Enhancing capacity in managing forest genetic resources: teaching and learning through case studies

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Abstract

Forest trees are long-lived species with high genetic diversity that is crucial for their survival, regeneration and adaptation. However, forest managers and conservationists are often poorly informed about the relevance of genetic aspects to population viability. Lack of understanding of forest genetic resources (FGR) constrains conservation of tree species, increases genetic risks in future generations and hinders adaptation to climate change. Current3^{o} forestry education curricula show poor or no coverage of FGR issues, while biology teaching is often devoid of the social and practical realities. A vicious cycle is brewing where teaching and understanding of FGR and its relevance to conserving and using tree species—in protected areas and production landscapes—becomes increasingly marginalised.

We describe an approach to teaching and learning based on real datathat covers practical issues in forest/tree conservation and management of global and local relevance.The Forest Genetic Resources Training Guide (http://forest-genetic-resources-training-guide.bioversityinternational.org) is modular: each module includes case studies on ~~a~~ topics such as: developing conservation strategies for particular tree species, genetic impacts of logging, and ensuring genetic diversity in trees planted on farms. Designed to promote 'FGR-friendly' decision-making, each case study provides genetic, ecological and socioeconomic information for students' analysis. Background material is provided for each case study through teacher's notes, PowerPoint presentations and videos. The material is flexible and easy to use in both 3^{o} education and on-the-job training.It has been tested in a range of formal and informal learning situations, provingvery popular with trainees. A recent survey illustrates a potential usein the development of an Asia-Pacific Regional Training Centre on FGR.Modules are currently available in English, Spanish, French, with Russian and Chinese in preparation.