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Biodiversity Conservation and Sustainable Management of Forests: Socioeconomic Problems with Farm-Forestry of Rainforest Timber Production in North Queensland

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26.1 Introduction

Although it is now six years since the signing of the Convention on Biological Diversity and Agreement on Forest Principles, there seem to have been few improvements in the sustainable management of biodiversity in forests. In reality, most forest managers have little understanding of biodiversity issues and how they can improve the maintenance of biodiversity. Recognizing this problem, eight priority forest research needs (Box 1) were identified by the Conference of the Parties on Biological Diversity (CBD) at its third meeting in Buenos Aires, in November 1996, based on recommendations from the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA). The first part of this paper discusses some of the advances made towards answering some of these questions, through the use of a number of case studies. The relationship between biodiversity and sustainability in managed forest systems is very poorly understood. Some have looked at how species composition and abundance, or assemblage structure, changes with forest disturbance and use, but often these studies have been based on single taxa. Others are looking at rapid biodiversity assessment techniques for sampling indicator groups. In practice, these studies are often designed with a view to identifying a number of key groups that might act as surrogates for others. A third approach is taken by those who investigate the relationship between biodiversity and forest ecosystem processes. In this paper, we argue that this third approach may hold the greatest utility for those

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Box 1. Research and technological priorities from the 1996 meeting of the Conference of the Parties of the Convention on Biological Diversity

- Building the scientific foundations and methodologies necessary to advance the elaboration and implementation of criteria and indicators for forest quality and biodiversity conservation as part of sustainable forest management
- Analyzing the role of biodiversity in forest ecosystem functioning
- Analyzing measures for mitigating the underlying causes of biodiversity loss
- Advancing scientific and technical approaches to (i) rehabilitating degraded and deforested ecosystems and (ii) enriching biodiversity in forest plantations
- Identifying gaps in knowledge in the areas of fragmentation and population viability to include mitigation options such as corridors and buffer zones
- Assessing ecological landscape models, the integration of protected areas in the ecosystem approach to sustainable forest management, and the representativeness and adequacy of protected areas networks
- Analyzing scientifically the ways in which human activities, in particular forest management practices, influence biodiversity, and assessing ways to minimize or mitigate negative influences
- Developing assessment and evaluation methodologies for the multiple benefits derived from forest biodiversity

Concerned with assessing the sustainable management and use of forests, particularly in developing countries where resources for such exercises are extremely limited. In particular, a new approach to assessing sustainable management of forests, criteria and indicators, shows considerable promise and is discussed here.

The second part of this paper discusses some of the socioeconomic issues that are limiting the uptake and growth of farm forestry. In Australia, there has been recognition that forestry practices need to pay greater attention to biodiversity issues, particularly in those areas that are most biologically sensitive, such as the tropical rainforest region of North Queensland. Over the last five years, there has been a major attempt to develop a farm-forestry program in tropical North Queensland based on endemic rainforest tree species — rather than exotic softwoods — that enhance the biodiversity values of plantation forests, while at the same time providing a new revenue source to farmers through timber production. Although many farmers have provided land for such farm forestry and have been satisfied with this investment, the take up of the program has not been as widespread as it could be. Here, we discuss some of the socioeconomic problems that are preventing the development of this industry. We consider that these problems are not unique to farm forestry in North Queensland, but are likely to be similar in other parts of the world where farm forestry has been far less successful or non-existent.