



## **Project proposal**

### **“Review of forest rehabilitation initiatives - Lessons from the past”**

**Schedule:** May 2002-April 2004

**Funding source:** Official Development Assistance, Government of Japan

## **Background**

Intensive exploitation and related disturbances have depleted large areas of forests in the tropics in the last few decades and resulted in large and expanding areas of degraded forest ecosystems. There is now increasing concern over dwindling forest cover, forest products and environmental services. In the past two decades, numerous forest rehabilitation projects have been initiated over tropical Asia and Latin America in response to these concerns. China has a Grain for Green national program where small farmer families are provided grain and money to halt cultivation on steep lands. The Philippines has had reforestation efforts on *Imperata* grasslands funded by international aid agencies in various periods from the 1970s to the 1980s, and there has also been a deliberate move towards assisted natural regeneration (ANR) since 1995. In Nepal and India, rehabilitation efforts have been ongoing since the early 1980s involving community, social or joint forest management projects, and with the support of the state and international aid agencies and NGOs.

In Vietnam, there have been provincial-level rural mountain development projects supported by International Agencies with activities crosscutting degradation and rehabilitation. The government's program to regreen the barren hills in the early 1990s has now turned into the 5 million ha afforestation/reforestation program. In Indonesia, there is the recent government initiated “Five year forest and land rehabilitation program (RHL – 5 tahun) aimed at rehabilitation of 17 catchment areas. Substantial state funds have also become available since 2001 for reforestation at the provincial level.

Funding sources for these programs and projects range from national to international to private agencies. The projects have differed in scale, underlying objectives, key actors involved, approaches, and duration. They have also differed in their extent of consideration of socio-economic and institutional aspects essential for successful rehabilitation. For example, there may not be sufficient interaction between industry and local people to ensure there is a market for end products of rehabilitated forests. Projects range from government-driven watershed reforestation to community based forest management, private company plantations, integrated livelihood projects, and spontaneous private tree farming. Many new projects with substantial resource investments are in the offing throughout the region. Carbon credits for afforestation and reforestation projects under the Kyoto protocol may lead to further investments in the rehabilitation of degraded areas.

In the light of the increasing importance of the issue of degraded lands and their rehabilitation, it is critical to draw strategic lessons from past experiences and use them to plan and guide future efforts. Through this study, “Review of rehabilitation projects - Lessons from the past”, CIFOR in collaboration with national partners will synthesize, review, derive, and

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disseminate lessons from past and ongoing rehabilitation projects and research within selected regions of Indonesia, Vietnam, Philippines, China, Peru and Brazil. There will first be an inventory and characterisation of rehabilitation initiatives and their changing profile over time in each of the selected regions. This will be followed by a more detailed review of selected case studies on the ground looking at productivity, environmental and livelihood impacts as well as longer term sustainability and adoption. The aim is to increase the chances of success of future rehabilitation projects by identifying the approaches that have contributed to longer-term sustainability under different scenarios with minimal negative impacts on different stakeholders. Also planned in this study are the identification of underlying institutional constraints to sustainable rehabilitation and the key outputs required to address them.

This research will be highly applicable to countries across the Tropics since the underlying concerns and motivations driving rehabilitation efforts are often similar. The experience gained during an older rehabilitation scheme on one side of the world may be highly relevant to a similar scheme starting up on the other side. This is a timely opportunity to feed into the key policy processes related to forestry in many of the study countries. Indonesia right now intends to revamp its rehabilitation program. China has a number of national reforestation programs and is looking for ways and incentives to ensure longer-term sustainability. Brazil has a couple of big government-sponsored programmes that would benefit very much from the insights learned by the study.

This project will use and build on existing information and reviews already out there on degraded lands and rehabilitation efforts, and related policies. Gilmour *et al.* in 2002 provided a broad overview and assessment of forest rehabilitation policies and practices in the Mainland Southeast Asian region. Recent ITTO guidelines provide key global principles and recommended actions for the restoration, management and rehabilitation of degraded landscapes. There have also been numerous reviews of particular projects or programs by donor or government agencies focusing on aspects such as survival and growth rates, and more recently impacts on livelihoods. This study will attempt to further these efforts by synthesizing field and research information on the range of rehabilitation approaches and their driving forces and impacts, in order to identify the most promising approaches across a diversity of political, institutional and socio-economic conditions. This study will also attempt to interlink with other important initiatives into forest rehabilitation such as those led by WWF International, IUCN, ITTO, ICRAF, FAO, AKECOP and AFP.

## **Goal**

Increase the long-term sustainability of current and future rehabilitation efforts on formerly forested lands with minimal negative impacts on different stakeholders

## **Objectives**

1. Obtain strategic lessons on driving forces, impacts, and underlying constraints from past and ongoing rehabilitation initiatives and research
2. Identify and disseminate the most promising rehabilitation approaches under different ecological and socio-economic scenarios
3. Identify appropriate economic and institutional incentives under different conditions

## Scope of the review

This project will synthesise, review, and derive lessons from past and ongoing rehabilitation projects in parts of Western Indonesia, Vietnam, Philippines, southern China, Peru and Brazil. These countries/regions are chosen because of the large extent of degraded land present, and the current and increasing interest in and efforts to rehabilitate the same to provide useful products and services, enhance local livelihoods and environmental functions. CIFOR has past experience in these countries and regions, and ongoing projects that this rehabilitation review could link to.

