



## Forests and Traditional Knowledge

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### Introduction

Like water and land resources, forests are of crucial importance as they perform essential, social, economic and cultural functions. They are possibly among the world's most diverse, widespread and least understood ecosystems. At times, question arises that who will conserve the forests? Who are responsible for conserving them? The answer is multifold. From the administrative point of view it is the forest departments which control most of the natural forests. The historical answer is the rural and tribal community who lives with nature and continues to do and is the real custodians as these people have much better understanding of the value of forests and management needs.

Indian region is endowed with rich forest biodiversity, representing nearly 18000 flowering plant species occurring in various distinct floristic zones. About 75,000 species of animals, 340 species of mammals, 1200 kinds of birds, 420 reptiles, 140 amphibians, 2000 fishes, 50,000 insects, 4000 molluscs and other invertebrates are distributed in the land mass of 329 million hectares and a coastline of 7516 kms. Ethnobiological information on nearly 10,000 wild plant species including 7500 species for medicinal purpose, 3900 subsidiary food, 525 fibre and cordage, 400 as fodder, 300 piscicides and pesticides have been documented. Numerous medicinally important flora assessed through indigenous knowledge system have been documented and tested of popular tribal remedies. Over 300 items of assorted medicinal plants are extracted and traded from Himalayan and north eastern region of India, Pakistan, Nepal, Bhutan, Bangladesh and Myanmar. It is estimated that 1.6 million people

depend on forests for sustenance. Indigenous communities are represented by nearly 430 distinct ethnic groups interspersed among 54 million under 227 linguistic groups and inhabiting different phyto-geographical locations.

There is marked affinity of indigenous traditional knowledge (ITK) of different Indo-Nepal, Bhutan, Bangladesh, Pakistan, Sri Lanka, Myanmar region rich in forest biodiversity and genetic resource. Globally, Indian sub-continent has admixture of flora and fauna of African, European, Mediterranean, Australian and south American origin. An appreciable proportion of the biological components is used by indigenous communities for variety of value-added products such as food, fodder, dyes, fiber, gum-resins, rattans, bamboos, medicinal herbs etc. through their traditional mode of survey, collection and usage. Various ethnic groups have gathered considerable knowledge about the use of plants due to their constant and intimate association with the forests and plants in particular. ITK on Indian flora still remains scrupulously guarded by the communities from publicity. The wild resources are in fact the result of co-evolutionary relationships between indigenous people and nature since time immemorial. Traditional Knowledge and cultural practices passed on from generation to generation have ensured their sustenance and survival and played vital role in managing forests, biodiversity conservation, livelihood, health care, climate change adaptation.

Traditional Knowledge of forest management or Ethno-forestry is an essential part of cultures. India is rich in ethnic diversity and traditional



knowledge (TK) that has resulted in a considerable body of ethno botanical research, of which one study has revealed a deep understanding of medicinal plants supported by high consensus. There are over 537 different aboriginal groups in India with extensive knowledge of plants. Many qualitative surveys have recorded detailed utility of specific plants for many aboriginal groups such as the Malasars, Malamalasars, Malayalis, Irulas, Gonds, Koysd, Konda redds, Valmikis, Koyas, Chenchus, Lambadis, Jatapus, Savaras, Bagatas, Kammaras, Khondas, Nukadoras, Porjas, Jatapus, Paliyar, Kanikar, Todas, Kotas, Kattunayakas, Apatani and Chellipale. The tribes dwelling in nature depend on technologies that do not dominate their environment. They rely on renewable benefits the forest provides.

