




Article

Achieving Quality Forest and Landscape Restoration in the Tropics

Liz Ota ^{1,*}, Robin L. Chazdon ^{1,2} , John Herbohn ¹ , Nestor Gregorio ¹, Sharif A. Mukul ¹ 
and Sarah J. Wilson ³

¹ Tropical Forests and People Research Centre, University of the Sunshine Coast, Maroochydore DC, QLD 4558, Australia; rchazdon@usc.edu.au (R.L.C.); jherbohn@usc.edu.au (J.H.); ngregori@usc.edu.au (N.G.); smukul@usc.edu.au (S.A.M.)

² Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT 06268, USA

³ School of Environmental Studies, University of Victoria, David Turpin Building, Victoria, BC B243, Canada; sjwil@umich.edu

* Correspondence: lota@usc.edu.au

Received: 18 June 2020; Accepted: 26 July 2020; Published: 28 July 2020



Abstract: Forest and landscape restoration (FLR) is being carried out across the world to meet ambitious global goals. However, the scale of these efforts combined with the timeframe in which they are supposed to take place may compromise the quality of restoration, and thus limit the persistence of restoration on the landscape. This paper presents a synthesis of ten case studies identified as FLR to critically analyse implemented initiatives, their outcomes, and main challenges, with an eye to improving future efforts. The identified FLR projects are diverse in terms of their spatial coverage, objectives; types of interventions; and initial socioeconomic, institutional, and environmental conditions. The six principles of FLR—which have been widely adopted in theory by large global organisations—are inadequately addressed across the initiatives presented here. The identified FLR project or interventions, although expected to offer diverse benefits, face many challenges including the lack of long-term sustainability of project interventions, limited uptake by regional and national agencies, limited monitoring, reporting and learning, poor governance structures, and technical barriers, which are mainly owing to institutional weaknesses. On the basis of these cases, we propose that the best pathway to achieving FLR is via an incremental process in which a smaller number of more achievable objectives are set and implemented over time, rather than setting highly ambitious targets that implementers struggle to achieve.

Keywords: Bonn Challenge; governance; landscape approach; nature-based solutions; reforestation

1. Introduction

The large-scale restoration of ecosystems has never been more urgent. Human activities have dramatically impacted global ecosystems and the services they provide to people [1]. Some global systems (e.g., biosphere integrity, nitrogen cycle, and climate change) have been altered so heavily as to reduce resilience and threaten the stability of planetary life support systems [2,3]. Recent estimates suggest enormous potential to restore and enhance global tree cover, which could significantly help to mitigate carbon emissions [4,5], promote biodiversity conservation, and provide forest ecosystem goods and services. However, restoring forests and landscapes requires much more than simply planting trees; it involves halting and reversing degradative pathways and creating transformative restoration systems that complement conservation and sustainable production systems [6]. Restoring ecosystems and landscapes is a means to achieve multiple benefits and outcomes, rather than a goal in itself. A holistic approach is needed that provides both social and ecological benefits while building social, human, natural, and financial capitals [7].

Forest and landscape restoration (FLR) is a holistic approach that builds on the social and environmental particularities across landscapes, and aims to enhance the amount and quality of tree cover in a sustained and cost-effective way to achieve multiple benefits [6]. The integration of objectives and land uses at a landscape scale through FLR is one of the means to address threats to the Earth's system [8–10]. Forest and landscape restoration is recommended as one of the approaches under the nature-based solutions movement [7]. The approach is based on the premise that a mosaic of working lands can increase conservation values and ecosystem services for sustainability and resilience while providing benefits to people [11–13].

Forest landscape restoration was proposed as a concept in 2000 in an effort to provide background and define principles for forest restoration [14], and was later modified to its current version without changes in its definition [15]. Definitions, principles, and frameworks for FLR have been proposed to establish a common understanding of the concept, guide-related initiatives, and ensure restoration quality [16–18]. Despite the availability of a large amount of conceptual materials on FLR, for example, [17,19–21], its definition remains 'vague' to allow flexibility and adaptation to local contexts [22]. Forest and landscape restoration is one of several approaches that have been adopted by the United Nations Sustainable Development Goals, the Paris Climate Agreement, the Bonn Challenge and New York Declaration on Forests, and more recently the United Nations Decade on Ecosystem Restoration [23]. Nevertheless, the current focus on hectare-based restoration targets risks emphasizing quantity over quality, allowing simplistic and large-scale tree planting to replace a more nuanced and multi-faceted landscape approach. This trend could jeopardize advances toward long-term goals of biodiversity conservation, meeting human needs and the provision of ecosystem services.

Landscapes vary widely in their biophysical characteristics, history, and current socio-political contexts—there is no one-size-fits-all approach to restoring landscapes. The diversity of outcomes and magnitude of restoration expected under global targets require processes that go beyond business-as-usual [24]. However, despite its promise, the effectiveness of landscape approaches has not been adequately demonstrated [25], and there is a limited amount of evidence on FLR outcomes and impacts [26]. Chazdon et al. [26], in this issue, provide a critical overview of the need for tailored working frameworks based on a common conceptual framework founded in a core set of principles. The six principles for FLR revised by the Global Partnership on Forest and Landscape Restoration (GPFLR) [16] are largely accepted by researchers and practitioners. To address this gap, we critically analyse what is being carried out in the name of FLR. We gathered 10 case studies of projects identified as FLR by their implementers or promoting agencies, and qualitatively assessed the initiatives, their outcomes, main challenges, and opportunities. We summarised lessons learned from these case studies to identify knowledge gaps as well as to aid future FLR interventions. Our synthesis uses the six core principles as a common vision of what is expected from FLR, but not as criteria for inclusion of case studies.

2. Introduction to the Case Studies

The FLR case studies included in this synthesis were presented in plenary sessions at the International Conference on Forest and Landscape Restoration held in Manila, Philippines, in February 2019 [27]. Prior to the conference, we called for case studies that were identified as FLR in the tropics. The cases were chosen from 30 submitted, and were selected to encompass a broad geographic scope and demonstrate a wide range of contexts and challenges. Case studies focused only on ecological restoration with no regards to the social and institutional landscapes were not considered. Four of the case studies presented at the conference are published in this special issue [28–31]. The author of the case study in China was originally supposed to have presented a project that took place in a tropical area, but changed the focus of the presentation. This case study was kept in the study because it presents interesting insights.

As FLR has only recently been adopted at a broader scale, many of the projects assessed were not recognized as such at the time of implementation. Nevertheless, these projects had goals and approaches consistent with at least some aspects of FLR and have identified themselves with the movement throughout the process. General details of the case studies, and respective relevant publications, are displayed in Table 1. Themes were extracted from the case studies for the development of the following sections.

Table 1. Details of forest and landscape restoration case studies presented in the International Conference on Forest and Landscape Restoration (FLR) held in Manila, Philippines in February 2019. All presentations are available at <https://flr2019.weebly.com/presentations.html>.