The assessment will focus primarily on moist to seasonally dry tropical environments given CIFOR's existing research and familiarity with these areas. Land forms could include uplands and plains. The focus will be on rehabilitation activities undertaken on formerly forested lands with inhibited natural forest recovery, such as *Imperata* grasslands, scrub, and barren land. Bringing back forests on barren lands or scrub may be important in reducing pressure exerted on remaining forests.

The assessment will look at any rehabilitation methods that involve trees, including agroforestry, plantations and assisted natural regeneration. The assessment will also cover a diversity of ecological and socio-economic rehabilitation scenarios, scales, and objectives and work closely with a representative range of stakeholders. Participants in the study will include governments, forest research and development agencies, non-government organizations, local communities, industries and donors.

## Methodology

1. Identification of national research partners, key issues, and focal region within each country selected
2. Finalization of study design and methodology for data collection and analysis, including the structures of the project databases and questionnaires
3. Inventory and characterisation of past and ongoing rehabilitation initiatives and their changing profile in each of the selected regions. Data input into a general project database.

### Sources of information:

- National and local government offices, donors, NGOs, private companies/groups, people's organizations – Questionnaires, interviews
  - Project documents
  - General literature/reviews
4. Review of published and unpublished literature, project reviews and other documents, discussions with stakeholders and experts to pick up insights on the driving forces, underlying constraints and possible approaches to sustainable rehabilitation in the country
  5. Create GIS databases of biophysical, land use and other data for the selected provinces, if possible, for spatial assessment of restoration efforts and potential

6. Initial workshop/s with relevant provincial and national level stakeholders for
  - Shared understanding of study and motives
  - Validation of general project database and filling in gaps
  - Categorization of rehabilitation initiatives (based on selected criteria)
  - Selection of case studies within each category (based on certain key features)
  - Agreement on second level database elements and method of case study review
  - Looking for key outputs needed
7. Detailed reviews of selected cases on the ground looking at productivity, environmental and livelihood impacts as well as longer term sustainability and adoption, and the underlying reasons. Data input into a case study database.

Field work/data gathering

- Assessment of project-related documents/writings/reviews/research
  - Rapid measurements/appraisal of project sites to assess basic ecological/technical parameters
  - Surveys/interviews with key stakeholders addressing technical, ecological and socio-economic aspects related to the project, and
  - Review of relevant secondary data
8. In depth evaluation and comparative analyses of all factors, within and across projects, and based on the literature reviews
  9. Draw strategic lessons and identify promising approaches under different scenarios, develop recommendations and key considerations

**Some of the key elements that will be analysed**

1. The driving forces and process of development of rehabilitation initiatives
2. Decision-making processes and stakeholder involvement in rehabilitation
3. Distribution of benefits, costs, rights and responsibilities
4. Opportunities and constraints (ecological, socio-economic, institutional) to successful implementation, and viable interventions and incentives. Could include underlying causes of degradation, property rights regimes, market incentives, institutional support, and infrastructure among others.
5. Productivity, socio-economic and environmental impacts of the projects (e.g. could disadvantage poorer members of the community by restricting their access to that land), and viable mechanisms for avoidance/reduction of negative impacts to different stakeholders
6. Rehabilitation approaches and techniques (such as natural regeneration or plantation; species favoured; industrial, community or state driven) most likely to be sustainable under different ecological and socio-economic conditions
7. Long-term management, monitoring and sustainability of the project
8. Perceptions of success or failure and for whom

10. Prepare a final synthesis report for each country based on analysis of all of the above
11. Joint partner meeting for cross country comparison, writing of joint paper, identifying other useful outputs to overcome key constraints, and generating follow up activities and proposals including for preparation of practical guidelines
12. Final workshop for dissemination of results, getting feedback on synthesis, and discussing useful next steps and outputs
13. Preparation of “Lessons learned” publications for donors, policy makers, and the scientific community, in the form of policy briefs/information booklets and scientific articles
14. Active dissemination and promotion of results aiming for high impact via distribution of outputs to target audiences through seminars, workshops, news articles, website postings and networking activities.

### **Outputs**

1. Database of rehabilitation initiatives and their key features for selected regions of each country
2. Database of detailed outcomes of selected rehabilitation case studies
3. Syntheses report on the status of land degradation and nature of rehabilitation efforts in each country
4. Possible GIS databases indicating past restoration efforts and good potential
5. “Lessons learned” publications linked to a 1-2 page policy brief for donor and implementation agencies.
6. Action plan based on research findings
7. CD-Rom and Website postings of outputs. Impact-oriented information exchange and networking activities on rehabilitation.

