

# Chapter V

## Conclusions and recommendations

Unna Chokkalingam<sup>1</sup>, Juan M. Pulhin<sup>2</sup>, Antonio P. Carandang<sup>3</sup> and Rodel D. Lasco<sup>4</sup>

<sup>1</sup> Center for International Forestry Research (CIFOR), P.O. Box 6596 JKPWB, Jakarta 10065, Indonesia

<sup>2</sup> College of Forestry and Natural Resources, University of the Philippines Los Baños, College, Laguna, Philippines

<sup>3</sup> Main Ave., Marymount Village, Anos, Los Baños, Laguna, Philippines

<sup>4</sup> World Agroforestry Centre, 2F CFNR, University of the Philippines Los Baños, College, Laguna, Philippines

The Philippines has invested a lot of money and effort to rehabilitate<sup>1</sup> its degraded forest lands over the last century. Coming back to our questions in Chapter I, 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?

**Forest cover** continued to decline at least until 1988 although 849,304 ha were planted (188,374 ha from 1910-74 and 660,930 ha from 1975-87). A high deforestation rate was ongoing simultaneously and little is known about long-term survival of the plantations. From 1988-2003, forest cover registered a significant 0.7 million ha increase, which government and other actors attribute to regrowth vegetation, plantations established through reforestation projects (936,542 ha planted from 1988-2002), and spontaneous tree growing by farmers and others on public and private lands.

---

<sup>1</sup> See Chapter I for details on rehabilitation terminology.

Forest cover increased on 28 project sites sampled in this study while planted areas were largely destroyed on 12 sites (Chapter III). The problems were mainly social, institutional and financial rather than technical. The 12 sites included most Forestry Sector Project I sites (FSP I funded through an ADB loan) and government reforestation sites with limited short-term or ad hoc funding and little local involvement and stake. These projects failed to address a key underlying cause of degradation: the livelihood needs of large upland communities with inequitable access to resources. Forestry Sector Project II (FSP II) and other participatory projects with local benefits did better, along with private sector initiatives that could maintain and protect the areas in the long term. However, the long-term sustainability of the rehabilitated areas under FSP II and other recent efforts is uncertain and depends on how production and reinvestment strategies fare in the future. The relative contribution of project-based versus spontaneous tree growing efforts to forest cover increase remains undetermined.

In many government and private sector reforestation sites, **local communities** were mainly provided short-term employment and income, and their claims over the land were not formally recognised through tenure rights. In early Department of Environment and Natural Resources (DENR) projects, local communities were even evicted in some cases. Communities were to derive long-term benefits from agroforestry, timber production and other livelihood schemes<sup>2</sup> in recent participatory projects implemented by peoples' organisations (POs), non-government organisations (NGOs), and some local government units (LGUs) and other government agencies (OGAs). However, on most sites, forest products were yet to mature and other livelihood schemes were yet to generate income. Communities and farmers would need long-term support from government and non-government agencies to effectively harvest and market the forest products and generate income from the rehabilitated areas.

Organised communities were able to obtain secure tenure through community-based forest management (CBFM) and other agreements as part of participatory reforestation projects. However, the granted land tenure can be easily revoked as demonstrated by the DENR in January 2006 when they cancelled all CBFM agreements in eight regions following reports of some logging violations. Not only is land tenure insecure, but also tenure over the resources on the land. The latter is affected by unclear harvesting policies for watersheds and other areas, frequent suspensions of harvesting rights in response to environmental and political crises, and bureaucratic requirements that make it difficult to obtain

---

<sup>2</sup> 'Livelihood schemes' refers to income-generating activities or projects for communities such as rattan gathering and processing, food processing, livestock raising, and setting up convenience stores. Sometimes farming and growing fruit trees are also considered livelihood activities.

resource use permits. There is no updated legislation that clarifies and secures community land and resource use rights despite communities being appointed as stewards of the nation's forest lands. The last legislation was the forestry code of 1975, when large concessions were the key players and there was little concern for community needs and rights.

