reducing deforestation and restoring forest cover and by enhancing the related provision of ecosystem services. In that sense, community forestry has been assigned an important role in achieving the SDGs that the global community agreed upon in 2015. While this confidence in community forestry creates new opportunities, it also will bring with it new challenges and constraints. It can be expected that community forestry will deliver new benefits and that the implications of delivering these new benefits will not be unlike the period when community forestry became a greater supplier of timber.

It is also clear that community forestry cannot be developed or practiced in isolation. It is inherently part of a continuum of land uses ranging from forestry to agroforestry and intensive agriculture. As such, community forestry development should also be seen as an element in the development of the larger landscape and the livelihood options of the people residing there.

The attributed evidence from the literature and from the papers in this special issue is that community forestry does hold potential for countries with forested regions to mobilize rural residents to achieve environmental objectives through forests and their management. However, the challenges to actually contribute significantly to rural livelihoods are much greater, because forestry is a highly competitive sector and communities are not the strongest actors involved in it. In addition, regulatory, administrative, and institutional support is not unequivocally conducive to maximizing communal or smallholder benefits. The latter has only partly to do with deficient regulations, administration, or institutions, but is also because enhancing community benefits may not always be a priority when relevant legislation and policies are being designed.

Acknowledgments: The special issue has been supported primarily by Natural Resources Institute Finland and the Ministry for Foreign Affairs of Finland. In addition, it has been supported by in kind contributions of Kyoto University, the University of Florida in Gainesville, Florida, and the Center for International Forestry Research, as well as in kind contributions of the host organizations of the authors of the papers of the special issue. The publication of the paper by Etongo et al. was supported by the Department of Forest Science, University of Helsinki and the paper by Gritten et al. by The Center for People and Forests. The publication of the paper by Pacheco et al. was supported by the CGIAR Research Program on Forests, Trees and Agroforestry (CRP-FTA). The publication of the Sloan paper was supported by private funds.

Author Contributions: This editorial has been written in close collaboration between the contributing authors. De Jong took the lead in drafting the paper. Katila, Galloway, and Pacheco contributed on various occasions by commenting on subsequent drafts and contributing sections.

Conflicts of Interest: The authors declare no conflict of interest.

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