Project Title Relevant References	Location Area, Time Frame	Project Objectives Main Interventions	Main Outcomes and Lessons Learnt
The Water Producer Project [31], this issue	Joanopolis and Nazare Paulista, Brazil 489 ha, 2007–2015	Testing Payment for Environmental Services as a tool for FLR. Implementation of conservation, restoration, and improved agricultural and soil conservation practices. Promotion of biodiversity conservation and water quality improvement	The project was partially successful. Goals were attained to some degree, but the area for conservation and restoration was much below target. Not all the money available for payment for environmental services (PES) was used because the participation of landowners was far below expectations. These factors contributed to limited success: absence of local organisations leading the project, no long-term guarantee of continuity of the project, amount of paperwork for landowners' participation, inflexible institutions funding the project, and low PES value.
Multi-function forest restoration and management of degraded forest areas in Cambodia	Kbal Toeuk and O Soam, Cambodia 50 ha, 2012–2015	Rehabilitation of degraded forests with timber and non-timber forest products. Establishment of tree nurseries and demonstration plots, and provision of training to community	Some of the goals of the project were achieved, but seedling survival rates of native species were low. Community achieved improved tenurial rights, reducing illegal forest activities. Community support was crucial, women had a very active role in the implementation of several activities. Three years of support may not be enough for the 50 ha of restoration to be sustainable, further technical and financial support are needed.
FLR in the Miyun Watershed–livelihoods and landscape strategy and megacity watershed initiative	Miyun Reservoir Watershed, China 30,000 ha, started in 2008	Watershed protection and livelihood improvement. Promotion of close-to-nature forest management practices, support for fuelwood needs, high-value livelihoods, and management support to increase capacity of farmers and cooperatives	The project had both success and failures. It was successful in restoring some critical areas, setting up demonstration community-based restoration models, and establishing new mechanisms to fund watershed protection. Nevertheless, the attraction of new funding and scaling up of the model remain limited. Adding to that, the sustainability of funding and leadership were an issue.

Table 1. Cont.

Project Title Relevant References	Location Area, Time Frame	Project Objectives Main Interventions	Main Outcomes and Lessons Learnt
Integrated Food Security Project in Northern Ethiopia [32]	Amhara Region, Ethiopia 1996–2008	Social mobilization, institutionalisation of beneficiaries and livelihood development as a means to restore degraded land, sustain outputs, and make use of assets from restoration	Restoration project was successful in improving local livelihoods through the increase in income from fodder. The institutionalisation of beneficiaries was crucial to ensure good governance and persistent success. Degraded lands were rehabilitated. Despite the potential for income from carbon credits, the scale of the project is too small and there are no national markets for carbon in Ethiopia.
Campo Verde Project by Bosques Amazonicos in Ucayali [30], this issue	Ucayali, Peru 2040 ha, 2008–ongoing	Reforestation and rehabilitation of degraded areas and promotion of biodiversity conservation through planting and assisted natural regeneration and development of capacity of surrounding communities.	The project met its objectives and the restoration model was replicated in the region. Carbon credits were marketed in a few occasions. but discontinued owing to the burden related to the prerequisites of the mechanism. Success was attributed, among other factors, to the use of local valuable species and knowledge, intermediate technology employed, simplicity of operations, and institutional alliances. To scale-up the model, there is the need to provide reliable and suitable financing, technical assistance, and quality seedlings or seeds as a credit to be paid with timber sales.
Pilot community-based forest restoration project in Biliran Province [29], this issue, [33]	Caibiran, Biliran, Philippines 26 ha, 2013–ongoing	Restore watersheds, improve livelihoods, and test best practices for restoration. Interventions included social preparation, forest nursery establishment, planting for production forest, protection forest and agroforestry, and provision of livelihoods	The project was successful in terms of tree and crop establishment and growth. Community members were able to benefit from food products in the early years of the project and there is potential for benefits from timber in the future. Human and social capitals improved as a result of capacity training and community organisation promoted by the project. Nevertheless, challenges remain. Seedling nursery was expected to be an additional livelihood opportunity, but the community has not completed the application for accreditation by the responsible agency. The community organisation did not apply the best practices used in the project in a consecutive project they obtained.

Table 1. Cont.

Project Title Relevant References	Location Area, Time Frame	Project Objectives Main Interventions	Main Outcomes and Lessons Learnt
The Carood Watershed Project	Carood Watershed, Philippines 2015–2017	Strengthen and sustain partnerships among stakeholders, improve ecological conditions of watershed, sustain healthy supply of water, create enterprises, increase preparedness and resilience to climate change, and promote good governance and efficient use of resources	Project was highly successful in meeting goals. The watershed has been under the management by the Carood Watershed Model Forest Management Council since 2003 and demonstration and training sites for protection and production exist. The most important method for restoration was assisted natural regeneration, combined with fire prevention, soil and water conservation, and provision of livelihoods. Sustained maintenance and protection are prioritized and comprised the largest portion of the budget.
Philippines Penablanca Sustainable Reforestation Project	Penablanca Protected Landscape and Seascape, Philippines 2943 ha, 2007–2013	Promotion of sustainable forest conservation and of compatibility of multiple uses of forests (i.e., biodiversity protection, watershed management, carbon sequestration, other ecosystem services for local communities)	The project had several achievements regarding sustainable conservation and management for multiple purposes, including the establishment and management of several marketable fruits and a business plan for marketing. Nevertheless, the goals of the project were too ambitious, stakeholders had overly-high expectations and the community was unable to manage reforestation funds, despite long capacity building effort.
Developing forest restoration techniques for northern Thailand's upper watersheds while meeting the needs of science and communities [28], this issue	Doi Suthep–Pui National Park, Thailand 32 ha, 1996–2013	Each stakeholder group had their own goals. The research organisation wanted to find effective restoration techniques, the local communities aimed at strengthening their rights to remain on the land, and the national park's goal was to reclaim encroached land and reforest to meet national targets. The interventions carried out were promoting reforestation through tree planting and assisted natural regeneration	Through the project, the framework species approach for restoration was developed and knowledge on local species and adequate management for restoration increased. The project led to the recovery of carbon dynamics and reduced community conflicts, as well as improved biodiversity, relationship among stakeholders, community security to remain on the land they currently occupy, and assistance sourcing by local communities. Despite all the effort and resources dedicated to the project, sustainability of FLR can never be guaranteed and gains can be easily lost when changing political and economic conditions fail to support restoration or prevent fires.

Table 1. Cont.

