Introduction

The Biodiversity Planning Support Programme (BPSP) of the Global Environment Facility (GEF), implemented by the United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP), has a mandate to provide assistance to national biodiversity planners as they develop and implement their national biodiversity strategy and action plans (NBSAPs) or equivalent plans, programmes, and policies. As part of the overall Programme, UNEP holds responsibility for identifying best practices, guidelines, and other tools to enhance the biodiversity planning process. In particular, these guidelines are being developed for areas that have been identified by biodiversity planning practitioners as "poorly defined emerging issues".

Agrobiodiversity was not originally considered to be part of the biodiversity that was going to be conserved by the global initiative that became the Convention on Biological Diversity. But once the Convention was forged, and appropriate targets for the programme of work were discussed, there was a strong outcry, particularly from developing countries, to incorporate agricultural concerns into the work of the Convention. Not only do agricultural systems impact heavily on the conservation of wild biodiversity, but it has been shown in multiple ways that farming landscapes host a large share of the planet's biodiversity, and much that is extremely critical to human livelihoods.

In 1996, the Third Conference of Parties of the Convention on Biological Diversity established a programme of work on Agricultural Biological Diversity (Decision III/11). Agricultural biodiversity was defined to include all components of biological diversity of relevance to food and agriculture. This includes: genetic resources of harvested crop varieties, livestock breeds, fish species and non-domesticated ("wild") resources within field, forest, rangeland and aquatic ecosystems; biological diversity that provides ecological services such as nutrient cycling, pest and disease regulation, maintenance of local wildlife, watershed protection, erosion control, climate regulation, and carbon sequestration. This range of topics was then further elaborated at the Fifth Conference of Parties in Nairobi in the year 2000, with Decision V/5. This means, at a minimum, that the topic will need to be addressed in national reports and in National Biodiversity Strategies and Action Plans.

Unfortunately, for all its recent attention, agrobiodiversity still falls under the category of being a "poorly defined emerging issue". In general, countries have taken agrobiodiversity to refer primarily to crop genetic resources, as this is where most of the conservation efforts have been focused. Even here, interventions to assure conservation are not evident or simple; as has been noted (Thies 2000), many other aspects of biodiversity such as forests or wildlife are threatened by overuse, yet agrobiodiversity and traditional knowledge of farm genetic resources is threatened because it risks to fall into disuse, to be supplanted by modern technologies. How to increase that use while assuring the custodians of agrobiodiversity receive appropriate benefits remains a thorny problem. At the same time, other aspects of agrobiodiversity – such as soil biodiversity, and wild biodiversity in farming landscapes– are even much poorer documented and understood. Many aspects relate to the extremely numerous but taxonomically least studied aspects of flora and fauna: soil microorganisms, insect pests and natural enemies, and pollinators. As national biodiversity planners are asked to incorporate agrobiodiversity into their work and plans, we must recognize that there is no definitive, authoritative guide to agrobiodiversity in all its manifestations, and little experience with how it interacts with policy decisions.

That said, agrobiodiversity conservation has the potential to be one of the leading lights of the Convention on Biological Diversity. With many other areas of biodiversity conservation, conflicts over resource use abound, and it seems difficult even for environmental econo-

mists to show us, convincingly, that conservation can mean economic benefits, at least in the short run. In agricultural systems, however, there is ample room for "win-win" solutions: for example, less use of pesticides which decrease biodiversity, in exchange for low-input sustainable agriculture with reduced input costs for farmers. Or, conservation of pollinators in hedgerows, leading to increased crop yields. Or, systematic and sustainable exploitation of wild biodiversity, in farm settings such as game ranches.

In the words of one of our expert reviewers (Knowledge Systems); "There is a danger in Biodiversity Planning to focus on the measures needed to protect biodiversity and ensure sustainable use and benefit sharing. In work on agricultural biodiversity, it is not so much its 'protection' as its 'development' through diverse management practices, that becomes key. Indeed, it can be said that agricultural biodiversity is the product of a healthy sustainable agroecological production system, as well as being its base component. So we are dealing with a highly dynamic system in which people are at the centre."

With this in mind, we have undertaken the drafting of this guide to existing best practices in managing agricultural resources for biodiversity conservation, based on the best available information in late 2001. The guide adopts a structure for looking at agrobiodiversity that has emerged from expert meetings and the CBD's liaison group on agrobiodiversity: of farm genetic resources, ecosystem services, knowledge systems, and landscape level issues. The case studies touch on measures and experiences to conserve these aspects of agrobiodiversity in Brazil, Mexico, Cuba, Russia, the Commonwealth of Independent States region, Yunnan province in China, Ghana, Nigeria, Kenya, Ethiopia, Zimbabwe, South Africa, India, the Philippines and Vietnam. Case studies were reviewed and additional information provided by scientific experts in the fields of pollination biology, soil biodiversity, biodiversity that migitates pests and diseases, crop genetic resources, animal genetic resources, traditional knowledge, wild biodiversity in agricultural landscapes, and landscape level considerations of agricultural biodiversity.

Case study authors, expert reviewers and other resource persons were brought together in a workshop held in Nairobi in July 2001, to identify a set of principles, practices and tools of mutual benefit to sustainable agriculture and to biodiversity conservation planning. This guide has been developed on the basis of the key priniciples and practices identified at the workshop, which have then been linked to existing tools and references to help National Biodiversity Strategy and Action Planners to incorporate these concepts in their plans and initiatives.

Structure of the Guide

This guide has been structured in three parts. First, we look at principles relevant to the conservation of agricultural genetic resources, which are largely managed on-farm (with the exception of wild relatives of crops). Moving out further from a farm field focus, we consider principles relevant to the conservation of ecological services, which generally require some wild habitat in farm landscapes. And finally, we examine the conservation of wild biodiversity in agricultural areas, and the need to "biodiversify" agricultural landscapes.

Reporting Conventions

We have followed a standard format throughout this guide. First, for each part, a list of principles is given. Each principle is then addressed. Principles are noted in green type-face as:

Principle 1.1 Baseline Information needs to be strengthened.

Following this, best practices are noted as:

BEST PRACTICES

Cataloguing, characterising and databasing genetic resources

Where possible, models of actual experiences in different countries are noted as below:

India: Farmer's names for their varieties of rice in selected villages of Madhya Pradesh were shown to adequately reflect the patterns of variation found by PCA, a modern genetic analysis. PCA analysis revealed that farmer-named varieties corresponded to over 65% of the true genetic variation. The landraces showed a continuum of variation, rather than distinct clusters (Motiramani et al 2000).

and lastly, relevant tools, with an emphasis on those available at no cost, over the internet, are noted as:

Tools

- IPGRI has a number of resources available in plant genetic resources for agricultural and biodiversity planners in this regard: http://www.ipgri.org.