

# CONCLUDING REMARKS

**J. Koskela<sup>1</sup>**

*International Plant Genetic Resources Institute, Serdang, Malaysia*

**S. Appanah**

*Forestry Research Support Programme for Asia and the Pacific, Bangkok, Thailand*

**&**

**A. P. Pedersen**

*Danida Forest Seed Centre, Humlebaek, Denmark*

The country reports presented at this workshop provide valuable information on the state of conservation, management and use of forest genetic resources in Southeast Asia. In general, the countries of this region have recognized the importance of conserving forest genetic resources for future use. They differ widely, however, in their progress with strategic planning and practical implementation of conservation plans. To a large extent, this situation reflects varying research and development capacities within national forest sectors.

Southeast Asian countries also differ widely in terms of their forest resources. Forest cover in those countries represented at the workshop ranges from over 50% in Cambodia and Lao PDR to 19% in the Philippines (FAO 2001). A feature common to all, however, is that forestry plays an important economic role as a source of export earnings and employment opportunities. Another equally important feature is that forests and forest-based goods and services contribute significantly to the livelihood of millions of rural people in the region. Unfortunately, most Southeast Asian countries have exploited their forests at an unsustainable rate over the past few decades, and the remaining forests are under constant pressure to meet various human needs.

Several countries have launched large-scale tree planting programmes to tackle the problems caused by deforestation, and to enhance wood supply and other environmental benefits of forests. These programmes have created a strong demand for large quantities of high-quality seed and planting material. The lack of quality reproductive material for tree planting programmes is still a widespread problem. Planting often relies on non-native species from other Southeast Asian countries (teak and neem, for example), or from outside the region (eucalypts and acacias). Thus, even though a number of countries have taken steps to secure the domestic availability of reproductive material, there is still a strong need to exchange germplasm between countries and to obtain it from outside the region. At the same time as these reforestation activities, many countries have become involved in regional and international efforts towards sustainable forest management, and have started to develop or implement guidelines to improve the management of natural tropical forests. Rehabilitation and restoration of degraded forests with native species have received less attention than reforestation with commercial species, but in some countries, for example Thailand, encouraging efforts are being made to increase knowledge of native species for these purposes.

---

<sup>1</sup> IPGRI Regional Office for Asia, the Pacific and Oceania, PO Box 236, UPM Post Office Serdang, 43400 Selangor D.E., Malaysia, Tel: +60-3-8942 3891, Fax: +60-3-8948 7655, E-mail: j.koskela@cgiar.org.

Two approaches towards the conservation of forest genetic resources prevail in the region. The first emphasizes genetic conservation as a part of tree improvement programmes, i.e. *ex situ* conservation of important, mainly exotic, tree species in provenance trials and other conservation stands. The second approach emphasizes habitat or biodiversity conservation in natural parks and protected areas, where *in situ* conservation of native tree species may be only one of several management goals. Some tree improvement programmes have started with too narrow a genetic base, thus decreasing the value of their conservation efforts. In protected areas, however, conservation is based on the assumption that these areas host an adequate amount of forest genetic diversity, even if they have been established for purposes other than active *in situ* genetic conservation (which is usually the case).

Only rarely are *ex situ* and *in situ* conservation used in a complementary manner, as part of a holistic approach to conserving important species. Moreover, the few complementary efforts that do exist are seldom based on a well-documented knowledge of the genetic diversity of a given species within a country, much less an entire region. More studies are needed on the distribution of genetic diversity in important forest species, and how effective current *in situ* conservation efforts are at safeguarding this diversity. In some countries with relatively strong research sectors, more detailed information is available on the genetic diversity of some species. However, the extent to which this information is used in developing conservation strategies is unclear.

