Linking Conservation of Forest Genetic Resources to Species Restoration in Western Himalayas

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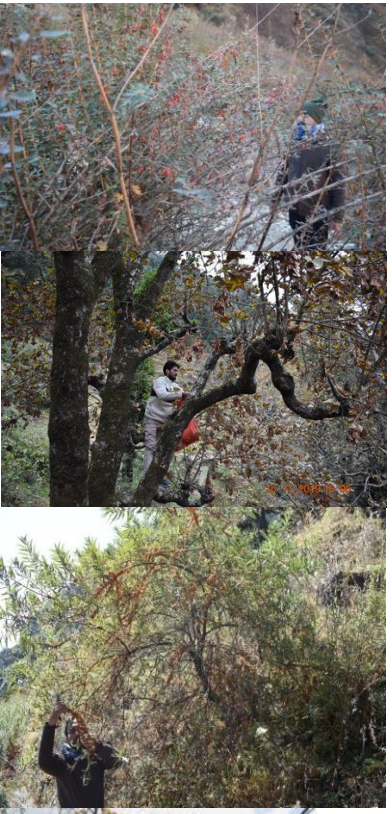


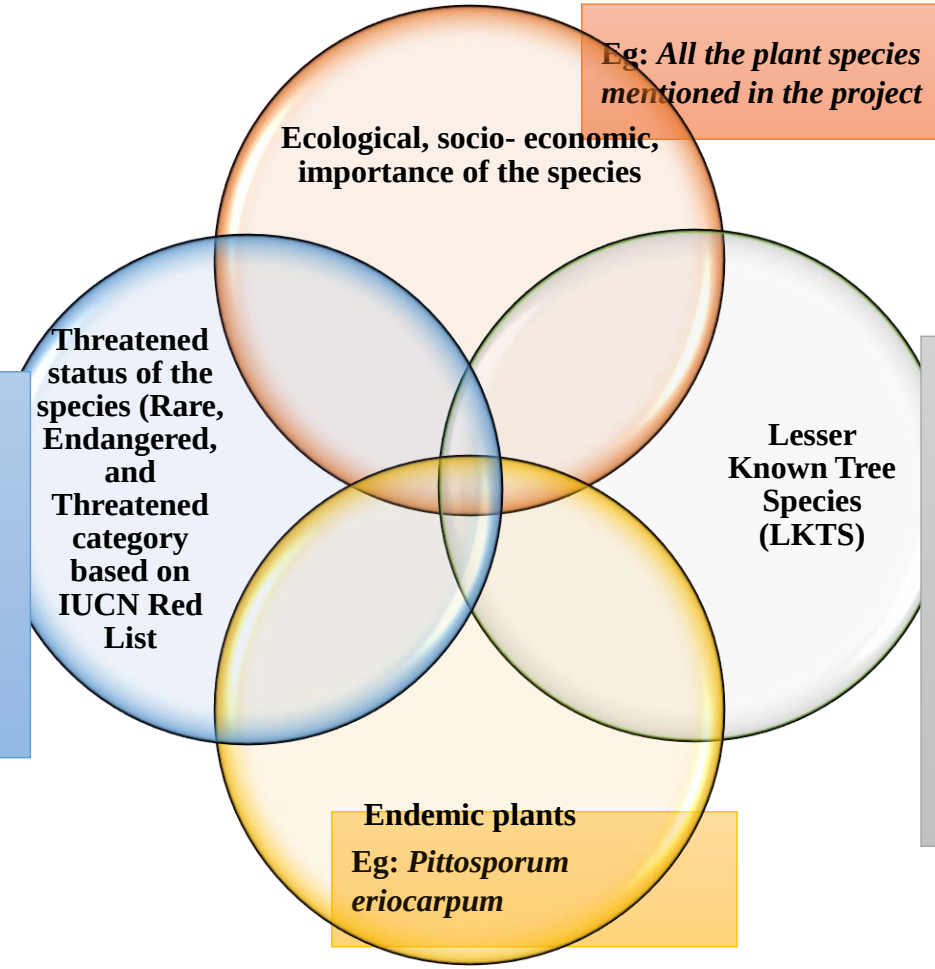
18,236 higher plant species (18,159 Angiosperms and 77 Gymnosperms, documented from India (*BSI, 2015: Plant Discoveries 2014*).

