

Need for Promoting Plant Based Ecotourism in India

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Ecotourism in India

Tourism in India is probably as old as its 5000 plus year old culture. However, tourism as it is known today began in India only after 1946, following the recommendations of the Sargent Committee. It was only after the 1980's tourism activity gained momentum in India. The country with its large treasure of natural beauty, geography, archaeological monuments and diverse culture has attained a prime position in the field of tourism. India is among world's top 50 tourist destination countries and the second largest net foreign exchange earner. As per a survey undertaken by Conde Nast Traveller Magazine India has been ranked as the 4th most favoured country for holidays, above South Africa and Switzerland. About 10.5% annual growth in overseas visitors and 7.9% growth per annum in tourism related GDP are some of the evidence for India's growing popularity in tourism sector.

Ecotourism in India has received much attention in recent years. The exotic range of flora and fauna in India is the reason behind the successful growth of ecotourism in the country. There are about 400 plus wildlife sanctuaries and 99 national parks sprawling across the country. These natural homes accommodate an estimate of over 350 species of mammals, 2100 types of birds, 350 varieties of reptiles and countless insects. Ecotourism means management of tourism and conservation of nature in a way so as to maintain a fine balance between the requirements of tourism and ecology on the one hand and needs of the local communities for jobs, new skills, income generating employment and a better status for women on the other. Ecotourism was globally identified as a means

of achieving twin goals of biodiversity conservation and sustainable development.

Current focus of ecotourism in India

The great wealth of Indian wildlife can be imagined with the sight of the majestic elephants, the dance of the peacock, the camel's stride, the roar of the lion and tigers. The vastness of the wildlife and wilderness in India is unparalleled in the world. Ecotourism has entered an exciting phase in India, however it is mostly focused on some charismatic animals such as tiger, lion, leopard or elephant. Ecotourism in famous national parks or wildlife sanctuaries showcases one of these charismatic animals. Sometimes tour guides end up showing spotted-deer or some fox. There are few sanctuaries that are focused on conservation of other animals such as crocodiles, blackbuck, barking deer or wild ass. The birds are the next important creature on which Indian ecotourism is focused. There are several bird sanctuaries in India with talented tour guides rendering ecotourism services.

Can plant based ecotourism possible in India?

India is a megadiversity country with about 17500 of flowering plants and 50 species of gymnosperms. Country's biodiversity is also enriched with lower group plants including algae (6500 spp.), fungi (14,500 spp.), lichen (2500 spp.), bryophytes (2500 spp.), pteridophytes (1200 spp.). Among flowering plants alone 6000 are endemic, more than 1000 species are ornamental, 130 species are primitive, about 1300 are of medicinal importance and several are insectivores, parasites or saprophytes. In addition great variation in climatic condition has given rise to variety of forest types and these forests are important in harboring the faunal biodiversity along with the glorified animals. However, these forests are given less importance in terms of disseminating their useful information to the visitors. Except for protecting these trees from cutting probably no other service is provided to the vegetation in the protected areas. But in reality any given forest area would have several interesting plants with their own story. However, both the ecotourism department and tourist guides have to

explore such possibilities. The interesting plants list may include some rare plants, endemic plants, medicinal plants, insectivorous plants, parasitic plants, orchids, plants of ethnic use, keystone species, exotic plants, ornamental plants etc. The ecotourism should start giving information on the plants of the area along with showing tigers, lions or spotted-deer. For that the tourist guides should be given proper training by the experts. Giving information on plants of the area would be a value addition to the ecotourism.

Some plant based ecotourism areas in India

India has very few sanctuaries or national parks where plants attract the visitors. Some such protected areas are given here.

Deorali Orchid Sanctuary: It is situated in Gangtok, Sikkim, is renowned for its rare and extensive collection of more than 200 species of orchids. The noteworthy feature of the sanctuary is the fact that the orchids in the reserve vary depending upon the change in seasons. Orchids are known for their heady and sensuous fragrance. They are lovely flowers, often found in brilliant colours and beautiful shapes. The tropical, humid climate of the north-east region of India is ideal for the growth of these orchids.

Barsey Rhododendron Sanctuary: It lies in the south west corner of the West Sikkim district spreading over 104 km². The climate is wet and cold favoring the spread of the dominant genus Rhododendron. Along with the Rhododendron the sanctuary harbours faunal diversity such as Leopard cat, Himalayan Yellow Throated Marten, Himalayan Palm Civet, Himalayan Langur, Crimson Horned Pheasant, Monal Pheasant, Kaleej and many diverse species of birds. Sikkim government has an arrangement for tourists to stay on top of the hill in a forest barrack. There are now several home-stays at the entrance of Barsey Rhododendron Sanctuary as well as at Okhrey, which is a small village inhabited by mainly the Sherpa community.