Project Title Relevant References	Location Area, Time Frame	Project Objectives Main Interventions	Main Outcomes and Lessons Learnt
Demonstration of capacity building of forest restoration and sustainable forest management in Vietnam [34]	North Vietnam 2010–2012	Management, restoration, and protection of mangroves and climate change mitigation at the community level. Establishment of forest restoration using best practices, promotion of participatory design for enrichment planting and income generation from non-timber forest product, monitoring activities, enhancing of local institutions and policies, and improving local capacity	Thousands of hectares of mangroves were rehabilitated, but ensuring persistence of the plantings is challenging. The form in which the project operated helped changing society attitude towards mangrove, leading local people to protect and restore mangroves. The program had a very long duration (1996–2016), but the three years of the project support to local communities were not long enough to ensure sustained action. Forest extension workers must be skilled to work with communities and ethnic groups. Social preparation and capacity building take time. Native species should be selected by communities with advice from foresters to ensure species-site matching. Land and forest tenure are critical to ensure protection by households. If community is market driven, there is the opportunity to create community enterprise

3. Forest and Landscape Restoration Case Studies

The selected cases were highly heterogeneous. They covered a wide range of scales ranging in size from ten to thirty thousand hectares and geographies, including Asia, Africa, and South America, with most of them in the tropics. Areas under restoration reflected different patterns of ownership and land rights, including private land ownership, government concessions to community groups, and the absence of legal use rights. The projects were supported and implemented by international environmental and development bodies, universities and research organisations, local government departments, farmers' associations and community organizations, and charity and aid agencies. Among the project goals were the following: conservation of biodiversity, soil, and water; climate change preparedness, resilience, and mitigation; and enhancement of livelihood options related to agriculture, timber, and non-timber forest products. Projects also aimed to increase stakeholders' knowledge and skills, promote entrepreneurship and good governance (governance refers to the decision-making rules, structures and processes [35,36]), and strengthen tenure rights and community cohesion.

Several tools and approaches were used in the projects including the Forest Landscape Restoration Handbook [37] and the FAO Sustainable Forest Management toolbox [38]. Community-based forestry was used in many cases as a means to implement FLR, and communities often provided support, physical space for activities and some labour as in-kind contribution. Interventions included assisted natural regeneration, tree planting and management, forest management, capacity building, and social preparation and organisation. Some of the projects also tested experimental approaches or best practices for forest restoration, such as in the Philippines (Biliran), Brazil, Cambodia, and Thailand.

3.1. A Range of Potential Starting Points for Forest and Landscape Restoration

Forest and landscape restoration initiatives comprise different components and processes [26] that start from different points in terms of steps of the process, level of local capacity, and environmental and institutional conditions (i.e., conditions related to established norms, practices, or laws). These cases demonstrate that FLR is a journey and requires preparation and a road map to achieve even moderate success. The cases in Biliran and Thailand are good examples of two different starting points. In Biliran, the community had been involved in several reforestation projects that failed, resulting in discouragement to engage in restoration again. In addition, there were competing land claims, and their levels of financial, social, and human capitals were very low. A whole year of social preparation—including clarifying land and tree rights, duties, and responsibilities, and the extent of financial and logistical support to be provided by the international research and development agency—was needed prior to any tree planting. Social training also included the capacity building to manage a community organisation, deal with financial resources, and develop their own policies. In Thailand, on the other hand, the community was more prepared for restoration. They were better organised and had their own motivation to restore forests; that is, to gain political capital and strengthen land use rights within a protected area. Nevertheless, the area was degraded, and a three-step approach—mostly related to the biophysical environment—was required: (1) protecting the area to prevent fires; (2) promoting assisted natural regeneration; and (3) planting framework trees.

3.2. How Are the Principles of Forest and Landscape Restoration Incorporated into Practice?

The six principles for FLR can be a valuable road map for planning and adaptive management. Nevertheless, although holistic and integrative, the principles of FLR are also broad and lofty and, as such, are unlikely to be fully pursued in the short term. We found that some principles were more frequently incorporated into FLR projects than others (Figure 1), which was also demonstrated in an analysis of 17 case studies against the FLR principles by ITTO [39]. The lack of compliance with all principles may lead to doubts about whether the project can be classified as an FLR project. Not all principles can or should be addressed initially, and there are values beyond those covered by the principles that may be crucial in particular circumstances. In practice, projects often start with a

single focus, such as food security or watershed protection, and evolve to incorporate broader FLR principles. This explains the difference between FLR as a process versus a project based on FLR. An incremental process might be a better strategy than trying to achieve too many goals at once. It is also important to match goal setting to the local context—having goals and expectations unrealistic to the context in which FLR is taking place can be counterproductive. For example, the FLR project in Ethiopia was overly ambitious and the range of activities too wide, resulting in a weaker focus on specific activities. The project implementer believes that fewer, more important activities should have been prioritised, such as the provision of livelihoods. Similarly, in the Philippines (Penablanca) case, goals were too ambitious and donors' expectations for early outputs were unrealistic, particularly when compared with the timeframe for the project activities.

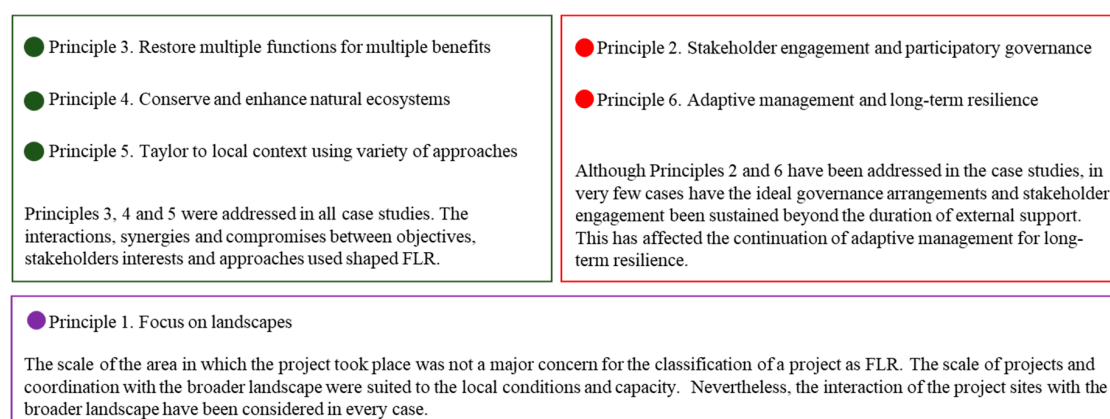


Figure 1. How the forest and landscape restoration (FLR) principles are being incorporated in projects.

The focus on forest restoration has expanded from mostly biophysical dimensions to embrace the social landscape as well. With this, projects are spending more resources addressing socioeconomic and institutional needs to enhance their outcomes. Stakeholder engagement and promotion of good governance for increased resilience, related to principles 2 and 6, have been addressed in the case studies (e.g., in the case studies in Ethiopia, Biliran, Thailand, and Brazil), but were insufficient in many cases. Despite the efforts to ensure the persistence of gains and the range of benefits from FLR, projects are still too short and ambitious. A short-term project focus resulted in limited adaptive management for long-term sustainability and discontinued action. Principles 2 and 6 are enablers of all others, but are also more challenging because they depend on the sustained commitment of local people after the end of support from external agencies.

Coordination across landscapes was lacking in several cases, and others were focused on small areas of less than 50 ha. In these cases, focusing on a larger area would be impractical considering the limited capacity of the communities involved to manage the land. A larger area could also be beyond the aspirations of the people involved. However, the size of the project and the lack of coordination across landscape did not limit their self-identification as FLR. The concept of landscapes can be viewed through different lenses; there is no single definition of landscapes [40]. Landscapes can be viewed as arenas in which entities interact according to physical, biological, and social rules and actors pursue a specific set of objectives, rather than simply a physical space [21,41].

