

## Foreword

Plant genetic resources are a key component in the sustainable development of agriculture and forestry. They contribute to development by helping to increase food production, eradicate poverty and protect the environment. The loss of genetic resources and, as a consequence, the genetic diversity they represent, is a widespread reality. It is therefore vitally important that we develop adequate and effective strategies to conserve these genetic resources. We need to build further on our knowledge of genetic diversity and introduce novel and powerful approaches that will eventually lead to a cost-effective identification of useful genes in germplasm. An effective use of genetic resources will be an important prerequisite for their sustainable conservation.

Molecular marker technologies are the most advanced and, possibly, the most effective means for understanding the basis of genetic diversity. They are efficient and accurate tools with which genetic variation can ultimately be identified and assessed in a rapid and thorough manner. By applying molecular technologies to approach the biological questions underlying the understanding of genetic diversity, we can make significant progress in the speed and depth at which we attain adequate and appropriate conservation and, thus, genetic resources made available for its use in crop improvement. However, the use of molecular markers is expensive and limited financial resources mean that they should be used in the most judicious way possible.

This set of training modules aims to facilitate capacity building in the use of molecular marker technologies, as it recognises that skilled human resources and institutions capable of "keeping pace with scientific progress" are key to the conservation of genetic resources. The authors are keenly aware of this need, and have therefore developed this set of training modules, of which *Using Molecular Marker Technology in Studies on Plant Genetic Diversity* is the first, to help build capacity in the use of molecular technologies. With this module, workers in plant genetic resources should be able to make better-informed decisions on the methods to use so they may more readily understand and, therefore, more effectively safeguard the genetic resources that underlie our very existence.

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