However, many foreign-funded participatory projects have helped to organise, train and empower communities to effectively manage and benefit from their lands and resources, and seek outside financial support. Such community empowerment was brought to bear in early March 2006 when the PO federation successfully argued its case with the DENR secretary and persuaded him to annul the blanket cancellation of CBFM agreements in eight regions.

With the large exception of FSP I, the projects (including private sector and DENR projects) may have enhanced **biodiversity** through planting many tree species per site, including native species. Projects that specifically sought to enhance biodiversity also had natural regeneration in the understorey. Pests and disease were not a problem on most sites, thanks to the many species planted. Planting was done mostly on open lands and not by converting existing forests, thus leading to increases in tree or forest-related biodiversity on the project sites. However, at the landscape level, mahogany and *Gmelina arborea* may have become more dominant because they were commonly planted on most sites. Local observers suggest that faunal diversity increased on most sites.

Project managers, evaluators and local observers suggest that the projects have had neutral to positive effects on **soil and water properties**, including peak flood levels and landslide frequency. Opinions, however, tended to vary among and within stakeholder groups. Apart from a few studies that showed that hedgerows on farmlands reduced soil erosion and surface runoff and improved fertility in the Philippines, empirical evidence is scarce on how reforestation projects affect water and soil properties.

The rehabilitation projects have so far contributed little to meeting national **timber needs** and seem unlikely to do so in the near future. Except for the private sector, most project implementers have no clear marketing plans or strategies. The Government and civil society have failed to create an enabling environment for timber production and income generation through rehabilitating degraded forest lands, despite engaging the community and private sector to do so. Disincentives to forest plantation establishment include:

- High production costs and poor markets for plantation-grown timber and timber products, particularly in Region XI where natural forest timber is plentiful

- Lack of marketing support
- Harvesting policy conflicts
- Frequent logging suspensions, and
- Bureaucratic procedures.

Plantation-grown timber cannot compete against cheap imports and illegal natural forest timber. Where there was an enabling environment such as scarce resources and good demand in the local area, spontaneous tree growing had occurred on public and private lands.

Rehabilitation of the vast upland areas is **increasingly critical** to meet the nation's environmental, timber and socio-economic needs in the face of rising resource scarcity and environmental problems. About 5.5 million ha may need to be rehabilitated (see Chapter II). However, the Philippines appears to be moving backwards on achieving this goal. All sectors have reduced their rehabilitation efforts over the last decade due to political instability, lack of incentives and funding. Government agencies conduct sporadic reforestation activities based on available external funding and political interests. The private sector indicates interest in investing in rehabilitation but finds the incentives are inadequate. The communities depend on the forest lands for their livelihoods and could continue to rehabilitate and manage areas allocated through small grants or income generation and reinvestment. However, future income generation depends on the enabling policy framework.

The most **promising approach** at the moment is *enabling local communities and farmers* to rehabilitate and manage the forest lands and directly benefit from their efforts. This could be achieved with strong support from government and non-government agencies. This approach could address the underlying degradation causes (local livelihood pressures and inequitable access to resources) and lead to better livelihood options, community empowerment, long-term maintenance and productive use of the land for multiple benefits. Since DENR already declared CBFM as the national strategy for sustainably managing the forest lands, the Government should focus on providing three main enabling factors for success: stable supportive policies; secure resource rights; and marketing and other support. *Private sector efforts* could pay off too if they engaged better with the communities and also had a more enabling policy environment and marketing support. The Paper Industries Corporation of the Philippines' (PICOP) tree planting partnerships with farmers in the 1970s is a good example of what partnerships can potentially provide. Issuing *short-term reforestation contracts* to different actors as under FSP I is an inferior model that failed on many fronts: low tree survival, inadequate socio-economic benefits and uncertain timber production.

Most forest lands under government administration without community or private tenure agreements have no effective and operational long-term plans and maintenance, and depend on ad hoc funding. Many direct *government-implemented reforestation* efforts failed to provide for long-term local livelihood needs, address the underlying degradation causes, maintain the rehabilitated areas or produce timber. The government agencies and NGOs are better off providing a support function while communities, farmers and the private sector rehabilitate and manage the forest lands for timber and other commercial and household benefits. The *government and non-government agencies* could be more directly involved in rehabilitating conservation areas for biodiversity and other environmental services, but they still need to design the projects better to actually meet these objectives and also involve and benefit local communities for long-term sustainability.