The involvement of women as important actors at the community level was emphasised in most case studies, but more detail is needed regarding the type of participation—for example, an activity-specific or interactive and empowering participation [42]. All case studies were based on projects with multiple objectives, stakeholders, and approaches. These interactions were a strong defining aspect of FLR, and the most critical aspects for the initial phase of the process, where building trust and cooperation through a shared vision and negotiating working trade-offs strengthens social

capital and collective learning. A solid base of social and human capital assets enables the transformation of other capitals and a more sustained process.

3.3. *The Benefits of Forest and Landscape Restoration*

Most projects were only partially successful in achieving their stated goals. However, several unplanned benefits were also achieved. Natural capital was improved in many cases with the provision of ecological and environmental benefits, including erosion control, soil fertility recovery, wind protection, improvement in water quantity and quality, and biodiversity conservation. Financial capital of local people involved in the projects also increased with the availability of crops, livestock products, and timber and non-timber forest products. The improvements in natural and financial capitals resulted in increased food security and reduced vulnerability to market and environmental shocks.

Income from payments for environmental services and carbon was too limited to provide a sufficient incentive to local landowners. In the case study in Brazil, a contract for only three years of payment was available for landowners involved in the project. In Ethiopia, potential income from carbon was calculated, but the scale of the project was not large enough and there was no binding national marketplace for carbon. In Peru, on the other hand, the project was successful in capitalising on the carbon accumulated through the interventions, and 169,000 carbon credits were generated for the carbon market. However, carbon sales were discontinued because the burdens posed by the requirements of the carbon markets are not compensated by the income it generates.

Further outcomes observed in the case studies included reduced land-use conflicts and increased tenure security; increased human capital in terms of knowledge and skills; and improved social capital in terms of bridging, bonding, and linking capitals. The improvement of human and social capitals was probably the benefit with longer-lasting impacts in the case studies. These improved capitals not only helped in the maintenance of FLR in some cases, but also created enabling condition for other agencies to provide further support for development and infrastructure as in Biliran, Cambodia, and Thailand. This demonstrates how the increase in capital can lead to further increase in community capacity because it creates opportunities and remove barriers. This is in accordance with the findings by Baynes, et al. [43], which suggest that increasing bridging and bonding social capitals with capacity building is an efficient means to deliver assistance.

4. Main Challenges Encountered in Forest and Landscape Restoration

4.1. *Limited Persistence of Gains*

Despite the range of benefits brought by FLR, as described in Section 3.3, and despite the stated success in meeting project-specific short-term outputs, forest gains are often reversed once the supporting agency withdraws, and limited long-term impacts are achieved. Great effort has been put in place to prepare the institutional environment, increase stakeholders' capacity, and address threats to FLR in the case studies. Nevertheless, institutional weaknesses, limited capacity of stakeholders, and other threats compromised the sustainability of FLR in many cases. Institutional weaknesses are often observed through poor governance and unbalanced power relations, leading to corruption, unfair benefit sharing, and low security of tree and land tenure. Poor governance can also prevent an empowered participation of marginalised social groups, such as women and the poor, in decision-making processes. Institutional issues damage trust and limit maintenance and adaptive management [31,44].

The importance of livelihood opportunities for local people was emphasized in the case studies. In Biliran, it has been observed that membership fluctuates depending on the projects in which the community organisations are involved at the time, and that short-term financial return is the main driver for short-term participation in projects. Long-term engagement, on the other hand, is sustained when there are continuous livelihood opportunities, tenure security of land and trees, equitable benefit sharing, and improved human and social capitals.

The lack of sustainability after termination of external support has been observed not only in forest restoration and community forestry, but also in other areas such as community-based fisheries and mangrove management, for example, [45,46]. Even though support from external agencies can often be critical for development project success, communities can become reliant on continued support [47,48]. This means that, when support to community forestry comes to an end, they are often unable to continue. In extreme cases, communities were used simply as contractors to achieve reforestation goals of external parties, with no sense of ownership of the project [48,49]. On the other hand, ensuring that projects are relevant as a solution to local livelihood needs and challenges can create a sense of ownership and pride, and better ecological and social outcomes [50].

Forestry requires long periods to achieve outcomes, and support is often provided for a limited number of years. Capacity building at the grassroots level enhances the chances of the communities developing and retaining a degree of autonomy and the ability to negotiate relationships after the end of external support [51]. Ensuring that the level of local capacity is consistent with the future management and institutional demands of the project is a crucial part of the exit strategy of a support project and may be decisive for the long-term outcomes of the investment.

4.2. Limited Scaling up of Successful Initiatives

In many cases, regional and national agencies failed to replicate successes of the case studies, and there was limited ‘scaling-up’ and ‘scaling out’ of the pilot initiatives. Many of the cases presented here piloted best practices for restoration and provided extensive support to the focal communities, with intensive use of resources. Adding to that, in many cases, success was driven by the presence of key individuals, and the replication of these efforts without the strengths brought by these key people might not lead to the same levels of success. The type and extent of support that was provided in the case studies is likely beyond what governments can provide considering the magnitude of restoration needed globally. Inadequate time and support for social and institutional preparation and capacity building is likely to lead to failure. The main question is how to balance the large-scale goals for restoration and the limited resources available per unit of area to do so.

4.3. Limited Scope of FLR Project Monitoring, Reporting, and Learning

All case studies outlined monitoring and reporting activities. In Thailand, for example, regular monitoring involved villagers as main data collectors for a direct learning process. In Biliran, monitoring by the implementing community organisation continued despite the withdrawal of most of the financial support. In Peru, monitoring was compulsory to meet requirements of carbon markets. Despite the inclusion of monitoring and reporting in the process, in several instances, like in Ethiopia, these were carried out only to comply with project requirements and lacked baseline data for tracking progress and unplanned outcomes. Few case studies presented detailed economic data, whereas ex-post and ex-ante cost-benefit analyses are especially important to engage investors at scale [20]. Adding to that, self-reporting occurred in most of the case studies, and rarely were failures and reasons behind them reported. Catalano, et al. [52] found a ratio of reporting of successes and failures in conservation projects in the literature of 4:1.

The limited scope of monitoring and reporting is a widespread shortcoming. A guide for monitoring FLR has been proposed, that is, [53]. The guide provides several options of indicators and metrics depending on the goals and scope of the initiative. Nevertheless, embedding this monitoring framework into real-world initiatives remains a challenge and the framework lacks a connection to the FLR principles [26]. Moreover, outcomes of FLR cannot be perceived in a very short term and donors often ask for short-term reporting. The difficulty to define and measure progress makes retaining the interest of donors challenging [21]. Additionally, the mismatch between short- and long-term ecological and economic goals is accentuated by the life cycles of donor-driven projects [44]. Using outcome-based indicators might be challenging owing to the dynamic nature of this type of project. Methods for assessing the effectiveness of the measures implemented may be employed instead [54]. Innovative monitoring

approaches should be based on a variety of knowledge systems, which allows the interpretation of activities, progress, and threats; shared learning; and the updating of the theories of change that underlie the approach [21,55].