### **Traditional management practices**

Traditional conservation practices such as plant worship, sacred and water forests taboos, are important for conservation of diversity, soil and water resources. According to M.S. Swaminathan, the eminent ecologist, the sacred groves represent a unique example of Indian tradition of in situ conservation of nature. One can hear the music of mutual interaction and mutual dependence in this divine treasure of our ancient cultural heritage. In India, sacred groves are known by several names- Kavu, nagakkavu or sarppakkavu in Kerala, deorais or deoban in Maharashtra, orans or kenkri in Rajasthan, devarakadu or sindhara vana in Karnataka and sarana in Bihar. Sacred groves are also found in Ghana, Syria, Nigeria and Turkey. The sacred groves of Meghalaya are rich in rare plants and animals, some of them not found anywhere else in the world. The people of Meghalaya believe that those who damage the grove are put to death by forest spirit. The famous sacred grove called Low Lyngdoh, at Mawphlang, 25 km from Shillong, is well protected. The Munda tribals in Bihar were the first to establish groves in the state. The endemic species Khejri (*Prosopis cineria*) is the most dominant species in the sacred groves of

Rajasthan. One of the groves in Gootybailu village in Anantpur district of Andhra Pradesh has been dedicated to a noble lady called Thimmamma Marria Manu, who performed Sati. People believe that the spirit of this lady still lives in the banayan tree found there- which is now the World's oldest banyan tree, spreading over 1.6 hectares and providing shelter and food to thousands of birds. The sacred groves in Kerala function as cultural centres to the village folk. They also act as treasure house of medicinal plants.

### **Traditional knowledge and traditional medicine**

In Africa, Asia and Latin America, estimated 80 per cent of the population depends on medicinal plants and associated TK for their primary health care needs (WHO). Many plant-based modern medicines are used for the same purposes for which the local/indigenous communities use them. There has been 64 species of Folk Medicinal Plants reported in the Sikkim Himalayas of India, belonging to 42 families and 57 genera. The plants are all used as medicine among ethnic groups in Sikkim. Important ailments reportedly cured by these plants are epilepsy, leprosy, paralysis, asthma, typhoid, diabetes, hemorrhages during child birth, cholera as well as others. A few of these medicinal plants are believed among ethnic people to prolong life and are part of local tradition.

### **The Irulas and their traditional knowledge**

The Irulas of the Kodiakkarai Reserve Forests (KRF) in the Coromandal coast of Thanjavur district, India are known to be exceptional healers and keepers of TK of the flora in the coastal forests. The Irulas are an example of a culture that has preserved a highly diverse ecosystem that sustains their healthy lifestyles.

### **The Irulas and their land - Ethnography**

The Irulas are small tribal community, that is part of the Dravidian language group which is spoken in south-eastern India. They are recognized as a Scheduled Tribe (ST) by the Government of India.



Most ethnic populations of southern India are linguistically Dravidian. The Irulas belong to the Negrito (or Negroid) race, which is one of the six main ethnic groups that add to the racial mosaic of India. The culture of the Irulas has changed little over the last thousand years. Their staple food consists of minor millets, grain legumes, and wild yams supplemented with rice. They do not practice agriculture and therefore wholly depend on forest produce and wild animals like wild bore, rabbit, rat, deer, wild cat and fish. The Irulas settlements are located within or on the edge of the forests and consist of tiny scattered huts. More recently, some Irulas go to local villages to trade or sell honey, honey wax, firewood, wild fruits, yams, wild *Carissa*, *Manilkara* and *Solanum* berries and other native herbal products. This supports a productive and localized non-timber forest product (NTFP) industry, which supports many families. The Irulas trade NTFPs for local farm produce such as rice, potato, eggplant, tomato, tea, cookies and spices. Other occupations of the Irulas include intermittent farm labour and the legendary profession of snake charming. They have distinct cultural and religious practices including worship of the Goddess Kanniamma and appointment of Pujari 'priests' to serve their communities.

### Diversity in Irulas TK of medicinal plants

The Irulas revealed ethnotaxa used to treat a variety of illnesses and promote general good health in their communities. Plant remedies were utilized for various illness such as mosquito repellents, antibiotics, antidotes, appetizers, asthma, blood flow, body pain, cold, complementary food, cough, diabetes, diarrhoea, earache, eye pain, fever, general medicine, hydrocoele, hypothermia, intestinal worms, jaundice, leprosy, pregnancy pain, purgative, rheumatism, skin disease, skin-shine, spiritual, toothache and wounds. Native healing practitioners provide a source of income for many Irulas families.