Many foreign-funded projects supporting farmer and community efforts such as FSP II came at a high **economic cost**. They cannot be replicated at the local level and big loans lead to much indebtedness, particularly in the absence of operational-cost recovery and reinvestment mechanisms once the projects end. Similar sorts of projects with local community participation and benefits and strong technical assistance have been attempted with some success by certain LGU, OGA and foreign grant-supported local projects at lower costs ( $\leq 10,000$  pesos per ha). These projects may not have undertaken intensive community organising activities as under FSP II, yet they appear promising. This suggests that participation, technical assistance and deriving local benefits are particularly critical for success.

Dependence on high-cost donor projects, huge loans and ad hoc public funding from the Government does not favour **long-term sustainability**. Huge public investments and grants are not as valued as local personal investments and they also lead to graft and corruption. If there is an enabling environment, a little investment is often sufficient or even private investment will be undertaken as long as stable income can be generated from the activities. This is also amply demonstrated by spontaneous tree-growing activities undertaken when there is local demand for forest products and people adopt successful examples from neighbouring farmers and communities. Local communities and farmers may need modest financial support from LGUs and DENR or even foreign donors for the initial rehabilitation, after which the efforts could be self-sustained through production, income generation and reinvestment. Taxes generated from income earned could be used by LGUs for further investments.

## **Key recommendations**

Below we present specific strategic and operational recommendations for policy makers, national and local government agencies, NGOs, POs and farmers' groups, the private sector, donors and research institutions to support, plan, implement and sustain forest rehabilitation in the Philippines.

### ***Policy makers and legislators***

1. Provide a stable and long-term enabling environment for sustainable forest rehabilitation and management by endorsing an updated legislation that recognises and secures tenure holders' rights and responsibilities and harvesting policies for different areas. The legislation should be drafted through a well-facilitated public consultation process involving all stakeholders and using the latest scientific information.
2. In view of the livelihood needs of large upland populations, acknowledge and involve communities as partners in forest rehabilitation and management and incorporate community participation into the legislation.
3. Define the roles of various actors in forest rehabilitation and incorporate those roles into the legislation. Entrust commercial forest rehabilitation and management to communities, farmers and the private sector, with the government agencies and NGOs playing a long-term supportive role. Government agencies and NGOs could focus on rehabilitation and management of conservation areas for environmental services and biodiversity but even here they should involve and benefit communities for long-term sustainability.
4. Acknowledge the forests' production and income generation functions and incorporate these functions into the legislation. Provide adequate incentives to communities, farmers and the private sector for viable commercial production through rehabilitating degraded forest lands. Incentives could include credit facilities, tax and fee reductions, technical assistance, marketing support, longer-duration tenure, revised wood import regulations to better favour local tree growers, and incentives to forest industries to obtain timber from rehabilitated areas.
5. Develop clear and consistent legislated policies for timber harvesting and other resource use on lands with different legal status and tenure arrangements such as timberlands, watersheds, protected areas, industrial and socialised industrial forest management agreements (IFMA and SIFMA) and CBFM agreements. Simplify policies and bureaucratic requirements to avoid confusion, misinterpretation and abuse, and enable effective management and legal compliance.
6. Earmark an adequate annual budget for government agencies to support rehabilitation and management activities executed by local people and the

private sector, as well as for direct administration of conservation areas. Avoid accepting any more large forestry sector loans; they are unsustainable. Explore alternative finance mechanisms, for example the evolving Clean Development Mechanism.

7. Generate new jobs and income-generating options in the lowlands to avoid further mass migration to the uplands for economic reasons.