4.4. Need for Improved Governance in the Process

Landscape restoration is not only a management practice embedded in special planning procedures, but also a governance practice [40,56]. The case studies displayed the multiple arrangements and levels of governance in land-use management and decision-making. Some of them were poor and ineffective. In Ethiopia, activities were planned at the micro-watershed level, but a lack of coordination between agencies working in the same area limited the level of adoption of project and collaborative financing schemes. In Penablanca, poor governance led to distrust among partners, abuse of power by leaders, lack of transparency on the use of project funds, and unmet project activities. In Biliran, the community organisation was highly dysfunctional and support was needed for the development of local policies in alignment with the local government agencies, to strengthen local governance. In Brazil, the lack of a local agency to link the implementing organisation to the landholders created a gap in the governance structure. Poor alignment among government sectors and levels, the variety of social and environmental circumstances, and limited enabling conditions and capacity for implementation are common governance challenges in FLR [44].

In Carood, on the other hand, a more effective governance structure was put in place. A watershed management council brought together different stakeholders and acted as a platform for decisions at the watershed scale, in acknowledgement that decisions at the municipality level were not adequate for that circumstance. Multi-stakeholder governance platforms like this can enable the coordination of efforts at different levels and facilitate negotiation, decision-making, and monitoring and evaluation for adaptive management [57]. Good governance and mutually understood and negotiated processes of change lead to transparency [21] and sustained collective action. These apply for local actions. Moving further, to connect global demands and local practices, landscape governance must take the shape of overlapping networks of stakeholders that act across ecological, geographical, and political scales, rather than a linear planning process focused on a single outcome [40].

4.5. Technical Challenges

Among the technical challenges encountered in the case study were the following: limited species-site matching (e.g., in Brazil, there was considerable loss of seedlings in seasonally flooded areas); impacts from extreme climate and fire; use of low-quality seedlings or limited supply of adequate planting material; and limited uptake of best silvicultural and ecological practices. The technical challenges experienced in the case studies have been observed for decades in agroforestry adoption, community-based forest management, sustainable forest management, and other previous forest-related movements. In some instances, limited technical knowledge constrains the use of more appropriate species or practices in forest restoration. That is particularly true when using less common plant species in the tropics. Nonetheless, in some cases, technology, knowledge, and information are available and acknowledged by implementers, and still poor planting material, practices, and systems are employed.

Technical challenges sometimes result from institutional arrangements that prevent the use of better practices. In several case studies, the limited timeframe for implementation of the project resulted in a compromise of the use of best practices to achieve reportable, short-term outcomes. In Biliran, despite having learnt and adopted quality seedling production in the FLR project, the community used poor seedlings in further plantings sponsored by the government owing to the delayed release of funds, which led to the short seedling production period. In other instances, technical challenges stem from institutional constraints that limit access to and availability of resources to communities—including information, inflexible relocation of resources in project budgets, and top-down regulations that are unsuitable to the local level.

5. Prospects for Forest and Landscape Restoration

5.1. Innovative Business Models

The case studies illustrate that, although restoring lost tree cover was the main driver for external support organisations, the motivations for the involvement of local people were rarely focused solely on environmental reasons. Whereas governments focus on conservation, increasing forest cover and sequestering carbon to meet environmental commitments, local people's interests lie mostly in the direct benefits to them. Despite opportunities to combine productive lands with conservation, deeply entrenched policy and market conditions still favor industrial scale or extractive models of land-use [11]. The level of benefits required for local people to engage in forest restoration might depend on the opportunity cost. Where reforestation displaces intensified land uses, business models need to be developed to incentivise and compensate local people for the foregone income. In other cases, in highly degraded land with few economic opportunities available, business models need to be developed that provide livelihood opportunities for community members so they have the capacity to engage in restoration activities.

The principles for FLR provide a framework for effective negotiation of outcomes among stakeholders and can be relevant to efforts aimed at payment for environmental services and REDD+ [21,26]. Nevertheless, payment for environmental services, including payment for carbon, included in some of the case studies had limited outcomes, as discussed in Section 3.3. Further, when payments were realised, issues for scaling it up were encountered. The Brazil case study demonstrated that the actual payment for ecosystem services is only small portion of total costs of a payment for environmental services project. The ratio between the payment to the costs related to planning, implementation, communication, and monitoring was 1:12. Adding to that, payment contracts were only for three years, which is not enough for landowner to compromise a rentable land use (even if minimally rentable) for forests for payments for ecosystem services.

Payments for environmental services are not appropriate in some or even many circumstances. High-value livelihoods were promoted in the case study in China, through the production of mushroom and promotion of ecotourism. Early sources of income such as crops, fruits, and forest seedlings were also suggested to ensure engagement. However, just promoting livelihoods might not be enough in a market-driven society. Capacity building for entrepreneurship and linking people to niche markets that are ready to pay a premium price for products from such projects might be needed. Innovative business models need to be trialed to increase the benefits to local people and reduce their dependence on external support. These models can include payments for services or products, premium prices, provision of non-forestry livelihoods in parallel to forest restoration, and partnerships with the private sector, among many other strategies.

5.2. FLR Implementation through Community Forestry

In developing countries, most FLR initiatives will be implemented through some form of community forestry involving community groups or groups of smallholders. All of the FLR cases presented in the Special Issue and reviewed in this manuscript involved communities in their implementation. Hence, the factors that affect the success of community forestry become critical to the success of FLR. The results of the case study analysis further support and highlight the importance of the model presented by Baynes, Herbohn, Smith, Fisher, and Bray [43], which identifies the five key factors affecting the success of community forestry as being governance, benefits, socio-economic and gender equity, property rights, and government support. Communities within the landscapes in which FLR is being implemented, and especially community forestry groups (CFGs), are fundamental to the success of FLR. Hence, ensuring CFGs are successful should be fundamental to the implementation of any FLR initiative. In Nepal, the Baynes et al. framework has been operationalized as a tool for identifying potential intervention points for supporting the tenure and governance-enabling environment for community forestry enterprises [58]. In a similar fashion, the Baynes et al. framework could be used to identify

the key intervention points for the implementation of an FLR program through community-based forestry projects.

5.3. Linking to Other Synergetic Efforts

Forest and landscape restoration is not the most suitable approach for every degraded ecosystem. Nevertheless, it is a useful approach in simultaneously addressing several urgent issues including poverty and climate change. The approach can be incorporated in climate change mitigation and adaptation, and development projects and programs as a means of improving the use of the land, while addressing the needs of rural people. This is particularly important because forest income is more important for rural households under extreme weather conditions than for those in more intermediate weather, and forest-foraging activities help households to cope with weather shocks [59]. Adding to that, FLR is being used as an approach to mitigate issues caused by several other types of threats. In Bangladesh, for instance, the approach is being employed to mitigate the environmental consequences of the Rohingya humanitarian crisis [60,61]. In the Philippines, the governmental National Greening Program to reforest degraded areas of the country decided that working with ex-armed group members would be a major goal for 2020 [62]. Moreover, in Uganda, tree planting has been identified as a strategy to reduce pressure on forest resources and avoid conflicts over wood between refugees and host communities [63].