Sikkim is an exceptional state which has developed ecotourism in district following sound

environmental and business principles, restrictions impeding the operation of ecotourism are eased, and the sector is well understood by all stakeholders. Ecotourism in Sikkim is strongly marketed in India and abroad, and awareness of the ecotourism opportunities available is raised in the appropriate marketplaces. Many jobs are created for the local communities, and income generation opportunities are improved and multiplied.

Sessa Orchid Sanctuary: It is a 100 km² protected area of India in the Himalayan foothills in Bhalukpong Forest Division of West Kameng District, Arunachal Pradesh. Sessa is noted for the occurrence of more than 200 orchid species. The sanctuary is unique in having 7 endemic species of saprotrophic orchids. The Government of Arunachal Pradesh in the late 1970s created a post of Orchidologist in the Forest Department and in 1989 established the Orchid Research and Development Centre at Tipi about 20 km away from the sanctuary. The centre is engaged in taxonomic study and conservation of the orchids and has discovered several new species.

Valley of Flower National Park: Located in West Himalaya, in the state of Uttarakhand, the Valley of Flowers is known for its meadows of endemic alpine flowers and the variety of flora. It is recognized as UNESCO Heritage Site. At 3352 to 3658 meters above sea level and spread over 87.50 km² the national park harbours more than 500 flowering plants. July to August is the best season for witnessing flowering of about 200 species of plants including orchids, poppies, primulas, marigold, daisies, anemone and Rhododendron. The national park also has several endemic and medicinal plants. This richly diverse area is also home to rare and endangered animals, including the Asiatic black bear, snow leopard, musk deer, brown bear, red fox and blue sheep. Birds found in the park include Himalayan monal pheasant and other high altitude birds. The Valley of Flowers is naturally well protected due to its remoteness and limited access. However, anthropogenic disturbances have increased in the recent days due to tourism. The national park has promoted garbage-free ecotourism with the involvement of local people.

Kaas Plateau: It is a plateau situated 25 km west from Satara city in Maharashtra. It falls under the Sahyadri Sub Cluster of the Western Ghats and it became a part of a UNESCO World Natural Heritage Site in 2012. It is a biodiversity hotspot known for various types of seasonal wild flowers bloom and numerous species of endemic butterflies flourish in the months of August and September. The plateau is situated at an altitude of 1200 m and is approximately 10 km² area. Kaas has more than 850 different species of flowering plants of which 624 are listed on the IUCN Red Data Book. These include orchids, shrubs such as the karvy, and carnivorous plants such as *Drosera indica*. The ecotourism is well developed in the plateau which not only includes showing wild flowers, but also visiting the magnificent waterfalls, monsoon streams, sightings of animals of this area.

Mangrove forests: Mangroves are the other tourism attraction in India which is purely made of plants. India has few fine mangroves such as Bhitarkanika, Pichavaram, Sundarbans and Narara Marine National Park attracting the tourist for their unique biodiversity. Bhitarkanika National Park is located in Kendrapara district of Odisha in eastern India. The national park is dominated by canopy of mangroves and it is home to saltwater crocodile, white crocodile, Indian python, King Cobra, black ibis, darters and many other species of flora and fauna. The Pichavaram Mangrove Forest near Chidambaram is the world's second largest mangrove forest. The Pichavaram forest not only offers waterscape and backwater cruises but also consists of rare species of *Avicennia* and *Rhizophora* as special attraction. It supports the existence of many rare varieties of economically important shell and finfishes. The Sundarbans is located at the extreme southern part of the West Bengal in the vast river delta on the Bay of Bengal. It is the largest single block of tidal halophytic mangrove forest in the world. Sundarbans is a UNESCO World Heritage Site. Sundarbans also includes National Park, Tiger Reserve and Biosphere Reserve. It harbours a total 334 plant species mostly the members of the Rhizophoraceae, Avicenniaceae, Combretaceae, Malvaceae and Euphorbiaceae. The

