Chapter I
Introduction

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Forest cover is decreasing or very low in many tropical landscapes following decades of logging, fire and other human disturbances. At the same time, there are large and growing areas of degraded forest lands[1] that need to be rehabilitated to again provide forest goods and services and meet local livelihood needs. National, international, local and private agencies have invested in innumerable rehabilitation initiatives in the tropics. Some countries such as China and the Philippines started earlier than others. Some countries are winding up large programs and others are initiating them. The initiatives have differed in scale, objectives, costs, implementation strategies, and in how much they considered socio-economic and institutional aspects. Lots of money has been spent, but have these efforts actually increased forest cover, helped impoverished upland communities, enhanced biodiversity and environmental services, or contributed to meeting timber needs? Did they address the underlying degradation causes and were the rehabilitated areas maintained in the long term? What are the most promising approaches? Which ones can be replicated at low cost by local institutions and actors? Which ones are self-sustaining at the local level? What enabling factors are required to sustain the efforts?

[1] By degraded forest lands, we mean formerly forested grasslands, brushlands, scrublands or barren areas.

This report reviewing forest rehabilitation in the Philippines is part of a larger study by the Center for International Forestry Research (CIFOR) and national partners to assess efforts across six countries to try and answer the above questions and derive lessons for planning and guiding future efforts. The countries are Peru, Brazil, Indonesia, Vietnam, China and the Philippines. The study aimed to increase the chances of success for future rehabilitation efforts by identifying the approaches that contributed to longer-term sustainability and positive outcomes for different stakeholders. The CIFOR team designed and used common methods to be able to compare approaches, outcomes and influencing factors across the study countries. But the methods were modified as necessary to fit the specific country contexts.

The Philippines, like many other Asian countries, lost its forest cover rapidly through heavy logging, upland migration and agricultural expansion over the last century (Chapter II). Up to 59 percent (9.3 million ha) of the country's official forest lands could be non-forested at present, with grass or shrub cover, or under cultivation. Large populations depend on the upland forests and forest lands for their livelihoods. The country faces timber shortages and relies on imports to meet a large proportion of its demand. Heavy flooding and landslides occurring almost annually are often attributed to deforestation and fuel calls for halting logging and rehabilitating degraded forest lands. Given the current state of the Philippines' forest lands and the demands placed on it, rehabilitation will continue to remain

Open landscape in the KALIWA watershed project site. (Environmental Forestry Programme, CFNR, UPLB)

high on the agenda. Forest rehabilitation is one of the major programmes in the 'General Program of Actions for the Forestry Sector from 2005-2010', recently drafted by the Department of Environment and Natural Resources (DENR).

Rehabilitation efforts in the Philippines started very early, almost a century ago, and have gone through many phases. The efforts were meant to restore forest cover, provide environmental services, supply timber, and more recently contribute to local livelihoods. Many different institutional and technical approaches were used. Meanwhile, their outcomes and impacts on the environment and local livelihoods remain unclear. The common perception is that the efforts were largely a failure, with little to show on the ground and logging and livelihood pressures continuing to degrade remaining forests and forest lands.

This report presents the results of the Philippines study which had three components:

a) A national-level review of forest rehabilitation using the literature and inventory data.
b) Detailed characterisation and analysis of 46 sample projects, their outcomes and influencing factors in three selected regions using technical, ecological, socio-economic, financial and other parameters.
c) Consultative workshops in the three focal regions to understand the perspectives of key actors involved in rehabilitation projects.

The main objective of the study and this volume is to enhance the success and sustainability of forest rehabilitation efforts in the Philippines, with enhanced production of forest goods and services and positive outcomes for local communities by:

- Assessing the characteristics and outcomes of past rehabilitation efforts
- Identifying and disseminating the most promising approaches that could sustainably supply the targeted goods and environmental services, while benefiting local communities, and
- Determining the enabling factors and actions different stakeholders must undertake to move forward.