The Irulas shared the concept 'Neenda aauil',

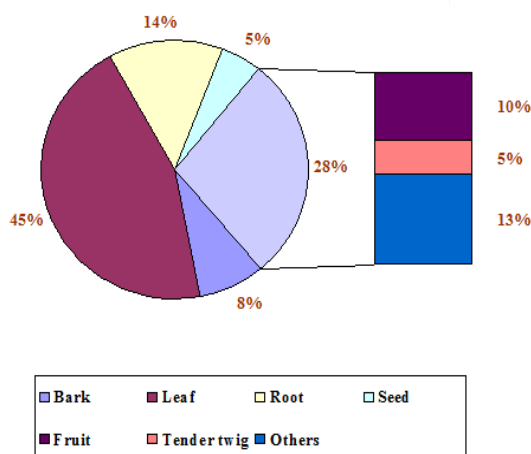


Fig. 1 : Plant parts used by Irula tribes for various ailments.

which translates to "living a long healthy life". An integral part of the Irulas health concept is in which healers insist on having plants as part of their diet to maintain good health. An ancient tradition of the Irulas is to eat certain plants on a regular basis according to the seasons in order to prevent certain diseases. It is a common practice for the Irulas to consume plants in the wild throughout their daily routine. While hunting, the Irulas grab leaves of *Capparis zeylanica* L. and eat them fresh to stimulate their hunger and increase their desire to hunt. This plant is also served as an appetizer prepared as a dipping paste with pepper, tamarind and garlic. While trekking through the forests, the Irulas would pick leaves to eat or chew on young tree branches. The young Irulas are also engaged in the use of plants in their daily routine. This may include cleaning or brushing your teeth with various types of young branches. The Irulas believe that brushing teeth with the roots of *thumbai* (*Leucas aspera* Willd.) for 40 consecutive days will make one immune to any snake venom.

One of the ailments that may be controlled by daily consumption of a particular plant is diabetes. Irulas have an ancient diagnostic system that utilizes their natural surroundings; The Irulas treat diabetes



using an ethnotaxa called 'Sirukurinjan', which appears to be *Gymnema sylvestre* in the Asclepiadaceae or "milkweed family". The young, tender, shiny pale green leaves are preferred over the mature leaves, which will also be used. Many Irulas families grow *Gymnema sylvestre* as a climbing vine near their home and it is a household custom to consume one leaf a day. The Irulas treat 'Moottu vadham' (rheumatoid arthritis) with at least two different ethnotaxa, including 'Vagai' and 'Mudakkathan'

The Irulas are also strong believers in spiritualism for which they utilize many plants. Every household doorway are a bunch of twigs tied in a bundle, 'Veppam' (*Azadirachta indica* A. Juss and it is used to keep away evil spirits.

## Conclusion

Nature conservation practices are very ancient tradition in India. Useful biodiversity species have much reverence in culture of our country. Innovative forest management practices, based on traditional knowledge and developed by rural communities over the centuries, have contributed significantly to the world's natural and cultural

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heritage by creating and maintaining landscapes of outstanding beauty. At a time when ecological degradation and deforestation have been taking place at an alarming rate in entire world, in India, numerous of pockets of natural vegetation spread over the country are preserved almost in pristine form. Such preserved pockets are commonly called sacred forests or *Sunai/ Sholai/ Devasthanam*. Cutting plants or grazing animals within sacred forest is a taboo. These forest covers show optimum growth of flora and luxurious exposure of fauna. Efforts should be made to protect these unique habitats by imposing forest laws, reducing exploitation of species at the local level by the crude drug vendors, mending the periodical collection system, encouraging cultivation by using biotech tools. Documenting the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. As indigenous cultures are closely maintained by the tribal and other forest dwellers throughout the world, the ethnobotanical investigation is a prerequisite for any developmental planning concerned with the welfare of tribal and their environment.

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