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Advancing assisted natural regeneration (ANR) in Asia and the Pacific

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Compiled and edited by

Patrick C. Dugan
Patrick B. Durst
David J. Ganz
Philip J. McKenzie

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ASSISTED NATURAL REGENERATION: AN OVERVIEW

David J. Ganz
Senior Natural Resource Management Consultant, ECORP, Oakland, California, USA
Patrick B. Durst
Senior Forestry Officer, FAO Regional Office for Asia and the Pacific, Bangkok, Thailand

Introduction

The basic philosophies of assisted natural regeneration (ANR) have been used on a limited scale to rehabilitate degraded forests and *Imperata* grasslands in the Philippines for more than 30 years. ANR is a simple, inexpensive and effective technique for converting *Imperata* areas to more productive forests. The key elements of ANR in the Philippines are quite basic: control fire, restrict grazing, suppress *Imperata* growth and involve local people. The benefits of ANR are equally fundamental. The cost of reforestation is far less than traditional plantation development. The technologies are simple and easy to implement. The resulting forest is highly diverse biologically and there are substantial benefits for local people.

Over the past several decades, scattered efforts have been made to develop and apply ANR approaches to forest restoration. Whilst knowledge in this area has grown considerably, it is now apparent that there are additional opportunities to diversify strategies and to expand restoration work. Given the low cost and numerous benefits from ANR, it would seem logical that ANR be accepted and applied broadly. Surprisingly, however, ANR techniques are still vastly under-appreciated and under-utilized in the region. This is in part due to the fact that few efforts have been made to promote ANR.

In an effort to overcome these constraints, increase awareness of the potential of ANR and promote the broader application of ANR, the Regional Office for Asia and the Pacific of the Food and Agriculture Organization of the United Nations and the Philippine's Department of Environment and Natural Resources (DENR), co-organized a workshop and study tour in the Philippines in April 2002. Additional support was provided by the International Plant Genetic Resources Institute (IPGRI), the Center for International Forestry Research (CIFOR), and the International Center for Research in Agroforestry (ICRAF). FAO enlisted the services of Bagong Pagasa Foundation (BPF), a Philippine non-governmental organization, to plan, coordinate and manage activities. Representatives from 11 Asia-Pacific countries met in the Philippines to discuss ANR, exchange information related to the application and implementation of ANR, and formulate recommendations for broader application of ANR in the rehabilitation of denuded and degraded lands.

It is in this context that this selection of papers has been compiled, to synthesize the current knowledge on ANR. This overview presents a short summary of the selected papers and some general themes emerging from the workshop.

Summary of general themes

Technical papers

Percy Sajise presents a thorough analysis of deforestation and its causes in the tropics of Asia. Sajise introduces a conceptual framework based upon the relationships between the technological, socio-cultural dimensions and natural resource base. Although ANR approaches should embody the ecological principles involved in the technological interventions, they must also be socially acceptable and institutionally supported. Sajise also provides a comprehensive look at the integral elements of an ANR approach from species selection to maintenance and protection.

Peter Walpole presents ten points which attempt to highlight the state of the art of ANR approaches. His paper describes some of the difficult questions facing ANR, including some definitional distinctions that need to be made before it progresses further. He states that the whole discourse on ANR could focus on traditional systems and knowledge. Furthermore, Walpole provides some insights into the challenges facing ANR development in the region. Some of these challenges include broad ranging impacts from competition with plantations, insecure tenure and extraction rights, over regulation of communities, poverty and marginalization.

Moises Butic and Robert Ngidlo describe the Ifugao muyong system, as an ANR strategy, within the context of traditional forest management. It is with the objective of linking indigenous approaches with learned forestry interventions that ANR can be used and diversified to meet both the micro and macro levels of integrated restoration work. Butic and Ngidlo suggest that the Ifugaos have shown that ANR can be used effectively to transform woodlots into multiple-use centers without disturbing the ecological functions of the natural forest.

