

## Healing sacred forest in western Madhya Pradesh, India

Since time immemorial, India has a tradition regarding conservation of natural resources for the benefit of human beings. Biodiversity plays an important role not only in the livelihood of humans but also in the maintenance of the earth<sup>1</sup>. Sacred groves are biodiversity-rich forest patches conserved by local tribal communities due to their religious beliefs; they are also considered as the home of threatened and endemic plant species<sup>2-5</sup>. The indigenous communities consider these virgin forest patches as powerful and sacred, due to this belief nobody poses any threat to such grove<sup>6</sup>.

We came across a sacred grove in Madhya Pradesh (MP) during a field survey conducted from 2010 to 2013. The Ishwar Baba sacred grove is located near Kalibel village in Aalirajpur district of western MP (Figure 1). The tribal communities of Aalirajpur district have been conserving these forest patches due to religious beliefs. The tribal people residing in Kalibel and adjacent villages mostly belong to the Bhil, Bhiala and Pataya communities. In the grove, there is a small Shiva temple, where the locals come to worship. The total area of the grove is approximately 4 acres.

An exhaustive field survey was undertaken, covering all seasons. The ethnobotanical information on medicinal plants was obtained through a series of semi-structured interviews with traditional healers<sup>7</sup> and the threat status of plant species was analysed based on the criteria suggested by IUCN<sup>8,9</sup>.

The floral diversity of Ishwar Baba sacred grove shows 144 plants belonging to 57 families and 134 genera. Fabaceae is the dominant family followed by Asteraceae, Convolvulaceae, Acanthaceae, Poaceae, Lamiaceae, Malvaceae, Combrataceae and Amaranthaceae. Analysis of plant habitats shows that majority of the used species are herbs (50%) followed by trees (22.91%), climbers (15.27%), shrubs (5.55%), grasses (4.86%) and epiphytes (1.38%). These plant species are used in the treatment of various ailments; the most preferable plant parts used to make plant preparations are the leaves followed by root, seed and stem bark. The fruit, bulb, flower, rhizome, inflorescence, corm, gum and even the whole plant are used medicinally, while resin, tuber and heartwood are the least used. These species are used to treat skin disorders

(12%), respiratory disorders (8%), diabetes (7%) and snakebite (4%). Using IUCN criteria, the threatened plant species are categorized as critically endangered (3 spp.), endangered (9 spp.), vulnerable (16 spp.), occasional (37 spp.) and common (79 spp.). The most preferred plant is *Cuscuta reflexa* used in the treatment of jaundice followed by *Euphorbia fusiformis*, *Ficus racemosa*, *Gloriosa superba* used as an antidote in snakebite, *Helicteres isora* in diarrhoea and *Holorrhena pubescence* for malaria.

This sacred grove has a good number of medicinal plants and the local tribal communities have sound knowledge about them. Due to remoteness of the study area, modern healthcare facilities are unavailable and therefore plants become the only source for primary healthcare. There is a need to document this dwindling indigenous knowledge as the younger generation is reluctant to acquire such knowledge from their ancestors. The present study confirms that 28 plant species are facing severe threat due to uncontrolled exploitation for medicinal purposes, loss of habitat, trading for parts, forest fire, draught, etc.



Figure 1. Ishwar Baba sacred grove, Madhya Pradesh, India.

Therefore, conservation of these dwindling species is the need of the hour. Most of the medicinal plants are cultivated by the medicine men in their kitchen gardens for conservation as well to fulfil their requirements. *In situ* conservation is an effective way for the conservation of these dwindling plant species. Also *ex situ* conservation should be promoted by developing gene bank and germplasm bank at the regional level. The baseline data from the present study can be used by the scientific community for its scientific validation.

Sacred groves have been flourishing in India since ancient times. However, due to modernization the erosion of the traditional knowledge is continuously going on. The overexploitation and loss of habitat are the major threat factors for pushing some species into various threat categories. Thus conservation of the Iswar Baba sacred grove is vital not only

for the conservation of medicinal plant diversity and indigenous knowledge but also for ecosystem health and socio-economic upliftment of local tribal communities

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