Many Southeast Asian countries have recognized the importance of involving local people in forest conservation. The country reports and the case studies by Isager *et al.* in these proceedings indicate that governments are using participatory approaches with some success to conserve forest genetic resources. Such encouraging examples notwithstanding, a need still exists to develop enabling environments for participatory processes. Such environments will include appropriate institutional and regulatory frameworks, secure land tenure regimes and various forms of capacity building. In general, policies for conserving forest genetic resources should be based on a recognition of stakeholder interests and rights. These socio-economic aspects make the development of such policies a more demanding task than the development of technical measures for gene conservation and use policies (Kanowski 2000). Indeed, the recognition that local people are part of the solution to the problems of forest use and conservation is welcome, but it is unlikely to make the overall task of conservation any easier (Enters 2000).

Most Southeast Asian countries are working to conserve and manage their forest genetic resources. National workshops are a good indicator of the current level of activity. Of the countries participating in this workshop, only Malaysia, Myanmar and the Philippines have yet to organize national workshops to discuss priority setting and conservation strategies. In some countries, these workshops have been organized as part of aid projects, notably the Danida-funded tree seed projects in Cambodia, Indonesia, Lao PDR, Vietnam and Thailand. Although in many countries policies for biodiversity conservation and forestry in general are well established, and their importance recognized, conservation programmes are often poorly funded. This lack of funds hinders the implementation of conservation policies and undermines the long-term sustainability of conservation efforts.

The main benefit of national workshops is that they bring together a wide range of stakeholders to discuss conservation priorities. Subsequently, they can also facilitate regional collaboration and activities (lists of national priority species etc.). However, despite the many reports of participatory workshops and priority-setting exercises, the actual process of priority setting remains unclear. This should be borne in mind when implementing the

recommendations of this workshop, and especially when using the list of regional priority species. For example, this list emphasizes trees more than other important forest species such as bamboos and rattans. This is because the term 'forest genetic resources' is commonly interpreted as 'tree genetic resources'. It should also be remembered that the workshop decided to focus on native species, and that the list of common priority species includes only species native to Southeast Asia. The importance of exotic species, however, was brought up several times during the workshop.

All of the participating countries have initiated national forest planning processes in the form of national forest programmes (see FAO 1999). These NFPs cover a range of different strategic frameworks, including national forestry action plans, forestry sector master plans, forestry sector reviews, national biodiversity strategies, national environmental action plans and national conservation strategies. Ideally, a national planning process should be a continuous effort, but the lack of funding in many Southeast Asian countries often means that it is conducted as a project-based activity.

It has been recommended that national plans for forestry, biodiversity and tree breeding should include conservation programmes for forest genetic resources (National Research Council 1991). FAO's Panel of Experts on Forest Genetic Resources has also stressed that national programmes of forest genetic resources conservation should make full use of existing national forest programmes (FAO 2000). A few Southeast Asian countries have incorporated conservation measures into their NFPs. The country reports in these proceedings, however, reveal that the linkages between NFPs and the conservation and use of forest genetic resources need further strengthening. The NFPs provide a necessary framework for developing and implementing national conservation programmes for forest genetic resources.

This regional workshop forms part of a global effort to enhance the conservation, management and use of forest genetic resources. Southeast Asian countries can learn from the earlier regional workshops for Sahelian and North-Sudanian Africa, held in Burkina Faso in 1998, and for the South Pacific Islands, held in Samoa in 1999. In these proceedings, Hald *et al.* summarize the outcomes of these meetings and highlight several points of relevance to efforts in this region. First, active national programmes in forest genetic resources, and genuine interaction among various stakeholders, are prerequisites for meaningful regional collaboration. They enable countries to compile and collect data, identify national priorities and establish mechanisms for developing and implementing national strategies. Second, the development and effective implementation of a regional action plan are only possible once national programmes, the building blocks of regional collaboration, have been put in place.

It is obvious from these proceedings that national programmes on forest genetic resources are not yet firmly established in Southeast Asia. There is some collaboration between national institutions, and several donor-supported projects are addressing aspects of forest genetic resources. In many countries, however, these efforts are informal in nature: national coordinating institutions have not been clearly identified and only limited funds have been committed.