### ***DENR and other government agencies***

1. Avoid setting up own independent rehabilitation projects for production; these have little chance of success. Instead provide technical, marketing, management and financial support to POs, farmers and the private sector. Build their capacity and empower them to sustainably rehabilitate and manage the forest lands, derive benefits and generate or raise the necessary funds. Increase the number of local extension workers and ensure knowledge is properly transferred when DENR staff turn over, to provide continued support.
2. Allocate remaining open-access lands to local farmers, communities and the private sector, and provide secure tenure and income-generating options. Retain only priority conservation areas under direct government administration.
3. Improve road and transport systems<sup>3</sup>, and provide marketing support for products arising from the rehabilitated areas. Support the development of market associations, information systems and other marketing support tools.
4. Support and encourage private sector-community partnerships such as outgrower schemes or joint management with profit-sharing.
5. Design appropriate rehabilitation projects for biodiversity and watershed conservation in protected areas and reservations, such as developing complex forests of mixed species and strata for biodiversity conservation. Engage communities in managing these areas as well through participatory processes and allow communities to benefit from fruits, other non-timber forest products (NTFPs) and livelihood schemes, if not from timber. Set up long-term management plans and provide staff and financial resources to administer these areas.
6. Develop quality planting material of different species and establish regional seed centres and nurseries with support from academic and research institutes.
7. Monitor and evaluate the physical, environmental and socio-economic outcomes of rehabilitation in collaboration with academic and research institutions to ensure that the initiatives meet their objectives, reduce undesirable impacts and enable adaptive management.

---

<sup>3</sup> Note that improving roads and transport systems can be counter-productive to forest protection because it increases access for outsiders. Thereby clear land ownership and protection measures should be simultaneously ensured.

8. Assess changes in forest cover resulting from rehabilitation efforts and spontaneous tree growing activities using remote sensing and geographic information systems (GIS). Develop an up-to-date database of rehabilitation initiatives and a user-friendly management information system to facilitate science-based management decisions and keep track of rehabilitation progress.
9. Strengthen forestry law enforcement. Penalise only individual violators and those who patronize the illegal activities, not all actors. Acknowledge those who fulfil their responsibilities and abide by the rules.
10. Cross-link and integrate forest rehabilitation with other sectoral concerns within DENR and outside DENR. Integrate forest rehabilitation efforts into the land use and development plans of LGUs to ensure sustainability after formal project support ends.
11. Given limited resources and the need for income generation to be successful, prioritise rehabilitation activities in forest-poor areas with high demand for forest-related products such as Region VII where the chances of success are higher. Region XI, with its large natural forest area, should focus more on plantation products that have stable market demand such as *Paraserianthes falcataria*, rubber and fruit trees. Develop criteria for prioritisation based on the total potential benefits to be derived from rehabilitating different areas.

### **NGOs**

1. Avoid setting up own independent rehabilitation projects with a pure conservation goal; these have little chance of success. Instead, provide technical, marketing, management and financial support to POs and farmers, and help them develop viable livelihood schemes. Build their capacity and empower them to sustainably rehabilitate and manage the forest lands, derive benefits and generate or raise the necessary funds. Strengthen community associations to be able to negotiate successfully and safeguard community interests in the face of disruptive policy changes and other events.
2. Help design, implement, monitor and evaluate rehabilitation projects for biodiversity and livelihood benefits.
3. Acknowledge and support the forests' production and income generation functions to succeed in and sustain any rehabilitation efforts. Production is required to meet industrial and household demand, and generate income for impoverished upland communities and funds for managing the area. Not all logging is destructive and forests can be sustainably managed for various goods and services. Logging violations by some should not lead to pressures for total logging bans, harming the well-intentioned actors as well.
4. Recognise that forests can affect peak river flows and floods on a small-scale, but their effects on major flood and landslide events over a large basin are relatively small. Political lobbying to curb all logging because of perceived links



between forests and major floods could end up destroying local livelihoods and incentives for tree growing along with related environmental benefits.

5. Lobby for community/farmer upland rehabilitation and management for multiple benefits. This is the only model that has a high chance of succeeding in the populated uplands, while providing access to resources and income to poor local communities.