≥ 80% of this higher plant diversity is contained in the forest habitats (≈14,500 species).

About half of this forest plant diversity constitutes FGRs (Trees, shrubs, woody lianas) (≈7,250 species)

Species Prioritization

Species of Western Himalayas (Uttarakhand) state were prioritized and selected based on certain criteria



Eg: *All the plant species mentioned in the project*

Eg: *Berberis lycium*
Buxus wallichiana
Cedrus deodara
Corylus jacquemontii
Fraxinus xanthoxyloides
Pyrus pashia
Rhododendron arboretum
Rhus parviflora
Uncaria pilosa

Eg: *Acer oblongum*
Albizia julibrissin
Bauhinia semla
Buxus wallichiana
Carpinus viminea
Cinnamomum tamala
Desmodium oojeinense
Fraxinus micrantha
Hippophae salicifolia
Holoptelia integrifolia
Oroxylum indicum

Eg: *Pittosporum eriocarpum*

Components of the Programme

- Comprehensive inventory with population and threat status of FGRs
- Eco-distribution maps of priority FGRs
- Seed samples of prioritized FGR species deposited in Genebank (with ICAR NBPGR)

FGR seed and germplasm storage is series of procedures for the conservation of plant genetic material/seed in facilities which support either storage or the continuity of the conditions suited to maintain the viability and genetic constitution of the seed through *ex situ* methods

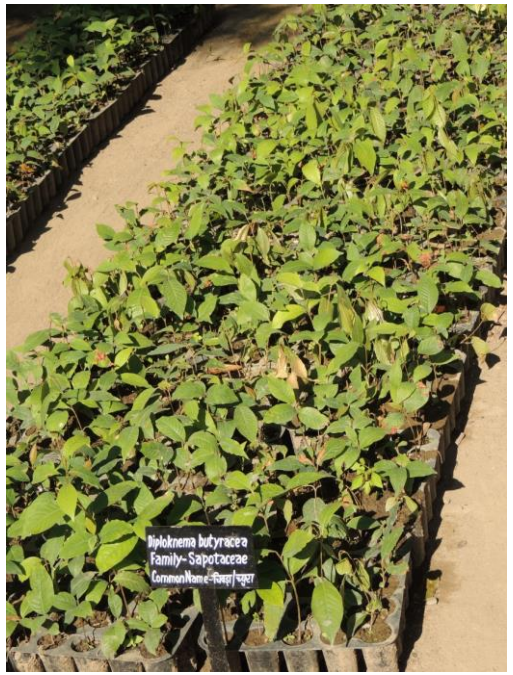
- Genetic diversity & population structure of important FGRs studied and their *in situ* conservation measures put in place
- Germplasm of 10 important FGRs conserved in the form of Field Gene Banks

Long term conservation of processed seed samples

The well processed, cleaned, desiccated and initial viability determined seed samples of 100 forestry species with passport data were deposited in the Seedbank of ICAR-NBPGR.

Seed storage at -18^{0}C in the seed gene bank

- Field germplasm banks of several species (*Taxus baccata*, *Cinnamomum tamala, Diploknema butyracea, Rhododendron arboreum, Myrica esculenta, Fraxinus* sp., etc.) have also been established under the programme.
- The material will be multiplied further for producing planting stock of these species.
- Species being planted back in the forest areas i.e. native range of the species, in close collaboration of the Forest department
- Both *in situ* and *ex situ* conservation become the focal point of species conservation and restoration programme for FGRs of Himalayan Region.



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