One way to increase political commitment to conserving forest genetic resources is to demonstrate the potential economic benefits of such resources, for example through tree domestication. The first paper by Thomson *et al.* in these proceedings details successful cases of domestication from Southeast Asia and neighbouring regions. It illustrates how domesticating trees can accelerate the use and subsequent conservation of forest genetic resources. It is likely that many similar opportunities for domestication await us in the

species-rich forest ecosystems of Southeast Asia. Along with attempts to increase the use of forest genetic resources, the issues of sharing and exchanging germplasm have become more pertinent in Southeast Asia (see the second paper by Thomson *et al.* in these proceedings). Such issues underscore the need for greater regional collaboration, both to increase the efficiency of use and to solve potential problems within the frameworks set by relevant international agreements.

The workshop also discussed networking as a tool to enhance and coordinate regional collaborative efforts to conserve and use forest genetic resources. Through networking, it is possible to avoid duplicating research efforts and exploit synergies between collaborating institutions and other stakeholders. Networking promotes partnerships and more efficient use of limited resources. Regional networking can also enhance interactions among scientists, managers, policy makers and users within countries.

Several country delegates at the workshop felt that networking is necessary and would benefit their own national efforts. Delegates suggested that IPGRI should take a leading role in developing networking efforts, and that the resulting network could be called the Southeast Asian Forest Genetic Resources Programme, or SEAFORGEN. Delegates also discussed the need for a national institution to coordinate future activities in each country. The following institutions were suggested: Department of Forestry and Wildlife (Cambodia), Forest Research Development Agency (Indonesia), National Agricultural and Forest Research Institution (Lao PDR), Forest Research Institute Malaysia, Department of Environment and Natural Resources (Philippines), Royal Forest Department (Thailand) and Forest Science Institute Vietnam. No institution was identified for Myanmar because no delegates from that country were present.

Identifying national institutions, however, will require more consultation among various institutions and stakeholders before networking activities can start. During this process, the availability of national funds and the level of commitment among interested stakeholders should be assessed to evaluate the long-term prospects of any proposed activities. Before this workshop, the Asia Pacific Association of Forestry Research Institutions (APAFRI) and IPGRI had already started discussions on the need to enhance networking activities on forest genetic resources in the Asia-Pacific region. Further discussions are underway to assess the level of interest among APAFRI members and other stakeholders before seeking funds to enhance networking activities in this region.

### **Recommendations for further action**

Delegates at the workshop made the following recommendations for further action:

- A regional consultancy should be carried out, in collaboration with the countries represented at the workshop, to complete the species information list.
- After completion of this consultancy, a regional meeting should be organized to evaluate and discuss its results, with the following aims:
  - Identify actions required to conserve priority species at the operational level;
  - Make plans to implement the proposed activities and identify the level of interest by species and countries;
  - Identify one core institution in each country to coordinate the activities; and

- Identify the requirements for implementing these plans at the national level (e.g. institutional strengthening, training, regional collaboration and so on).
- IPGRI should coordinate these actions in collaboration with other regional and international organizations, and with a special emphasis on enhancing networking on forest genetic resources.

## References

- Enters, T. (2000) Rethinking stakeholders involvement in biodiversity conservation projects. In Young, A., Boshier, D. & Boyle, T. (eds.), *Forest conservation genetics: principles and practice*. CSIRO Publishing, Collingwood.
- FAO (1999) *State of the World's Forests 1999*. Food and Agriculture Organization of the United Nations, Rome.
- FAO (2000) *Report of the Eleventh Session of the FAO Panel of Experts on Forest Gene Resources*. Food and Agriculture Organization of the United Nations, Rome.
- FAO (2001) *State of the World's Forests 2001*. Food and Agriculture Organization of the United Nations, Rome.
- Kanowski, P. J. (2000) Politics, policies and the conservation of forest genetic diversity. In Young, A., Boshier, D. & Boyle, T. (eds.), *Forest conservation genetics: principles and practice*. CSIRO Publishing, Collingwood.
- National Research Council (1991) *Managing global genetic resources: Forest trees*. Committee on Managing Global Genetic Resources: Agricultural Imperatives, Board on Agriculture. National Academy Press, Washington, DC.