The role of communities

Communities can play a significant role in ANR, especially in Southeast Asia where people are the primary cause of land-use change (clearing through the use of fire or otherwise). In many instances, the use of ANR approaches is inherent in the daily lives of people. Considered an integral part of ANR in the Philippines, communities have a significant role to play in prevention and suppression of fires that have a detrimental impact on their lives. There are many examples in the region of local communities taking action to protect forest resources, not just for their own benefit, but also for the benefit of broader society. Many of these cases exist in remote locations where government approaches are typically ineffective in protecting the forest resource. However, communities cannot do everything. It is not fair or feasible to expect communities to be responsible for large-scale forest restoration efforts. This task requires significant human resources which are externally organized, led and supported with equipment and supplies over long periods of time. Communities and their members can be an important, perhaps pivotal, component but should not shoulder the entire burden for promoting and implementing large-scale restoration efforts.

There are a number of practical steps which should be adopted to promote ANR within community-based natural resource management. Firstly, there are ample opportunities from which to learn, both within community forestry and from other associated disciplines. Secondly, there is a need for each interested country to experiment with new approaches of user-centered ANR technologies and to develop workable approaches compatible with local conditions. Elsewhere, policies will need to be adjusted to provide the needed support for ANR.

Further research

Continued research is required to guide rational and effective decision making for ANR formulation, implementation and evaluation at local, national, and regional levels. Sajise states that the "lack of knowledge of the ecological processes in plant succession makes it difficult to operationalize ANR". In general, an increased understanding of ecological interactions is necessary for more effective science-based management of forest ecosystems in Asia and the Pacific. To improve the local, national and regional capacity for studying ANR and understanding its role in forest ecosystem restoration, support is required for:

- investment in new and better scientific methods and in the development of regional scientific standards for studying ANR and restoration practices;
- improved understanding of plant succession in region and the integration of the autecology of the desired plant species into ANR approaches;

- increased understanding of the positive and negative impacts of restoration practices, as well as the interactions between desired plant species, fire, soil ecology, hydrology, geomorphology, atmospheric chemistry and other biophysical aspects; and
- better translation of scientific results into a format readily usable by policy-makers and the general public.

Social trends with potential impacts on ANR development

There are also widespread social trends, intrinsically linked to forestry and the environment, that have feedback effects on ANR development, notably:

- an increase in inequality, both among and within nations, in a region that is generally healthier and wealthier;
- a continuation, at least in the near future, of hunger and poverty despite the fact that the region produces adequate food and natural resources;
- greater human health risks resulting from continued resource degradation;
- an increase in international pressure to preserve biological diversity, which may or may not consider local needs and cultural/social dimensions of natural resource management; and
- an increase in short-term investment planning.

Country planning

In addition to the technical and country ANR perspectives provided by the workshop, a country planning exercise was conducted. During this process, participants explored options for promoting ANR, identified constraints and formulated the following recommendations to FAO and donor organizations:

- Fund pilot projects in each country to expedite the promotion of ANR, while concurrently creating venues for training and demonstration.
- Update documentation on ANR to facilitate cross-country exchange of information.
- Support research on the comparative costs and benefits of ANR versus conventional reforestation methods.
- Formulate, adopt and implement policies that prioritize ANR as a strategy for achieving forestland rehabilitation and biodiversity, focusing in particular on watershed catchments and *Imperata* grasslands.
- Support additional study tours, training and workshops to increase awareness of ANR methods and advantages among national decision makers, project design teams, international donors, the media, and government/non-government agencies implementing rural development and forestland rehabilitation projects.

Conclusion

Forest restoration can no longer be ignored as big challenge in forestry, natural resource management and development activities. The FAO supported workshop underscored the importance that people in the region are now giving to restoration efforts, particularly those associated with assisted natural regeneration. The connection between communities and restoration is often based on economic interests (livelihoods, commercial activities and impacts) and in the longer term, through public health (water quality and aesthetics).

ANR is very compatible with traditional systems of natural resource management. Therefore, a clear examination of community approaches to the management of native plant communities is necessary to promote ANR at higher levels. This could serve as the basis for clarifying objectives and concrete actions to restore native plant communities and ecosystems using

ANR approaches. It is essential that constructive partnerships be formed among NGOs, governments, the private sector and communities to design effective ANR approaches, which will have mutual long-term gains for all stakeholders.

The ANR workshop and study tour was an important step towards recognizing the role of ANR in forest restoration. It identified the steps needed for its further promotion in the region and the many ways in which communities can and have taken action in native plant management.