

## **Importance of Genetic Resources in Ecosystem Management**

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Genetic resources refer to genetic variation within species and diversity among higher taxonomic lineages. This diversity is of fundamental importance to the structure, function and resilience of human dominated and natural ecosystems. Genetic resources also provide options for an uncertain future marked by global change, though paradoxically global change itself in the form of homogenization of landscape, spread of monocultures, climate change and exchange of biota is the major fact responsible for erosion of genetic resources. Using examples from the work of the Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore, I show how the ultimate productivity and resilience of human-made and natural ecosystems will remain at risk until efforts to enhance genetic diversity are explicitly incorporated into practices designed to manage natural resources on an integrated basis. I demonstrate how ATREE has integrated genetic resource management into overall management plans for a variety of ecosystems in southwest India. These plans include an assessment of threats to genetic resources as well as the risks associated with their loss, and mitigation measures that include monitoring, provision of incentives, and policy and institutional reforms. The major challenges to the incorporation of genetic resource management into integrated management goals stem from long rather than short-term gains from maintenance of genetic resources, contradictory policies regarding the importance and the perceived value of genetic resources, and inadequate financial and institutional mechanisms to retain genetic resources. Financial incentives and new policies will be required to meet these challenges.