### **Contact Persons (CIFOR)**

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## Project proposal

### “Review of forest rehabilitation initiatives - Lessons from the past”

#### Annex I: Scope of the study/review

Looking at “Forest Rehabilitation Initiatives” which we consider to be

*Deliberate activities<sup>1</sup> aimed at artificial and/or natural regeneration of trees<sup>2</sup> on formerly forested grasslands, brushlands, scrublands, or barren areas<sup>3</sup> for the purpose of enhancing productivity, livelihood, and/or environmental service benefits<sup>4</sup>.*

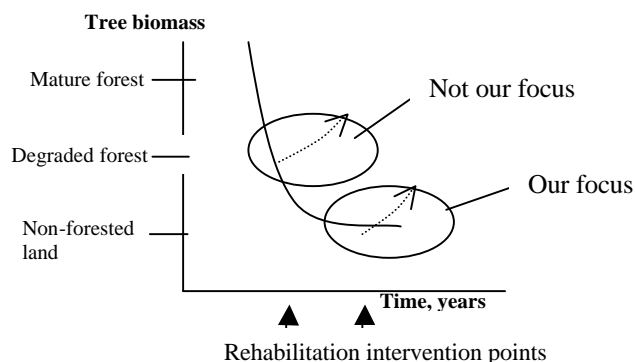
The focus of review would be initiatives that aim to actually establish trees on formerly forested land; and not be strictly technical trials of species or planting design, or assessments of success or impacts, or creation of manuals/ guidelines, or larger policy or institutional changes not directly related to a specific rehabilitation initiative. Integrated projects with forest rehabilitation components will also be included in this review.

<sup>1</sup>Deliberate activities could include

- Technical interventions: protection, planting, site management, silvicultural practices
- New or revised socio-economic arrangements: marketing, financial and economic incentives, infrastructure, access, education and awareness, authority and responsibility arrangements, distribution of costs and benefits, extension and capacity building
- New or revised institutional arrangements: land tenure, policies, rules and regulations, enforcement, institutions (customary/local and State level), monitoring

<sup>2</sup>Artificial and/or natural regeneration of trees - It will include any rehabilitation methods that involve trees – from agroforestry to plantations to assisted natural regeneration.

<sup>3</sup>Formerly forested grasslands, brushlands, scrublands, or barren areas – The focus will be restricted to initiatives that aim to put trees back on formerly forested lands, and not include the rehabilitation of degraded or secondary forest areas.



Modified from van Noordwijk *et al.* (2003)

Formerly forested lands include grasslands, brushlands, scrublands, or barren areas severely impacted by intensive and/or repeated disturbance with consequently inhibited or delayed forest regrowth. Questions on existing land cover and % tree cover could help clarify status of the site prior to the rehabilitation initiative. Intensive and/or repeated disturbances could include mining, overextraction of wood, repeated fires, overgrazing, intensive agriculture, failed plantations, invasive species, floods, drought, and combinations of the above. For the purpose of this review, rehabilitation of mined areas will be excluded.

<sup>4</sup>Purpose of enhancing productivity, livelihood, and/or environmental service benefits – Objectives could span the whole range from productivity to livelihood and/or environmental benefits for different stakeholders. Examples: Production of timber, fuelwood, pulp and paper, poles, charcoal, or NTFPs; agroforestry; biodiversity conservation; watershed functions; soil conservation; carbon sequestration; greening of bare land; or any combination.

Type of environments – Restricted to upland and lowland areas, and excluding wetlands.

Forestry sector involvement - Restrict to projects that **the forestry sector** has been involved in in terms of jurisdiction, planning, or management.

### **Reasons for such focus/ scope**

1. The concept as used here is an expansion from traditional views of forest rehabilitation or reforestation which focus primarily on the technical aspects. New or revised socio-economic and institutional interventions that bring about rehabilitation of formerly forested sites are also included. Often lack of such socio-economic and institutional interventions are the primary constraints to bringing back trees on such lands.
2. The focus is restricted to rehabilitation of grasslands, brushlands, scrublands, or barren areas because
  - Potentially different management interventions are called for in the rehabilitation of grasslands, brushlands, scrublands, or barren areas versus rehabilitation of degraded forest areas
  - Focusing on formerly forested lands will hopefully help to delimit the range of initiatives being considered to a logical identifiable threshold
  - Bringing back forests on grasslands, brushlands, scrublands, or barren areas could be important in helping to reduce degrading pressures on existing forests
3. Rehabilitation of mined areas will be excluded because tenure of mined lands is often very clear and rehabilitation constraints are usually primarily technical. A large body of knowledge already exists on technical methods to rehabilitate post-mined lands.
4. Wetlands will be excluded because of the need to constrain the review to a manageable size.
5. Restricted to projects that the forestry sector has been involved in for ease of gathering data. This does not necessarily imply projects on forest lands alone, since the forestry sector could have been involved in planning and managing restoration projects on agricultural and other lands as well.