The nation's long rehabilitation history and its evolution in response to changing national and international conditions and ideologies, the sheer number of initiatives, the diversity in project size and methods, and the wide range of biophysical and socio-economic settings, present opportunities for learning many useful lessons to guide and sustain future efforts and ensure positive outcomes. Likewise the range of experience in the Philippines will provide useful lessons for other tropical countries as well. Underlying concerns and motivations driving rehabilitation efforts are often similar across nations.

1. Terminology and scope of the review

Numerous concepts have been used in the literature to refer to regrowing trees on formerly forested lands: rehabilitation, restoration, reclamation, reforestation and afforestation. Scientists, policy makers, practitioners and the public media tend to use these terms loosely and interchangeably. However, different authors define the terms relatively consistently based on the objectives, approaches used and the type of land targeted (*www.cifor.cgiar.org/rehab/_ref/glossary*). Accordingly:

- Reclamation aims to enhance productivity and little of the original biodiversity. Exotic species are commonly used.
- Restoration tries to recreate the original forest diversity, structure and function.
- Rehabilitation attempts to return the forest to a stable and productive condition, but not necessarily the original diversity, structure and function. It could include native and exotic species. The protective function and many of the ecological services of the original forest may be re-established.
- Afforestation refers to establishing a forest on land without forest cover in the recent past. Some authors suggest that afforestation includes only artificial means while others include planting, seeding and assisted natural regeneration.
- Reforestation refers to establishing a forest on recently deforested lands. Some authors qualify "recent" as < 10 years and others as < 50 years.

The generic term "rehabilitation" is used in the six-country study and in this volume to cover all activities designed to bring back trees on formerly-forested grasslands, brushlands, scrublands or barren areas for productive, livelihood and/or environmental purposes (*www.cifor.cgiar.org/rehab/_ref/study/index.htm*). It includes forest establishment via planting, seeding, assisted natural regeneration and agroforestry. In the Philippines the term "reforestation" covers all such activities and includes planting timber species, fruit trees, bamboo, rattan, and rubber, as well as agroforestry (trees plus agricultural crops) and assisted natural regeneration. Thus, the terms "rehabilitation" and "reforestation" are used interchangeably in this volume.

This study covers rehabilitation activities recorded with the DENR, which are mostly on public forest lands[2] but also include some registered planting on private lands. On public forest lands, rehabilitation is carried out in timberland[3], forest reservations designated for specific purposes and protected areas. This

[2] The term "forest land" refers to all property owned by the national government that is still in the public domain. It is a legal, not a botanical description. In reality, much "forest land" does not contain forests.
[3] Timberland refers to public forest lands zoned for timber production.

study focuses on rehabilitation in the uplands and plains, and not wetlands. The assessment covers various approaches, actors and objectives.

2. Presentation

Chapter II traces the history of forest rehabilitation in the Philippines over the last century, describing the actors, scale, costs, institutional arrangements, driving forces and outcomes as could be inferred from the secondary data and literature.

Chapter III uses empirical data from 46 rehabilitation initiatives across three study regions and six project implementer groups to assess site-level outcomes and the factors that led to positive or negative outcomes. It also identifies the most promising self-sustaining approaches and incentives that can deliver the required goods, services and livelihood benefits. The three study regions are Region III (Central Luzon), Region VII (Central Visayas) and Region XI (Davao), selected to represent the three larger areas in the Philippines (Luzon, Visayas, Mindanao). The six main project implementers were the DENR, other government agencies (OGA), local government units (LGU), non-governmental organisations (NGO), people's organisations (PO) or communities, and the private sector.

Chapter IV presents the stakeholders' perspectives on key rehabilitation constraints in the three focal regions, and their recommendations for overcoming them.

Chapter V concludes the volume by highlighting the main findings from the study and generating strategic and operational recommendations to policy makers, national and local government agencies, NGOs, POs and farmers' groups, the private sector, donors and research institutions for supporting, planning, implementing and sustaining forest rehabilitation in the Philippines.