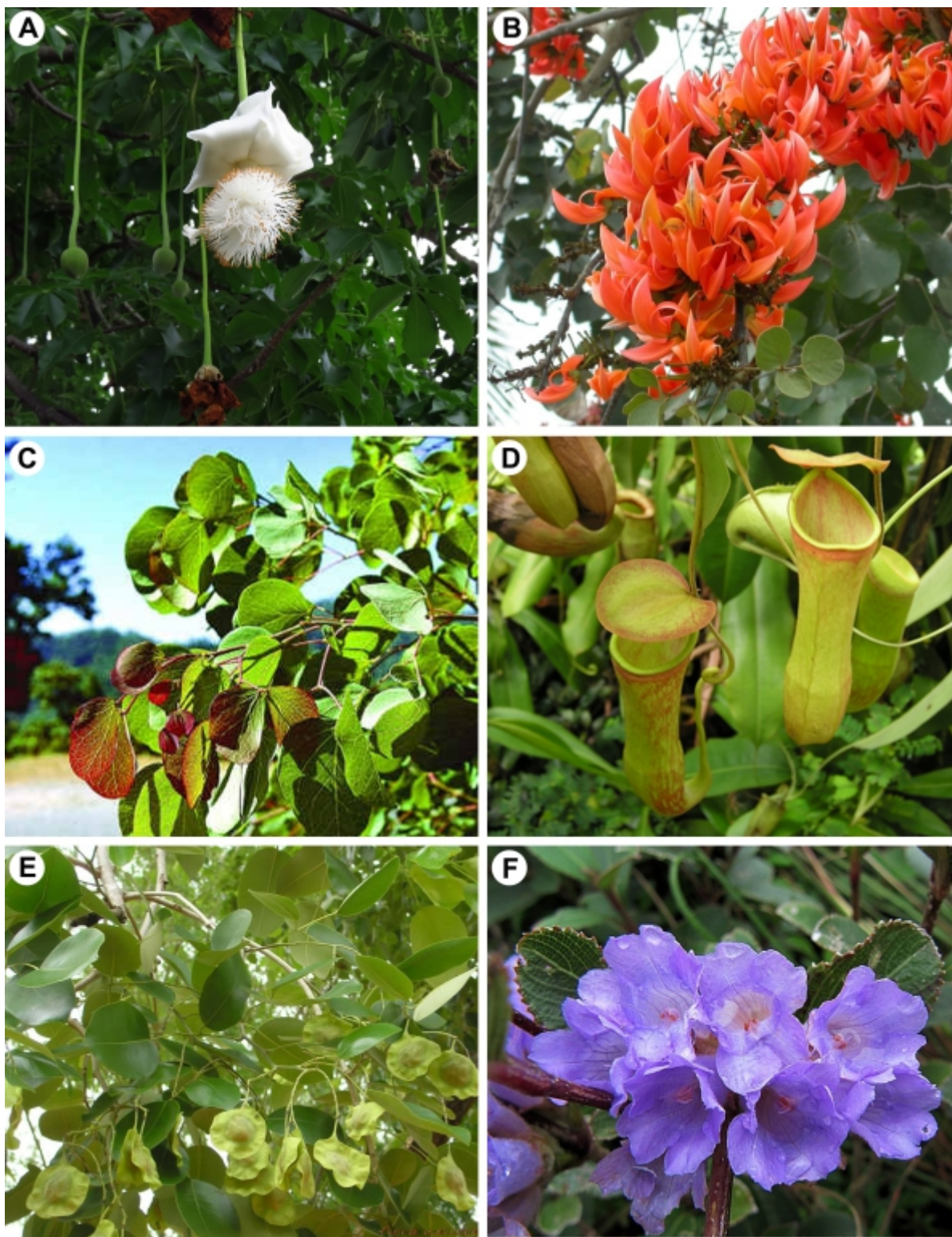


Figure 1. Some rare or interesting plants of that can be utilized for ecotourism purpose. A. *Adansonia digitata*, B. *Butea monosperma*, C. *Indopiptadenia ouduensis*, D. *Nepenthes khasiana*, E. *Pterocarpus santalinus*, and F. *Strobilanthes kunthiana*.

Sundarbans is also popular for Royal Bengal Tigers. Narara Marine National Park is situated on the southern shore of the Gulf of Kachchh in the Jamnagar district of Gujarat state. Marine National Park of Gulf of Kutchh is a fragile ecosystem. It consists of several islands completely dominated by mangrove plants.

Further scope for inclusion of plants in ecotourism

In order to make ecotourism more interesting and more informative the plants have to be effectively utilized. It is necessary to identify the interesting plant in an ecotourism area and educate the tourist guide who in turn educates the tourists. Some of the examples are given here.