There is also a great opportunity for FLR to be supported by private companies as a means to meet their environmental targets and corporate social responsibility needs. In an era in which the private sector is under severe scrutiny to avoid greenwashing, pure tree planting for carbon without regard for the needs of local people is not a reasonable or long-lasting intervention. There are also large areas in the tropics with the need for intensive resource inputs for restoration that are not being included in governmental initiatives. In Peru, for instance, private investment in a high-risk activity was one of the key factors for success. Dealing with the risks associated with landscape restoration will be a challenge for private sector involvement, but guidelines and collaborative operational frameworks for FLR might reduce risks in the process [21].

6. Conclusions

Forest and landscape restoration has great potential to mitigate or alleviate the effects of human activities in the global systems. The cases presented here demonstrate that FLR can assist in biodiversity conservation, maintenance of nutrient and water cycles, and provision of goods and services to meet human needs. The variety of initiatives identified as FLR, their aims, arrangements, sizes, and approaches reflect the diversity of socioeconomic, institutional, and biophysical landscapes in the need for restoration and the different agendas and objectives of supporting organisations. The cases here show that the principles proposed for FLR can be a useful ‘blueprint’ to guide efforts, but a translation from a global framework to a localized context is required. The local context might focus more on some principles than others, and requires more clarity on how to meet the principles generally [21].

In landscapes where the capacity for implementing forest restoration is low, the intensive support of external agencies will likely be needed, at least initially. This intense need for resources might limit the focus area, creating an initial trade-off of quantity for quality. To make the most of these investments, multi-stakeholder governance platforms and learning networks must be encouraged, best practices should be promoted, and the institutional barriers to their application removed [27]. Opportunities may exist to partner with synergetic agendas using novel business models for a sustained effort. The process must also be guided by robust evidence, for which monitoring and reporting is essential. Because we are reporting on work from other people, there is a limitation related to what the primary author chose to document and share [52], and important factors related to successes or failures may have been omitted. We encourage the reporting of failures as well as successes to help plan future efforts. The case studies exhibited important features of the FLR process and provided a useful learning space, and demonstrate the potential and importance of learning from practice to guide future efforts.

Author Contributions: Conceptualization and methodology, all authors; formal analysis, L.O., J.H., R.L.C., and S.J.W.; writing—original draft preparation, L.O.; writing—review and editing, all authors; project administration, J.H. and N.G.; funding acquisition, J.H. and N.G. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Australian Centre for International Agricultural Research (ACIAR) through projects ASEM/2016/103 and FST/2016/153, and by the Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development of the Department of Science and Technology (DOST-PCAARRD). R.L.C. and S.W. also received funding from PARTNERS—People and Reforestation Network, supported by Grant DEB-1313788 from the U.S. National Science Foundation Coupled Human and Natural Systems Program. This Special Issue on ‘Forest and Landscape Restoration: Making It Happen’ is an outcome of the International Conference on Forest and Landscape Restoration, which had support from ACIAR, PCAARRD, the University of the Sunshine Coast (USC), and the Forest Foundation Philippines (FFP).

Acknowledgments: We acknowledge the authors of case studies and our collaborators from the Visayas State University who played a critical role in organizing the conference. We also acknowledge the support from the Energy Development Corporation (EDC) and the Asia Pacific Forestry Network (APFNet).

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

References

1. Brondizio, E.; Settele, J.; Díaz, S.; Ngo, H. *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*; IPBES Secretariat: Bonn, Germany, 2019.
2. Steffen, W.; Richardson, K.; Rockström, J.; Cornell, S.E.; Fetzer, I.; Bennett, E.M.; Biggs, R.; Carpenter, S.R.; de Vries, W.; de Wit, C.A.; et al. Planetary boundaries: Guiding human development on a changing planet. *Science* **2015**, *347*, 1259855. [[CrossRef](#)] [[PubMed](#)]
3. Rockström, J.; Steffen, W.; Noone, K.; Persson, Å.; Chapin, F.S.; Lambin, E.F.; Lenton, T.M.; Scheffer, M.; Folke, C.; Schellnhuber, H.J.; et al. A safe operating space for humanity. *Nature* **2009**, *461*, 472–475. [[CrossRef](#)] [[PubMed](#)]
4. Bastin, J.-F.; Finegold, Y.; Garcia, C.; Mollicone, D.; Rezende, M.; Routh, D.; Zohner, C.M.; Crowther, T.W. The global tree restoration potential. *Science* **2019**, *365*, 76–79. [[CrossRef](#)] [[PubMed](#)]
5. Griscom, B.W.; Adams, J.; Ellis, P.W.; Houghton, R.A.; Lomax, G.; Miteva, D.A.; Schlesinger, W.H.; Shoch, D.; Siikamäki, J.V.; Smith, P.; et al. Natural climate solutions. *Proc. Natl. Acad. Sci. USA* **2017**, *114*, 11645–11650. [[CrossRef](#)]
6. Chazdon, R.; Brancalion, P. Restoring forests as a means to many ends. *Science* **2019**, *365*, 24–25. [[CrossRef](#)]
7. Cohen-Shacham, E.; Walters, G.; Janzen, C.; Maginnis, S. *Nature-Based Solutions to Address Global Societal Challenges*; IUCN: Gland, Switzerland, 2016; Volume 97.
8. Chazdon, R.L. *Second Growth: The Promise of Tropical Forest Regeneration in An Age of Deforestation*; University of Chicago Press: Chicago, IL, USA, 2014.
9. Stanturf, J.A.; Kleine, M.; Mansourian, S.; Parrotta, J.; Madsen, P.; Kant, P.; Burns, J.; Bolte, A. Implementing forest landscape restoration under the Bonn Challenge: A systematic approach. *Ann. For. Sci.* **2019**, *76*, 50. [[CrossRef](#)]
10. Mansourian, S.; Parrotta, J.; Balaji, P.; Bellwood-Howard, I.; Bhasme, S.; Bixler, R.P.; Boedhihartono, A.K.; Carmenta, R.; Jedd, T.; de Jong, W. Putting the pieces together: Integration for forest landscape restoration implementation. *Land Degrad. Dev.* **2020**, *31*, 419–429. [[CrossRef](#)]
11. Kremen, C.; Merenlender, A.M. Landscapes that work for biodiversity and people. *Science* **2018**, *362*, 6412. [[CrossRef](#)]
12. Chazdon, R.L.; Guariguata, M.R. Natural regeneration as a tool for large-scale forest restoration in the tropics: Prospects and challenges. *Biotropica* **2016**, *48*, 716–730. [[CrossRef](#)]
13. Mukul, S.A.; Herbohn, J.; Firn, J. Co-benefits of biodiversity and carbon sequestration from regenerating secondary forests in the Philippine uplands: Implications for forest landscape restoration. *Biotropica* **2016**, *48*, 882–889. [[CrossRef](#)]
14. WWF; IUCN. Forests reborn: A workshop on forest restoration. In Proceedings of the WWF/IUCN International Workshop on Forest Restoration, Segovia, Spain, 3–5 July 2000.
15. Laestadius, L.; Buckingham, K.; Maginnis, S.; Saint-Laurent, C. Before Bonn and beyond: The history and future of forest landscape restoration. *Unasylva* **2015**, *66*, 11.