### **LGUs**

1. Avoid own independent projects and instead support community/farmer upland rehabilitation and management for multiple benefits in areas without timber harvesting restrictions. In areas with timber harvesting restrictions such as watersheds, ensure a high degree of local participation and benefits from NTFPs and other livelihood schemes.
2. Support self-sustaining and low-cost initiatives at the local level that generate revenue while providing environmental services and supporting local livelihoods.
3. Create “Environment and Natural Resources Officers (ENROs)” in LGUs as a focal point to provide continuing support to projects despite changes in local politicians and turnover in administration.
4. Improve roads and transport<sup>4</sup>, and provide marketing support for products from rehabilitated areas.
5. Integrate forest rehabilitation efforts into LGU’s land use and development plans to ensure sustainability after formal project support ends.

### ***POs and farmer groups (with support from other agencies)***

1. Match species to sites, use appropriate silvicultural techniques, and use mixed species to reduce pest and market risks. Incorporate fruits and other NTFPs to get shorter-term income and reduce market risks.
2. Promote collective action, learning and information exchange among community members and other stakeholders in the area to build local capacity to rehabilitate and sustainably manage the areas.
3. Generate income through sale of forest products or other livelihood schemes, and reinvest in the area to make it self-sustaining.
4. Explore the markets, develop marketing strategies and plant marketable species. Develop marketing associations and community-based market information systems. Add value to products.
5. Explore private sector-community partnerships in the production and marketing of timber.

---

<sup>4</sup> See footnote 2

6. Avoid abusive practices and violations of the law that will backfire later in the form of policy constraints that affect the entire sector.
7. Strengthen community organisations and network with other communities and agencies to be able to negotiate successfully and safeguard community interests.

### ***Private sector***

1. Match species to sites, use appropriate silvicultural techniques, and use mixed species to reduce pest and market risks.
2. Develop marketing strategies and plant marketable species. Develop marketing associations and market information systems. Add value to products and explore certification for higher value.
3. Develop partnerships and share responsibilities and benefits with local communities to avoid failure and fulfil social responsibilities.
4. Avoid abusive practices and violations of the law that will backfire later in the form of policy constraints that affect the entire sector.

### ***Donors and development agencies***

1. Support participatory rehabilitation projects benefiting communities or farmers that can be replicated locally at little cost and are self-sustaining. Bear in mind that past high-cost projects have not been sustainable or replicable.
2. Have longer project durations for sustained impact. Help to develop local institutions for long-term management after the project ends and ensure continued financial sustainability through income generation and reinvestment.
3. Design the projects to meet specific objectives such as improving livelihoods or water quality, and consider all relevant technical and socio-economic issues.
4. Support the development of market information systems and other marketing support tools.
5. Include participatory action research and technical evaluation of environmental and socio-economic impacts in the project design and implementation.
6. Support participatory action research and empirical research assessing the environmental and socio-economic impacts of forest rehabilitation (project-based and spontaneous).
7. Support policy reform processes related to forest rehabilitation such as the pending Sustainable Forest Management legislation.

### ***Academic and research institutes***

1. Provide training to government agencies (LGUs and DENR field staff), NGOs, POs and the private sector engaged in rehabilitation on species-site matching, silvicultural techniques, participatory methods, sustainable management, production, marketing, organisation and finance. Also provide training

on rehabilitation project design for specific objectives such as biodiversity conservation or arresting soil erosion.

2. Incorporate the whole range of rehabilitation issues into university curricula and turn out trained professionals who can provide technical assistance to project implementers and support agencies.
3. Perform participatory action research and technical evaluations of environmental and socio-economic impacts of rehabilitation (project-based and spontaneous) and disseminate the information widely.
4. Assess changes in forest cover as a result of rehabilitation efforts and spontaneous tree growing activities using remote sensing and GIS.
5. Perform policy research, provide empirical information and engage in discussions for policy reform.
6. Disseminate scientific findings and engage in a dialogue with NGOs and civil society to alter prevailing attitudes that all timber harvesting is negative. Timber harvesting can be a part and parcel of sustainable forest management which includes plantation establishment, maintenance, protection, harvesting, and income generation.