Some rare or interesting plants of ecotourism importance: *Adansonia digitata* L. (Parijat, Fig. 1A) is a rare tree mostly found in gardens, however sometimes it is found in forest areas. Since the tree has mythological importance it is an ideal tree to be highlighted. *Butea monosperma* (Lam.) Taub. (Palash, Fig. 1B) is popularly known as flame of the forest, a common tree in plains of north India. It not only enhances the beauty of the forest but also is medicinally important. *Indopiptadenia oudhensis* (Brandis) Brenan (Hathipaula, Fig. 1C) is one of the plants that can be highlighted in ecotourism in Tarai region of India. The tree is confined to the Indo-Nepal border area in scattered populations along the Himalayan foothills between 156–908 m elevations. The genus is endemic, plant is endangered and also has several medicinal uses. *Nepenthes khasiana* Hook.f. (Pitcher plant, Fig. 1D) is found in Khasi Hills, Meghalaya. It is a popular insectivorous plant endemic, endangered and can attract huge number of tourists. *Pterocarpus santalinus* L.f. (red sanders, red sandalwood, Fig. 1E) is an endemic to the southern Eastern Ghats Mountains. This tree is valued for the rich red color of its wood and not for aroma. The tree is used for making crafts, exploited heavily and now it has become endangered. *Strobilanthes kunthiana* (Nees) T. Anderson (Kurinji or Neelakurinji, Fig. 1F) is a shrub

that is found in the shola forests of the Western Ghats in South India. Nilgiri Hills, which literally means the Blue Mountains, got their name from the purplish blue flowers of Neelakurinji that blossoms. Although the plant gregariously flowers once in 12 years, but every year one can see some plants in bloom.

Medicinal, wild edible plants and keystone species: Every forest or ecotourism area can be expected to have some medicinal plant or wild edible plants that can be introduced to the tourists' practice. Utilization of these plants by local people, tribe or ethnic groups will be an added information. For example Tharu tribes of Dudhwa National Park use a total 95 medicinal plants, 97 medicinal formulation of 45 ailments. Tharu tribes with their unique lifestyle make ecotourism an interesting aspect. A total of 83 wild plants are used for eating by tribal people residing in and around Parambikulam Wildlife Sanctuary in Kerala. *Madhuca longifolia* (L.) J.F. Macbr. known as mahwa tree is popular among villagers in Gangetic Plains for its flowers used in liquor preparation. A tourist easily gets attracted to such information exhibits his eagerness to know more about it. The ecotourism team can also identify the plants or fruit that are eaten by animals inhabiting the given area. Several species also act as keystone species in a forest area which needs to be identified. *Ficus* sp. is one such common keystone species which can be utilized for interaction purpose.

Spice gardens and home stays: Now a days spice gardens are getting popularity in south Indian states, especially in Goa and Kerala. The existing orchards or private land is converted into garden where popular spice plants of the region are planted. The visitors are given full information on the plants, parts used, harvesting, processing and cultivation. The local food also served here prepared utilizing these spices. These gardens not only generate income but also spread awareness on plants. Home stays is the other concept being popularized in the village side where guests provided local hospitality and food. The concept can also be extended for introducing local plants to the visitors.

Role of botanical garden ecotourism: Indian has numerous botanical gardens that are coming forward to provide environmental education to common people at the grass root level. The botanical gardens are of two types; open to public for recreation and others are attached to academic institutions with restricted entry. Lalbagh Garden (Bangalore), Government Botanical Garden (Ooty), Jawaharlal Nehru Memorial Botanical Garden (Srinagar) are some of the public gardens while National Botanical Garden (Lucknow), Jawaharlal Nehru Tropical Botanic Garden and Research Institute (Palode) and Indian Botanic Garden (Howrah) are some of the academic institute gardens. It is observed that both type of gardens are playing vital role in educating visitors about plants.

Importance of plant based ecotourism

Plants are important component of biodiversity, elements that forms the vegetation or forests which in turn harbour charismatic animals. It is not enough protecting them from cutting, but there is need to value them. The visitor should not only enjoy the sight

of charismatic animal, but also go back with some information on plants of the region. This will give plant conservation a more meaning and much needed boost. The ecotourism should be evolved and facilitated with expertise in plant knowledge. The guides in the ecotourism areas should be trained and encouraged to deliver as much information as possible regarding the plant wealth of that area. Educating about plants should become a practice. The ecotourism department should print education material such as banner, booklets, posters, handbills etc. regarding the plants of the area. The department can also organize special visits, conferences and meetings related to plants. It can also market plant products, local crafts, t-shirt and bags carrying the pictures of plants of the area. The Forest Department can also declare some areas as sanctuaries of particular plant, say Palash Sanctuary or Hathipaula Sanctuary. Similar innovative ideas are needed to popularizing the plants in ecotourism. Because, in ecotourism awareness on animals should go hand in hand with plants.