16. Besseau, P.; Graham, S.; Christophersen, T. *Restoring Forests and Landscapes: The Key to A Sustainable Future*; Global Partnership on Forest and Landscape Restoration: Vienna, Austria, 2018.
17. Brancalion, P.H.S.; Chazdon, R.L. Beyond hectares: Four principles to guide reforestation in the context of tropical forest and landscape restoration. *Restor. Ecol.* **2017**, *25*, 491–496. [[CrossRef](#)]
18. Maginnis, S.; Jackson, W. What is FLR and how does it differ from current approaches? In *The Forest Landscape Restoration Handbook*; Reitbergen-McCracken, J., Maginnis, S., Sarre, A., Eds.; Earthscan: London, UK, 2012; pp. 5–20.
19. Lamb, D.; Stanturf, J.; Madsen, P. What Is Forest Landscape Restoration? In *Forest Landscape Restoration: Integrating Natural and Social Sciences*; Stanturf, J., Lamb, D., Madsen, P., Eds.; Springer: Dordrecht, The Netherlands, 2012; pp. 3–23. [[CrossRef](#)]
20. Sabogal, C.; Besacier, C.; McGuire, D. Forest and landscape restoration: Concepts, approaches and challenges for implementation. *Unasylva* **2015**, *66*, 3.
21. Sayer, J.; Sunderland, T.; Ghazoul, J.; Pfund, J.-L.; Sheil, D.; Meijaard, E.; Venter, M.; Boedhihartono, A.K.; Day, M.; Garcia, C.; et al. Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proc. Natl. Acad. Sci. USA* **2013**, *110*, 8349–8356. [[CrossRef](#)] [[PubMed](#)]
22. Chazdon, R.L.; Laestadius, L. Forest and landscape restoration: Toward a shared vision and vocabulary. *Am. J. Bot.* **2016**, *103*, 1869–1871. [[CrossRef](#)] [[PubMed](#)]
23. UN Environment. *New UN Decade on Ecosystem Restoration Offers Unparalleled Opportunity for Job Creation, Food Security and Addressing Climate Change*; United Nations Environmental Program: Nairobi, Kenya, 2019.
24. Sayer, J.; Boedhihartono, A.K. Integrated landscape approaches to forest restoration. In *Forest Landscape Restoration: Integrated Approaches to Support Effective Implementation*; Mansourian, S., Parrotta, J., Eds.; Routledge: London, UK, 2018; pp. 83–99.
25. Reed, J.; Van Vianen, J.; Deakin, E.L.; Barlow, J.; Sunderland, T. Integrated landscape approaches to managing social and environmental issues in the tropics: Learning from the past to guide the future. *Glob. Chang. Biol.* **2016**, *22*, 2540–2554. [[CrossRef](#)]
26. Chazdon, R.L.; Gutierrez, V.; Brancalion, P.; Laestadius, L.; Guariguata, M.R. Co-creating Conceptual and Working Frameworks for Implementating Forest and Landscape Restoration Based on Core Principles. *Forests* **2020**, *11*, 706. [[CrossRef](#)]
27. Chazdon, R.; Herbohn, J.; Mukul, S.; Gregorio, N.; Ota, L.; Harrison, R.; Durst, P.; Chaves, R.; Pasa, A.; Hallett, J.; et al. Manila Declaration on Forest and Landscape Restoration: Making it happen. *Forests* **2020**, *11*, 685. [[CrossRef](#)]
28. Elliott, S.; Chairuangsi, S.; Kuaraksa, C.; Sangkum, S.; Sinhaseni, K.; Shannon, D.; Nippanon, P.; Manohan, B. Collaboration and Conflict—Developing Forest Restoration Techniques for Northern Thailand’s Upper Watersheds Whilst Meeting the Needs of Science and Communities. *Forests* **2019**, *10*, 732. [[CrossRef](#)]
29. Gregorio, N.; Herbohn, J.; Tripoli, R.; Pasa, A. A Local Initiative to Achieve Global Forest and Landscape Restoration Challenge—Lessons Learned from a Community-Based Forest Restoration Project in Biliran Province, Philippines. *Forests* **2020**, *11*, 475. [[CrossRef](#)]
30. Rodríguez, J.C.; Sabogal, C. Restoring Degraded Forest Land with Native Tree Species: The Experience of “Bosques Amazónicos” in Ucayali, Peru. *Forests* **2019**, *10*, 851. [[CrossRef](#)]
31. Viani, R.A.G.; Bracale, H.; Taffarello, D. Lessons Learned from the Water Producer Project in the Atlantic Forest, Brazil. *Forests* **2019**, *10*, 1031. [[CrossRef](#)]
32. Weldeemaet, Y.T. Economic contribution of communal land restoration to food security in Ethiopia: Can institutionalization help? In *Enhancing Food Security through Forest Landscape Restoration: Lessons from Burkina Faso, Brazil, Guatemala, Viet Nam, Ghana, Ethiopia and the Philippines*; Kumar, C., Begeladze, S., Calmon, M., Saint-Laurent, C., Eds.; IUCN: Gland, Switzerland, 2015; pp. 144–173.
33. Gregorio, N.O.; Herbohn, J.L.; Harrison, S.R.; Pasa, A.; Fernandez, J.; Tripoli, R.; Polinar, B. Evidence-based best practice community-based forest restoration in Biliran: Integrating food security and livelihood improvements into watershed rehabilitation in the Philippines. In *Enhancing Food Security through Forest Landscape Restoration: Lessons from Burkina Faso, Brazil, Guatemala, Viet Nam, Ghana, Ethiopia and Philippines*; Kumar, C., Begeladze, S., Calmon, M., Saint-Laurent, C., Eds.; IUCN: Gland, Switzerland, 2015; pp. 177–217.
34. Cuc, N. Mangrove forest restoration in northern Viet Nam. In *Enhancing Food Security through Forest Landscape Restoration: Lessons from Burkina Faso, Brazil, Guatemala, Viet Nam, Ghana, Ethiopia and Philippines*; Kumar, C., Begeladze, S., Calmon, M., Saint-Laurent, C., Eds.; IUCN: Gland, Switzerland, 2015; pp. 106–121.

35. Chazdon, R.L.; Wilson, S.J.; Brondizio, E.; Guariguata, M.R.; Herbohn, J. Key challenges for governing forest and landscape restoration across different contexts. *Land Use Policy* **2020**, 104854, in press. [\[CrossRef\]](#)
36. Mansourian, S. Governance and forest landscape restoration: A framework to support decision-making. *J. Nat. Conserv.* **2017**, *37*, 21–30. [\[CrossRef\]](#)
37. Maginnis, S.; Rietbergen-McCracken, J.; Sarre, A. *The Forest Landscape Restoration Handbook*; Routledge: London, UK, 2012.
38. FAO. *Sustainable Forest Management (SFM) Toolbox*; FAO: Rome, Italy, 2020.
39. ITTO. *Guidelines for Forest Landscape Restoration in the Tropics*; ITTO Policy Development Series; ITTO: Yokohama, Japan, 2020; Volume 23.
40. Van Oosten, C. Restoring Landscapes—Governing Place: A Learning Approach to Forest Landscape Restoration. *J. Sustain. For.* **2013**, *32*, 659–676.
41. Farina, A. The cultural landscape as a model for the integration of ecology and economics. *BioScience* **2000**, *50*, 313–321. [\[CrossRef\]](#)
42. Agarwal, B. Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and a Conceptual Framework. *World Dev.* **2001**, *29*, 1623–1648. [\[CrossRef\]](#)
43. Baynes, J.; Herbohn, J.; Smith, C.; Fisher, R.; Bray, D. Key factors which influence the success of community forestry in developing countries. *Glob. Environ. Chang.* **2015**, *35*, 226–238. [\[CrossRef\]](#)
44. Chazdon, R.L.; Wilson, S.J.; Brondizio, E.; Guariguata, M.R.; Herbohn, J. Governance challenges for planning and implementing Forest and Landscape Restoration. *Land Use Policy* **2020**, in press.
45. Léopold, M.; Beckensteiner, J.; Kaltavara, J.; Raubani, J.; Caillon, S. Community-based management of near-shore fisheries in Vanuatu: What works? *Mar. Policy* **2013**, *42*, 167–176. [\[CrossRef\]](#)
46. Damastuti, E.; de Groot, R. Effectiveness of community-based mangrove management for sustainable resource use and livelihood support: A case study of four villages in Central Java, Indonesia. *Environ. Manag.* **2017**, *203*, 510–521. [\[CrossRef\]](#) [\[PubMed\]](#)
47. Nel, E.; Binns, T. Rural self-reliance strategies in South Africa: Community initiatives and external support in the former black homelands. *J. Rural Stud.* **2000**, *16*, 367–377. [\[CrossRef\]](#)
48. Pokorny, B.; Johnson, J. *Community Forestry in the Amazon: The Unsolved Challenge of Forests and the Poor*; ODI: London, UK, 2008.
49. Thapa, G.B. Changing Approaches to Mountain Watersheds Management in Mainland South and Southeast Asia. *J. Environ. Manag.* **2001**, *27*, 667–679. [\[CrossRef\]](#)
50. Wilson, S.J.; Coomes, O.T. ‘Crisis restoration’ in post-frontier tropical environments: Replanting cloud forests in the Ecuadorian Andes. *J. Rural Stud.* **2019**, *67*, 152–165. [\[CrossRef\]](#)
51. Zhuang, H.; Lassoie, J.P.; Wolf, S.A. Ecotourism development in China: Prospects for expanded roles for non-governmental organisations. *J. Ecotourism* **2011**, *10*, 46–63. [\[CrossRef\]](#)
52. Catalano, A.S.; Lyons-White, J.; Mills, M.M.; Knight, A.T. Learning from published project failures in conservation. *Biol. Conserv.* **2019**, *238*, 108223. [\[CrossRef\]](#)
53. Buckingham, K.; Ray, S.; Granizo, C.G.; Toh, L.; Stolle, F.; Zoveda, F.; Reyta, K.; Zamora, R.; Ndunda, P.; Landsberg, F.; et al. *The Road to Restoration: A Guide to Identifying Priorities and Indicators for Monitoring Forest and Landscape Restoration*, 1st ed.; WRI: Washington, DC, USA, 2019.
54. Morecroft, M.D.; Duffield, S.; Harley, M.; Pearce-Higgins, J.W.; Stevens, N.; Watts, O.; Whitaker, J. Measuring the success of climate change adaptation and mitigation in terrestrial ecosystems. *Science* **2019**, *366*, eaaw9256. [\[CrossRef\]](#)
55. Langston, J.D.; Riggs, R.A.; Kastanya, A.; Sayer, J.; Margules, C.; Boedhihartono, A.K. Science Embedded in Local Forest Landscape Management Improves Benefit Flows to Society. *Front. Forests Glob. Chang.* **2019**, *2*, 3. [\[CrossRef\]](#)
56. Van Oosten, C.; Runhaar, H.; Arts, B. Capable to govern landscape restoration? Exploring landscape governance capabilities, based on literature and stakeholder perceptions. *Land Use Policy* **2019**, 104020, in press. [\[CrossRef\]](#)
57. Duraiappah, A.K.; Asah, S.T.; Brondizio, E.S.; Kosoy, N.; O’Farrell, P.J.; Prieur-Richard, A.-H.; Subramanian, S.M.; Takeuchi, K. Managing the mismatches to provide ecosystem services for human well-being: A conceptual framework for understanding the New Commons. *Curr. Opin. Environ. Sustain.* **2014**, *7*, 94–100. [\[CrossRef\]](#)

58. Sharma, B.P.; Lawry, S.; Paudel, N.S.; McLain, R.; Adhikary, A.; Banjade, M.R. Operationalizing a Framework for Assessing the Enabling Environment for Community Forest Enterprises: A Case Study from Nepal. *Small-Scale For.* **2020**, *19*, 83–106. [[CrossRef](#)]
59. Wunder, S.; Noack, F.; Angelsen, A. Climate, crops, and forests: A pan-tropical analysis of household income generation. *Environ. Dev. Econ.* **2018**, *23*, 279–297. [[CrossRef](#)]
60. Mukul, S.A.; Huq, S.; Herbohn, J.; Nishat, A.; Rahman, A.A.; Amin, R.; Ahmed, F.U. Rohingya refugees and the environment. *Science* **2019**, *364*, 138. [[PubMed](#)]
61. Tallis, H.; Huang, C.; Herbohn, J.L.; Holl, K.; Mukul, S.A.; Morshed, K. *Steps Toward Forest Landscape Restoration in the Context of the Rohingya Influx: Creating Opportunities to Advance Environment, Humanitarian and Development Progress in Bangladesh*; CGD Policy Paper; Center for Global Development: Washington, DC, USA, 2019.
62. Forest Management Bureau. *Forest and Landscape Restoration Approach: Modified National Greening Program*; Quezon City, Philippines, 2020; Unpublished.
63. Duguma, L.A.; Nzyoka, J.; Okia, C.A.; Watson, C.A.; Ariani, C. *Restocking Woody Biomass to Reduce Social and Environmental Pressures in Refugee-Hosting Landscapes: Perspectives from Northwest. Uganda*; World Agroforestry: Nairobi, Kenya, 2019; Volume 298.



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).