Traditional practices of tribal communities assist in environment conservation

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Abstract

Tribal communities live in harmony with nature. This is reflected in a range of traditional practices that embody their culture, agricultural practices, ethno-medicinal uses of plants, religious beliefs, rituals, festivals, customs and traditions. Through their traditional practices and knowledge, tribal people help in conservation of environment and biodiversity. The present paper briefly describes such traditional practices of tribal communities citing examples from some of the well-known Indian tribals. The paper highlights how beliefs and practices of indigenous people help in environmental management and at the same time also ensure its sustainable development. It is recommended to conserve traditional knowledge of tribal communities to ensure its descend to future generations successfully.

Keywords: Ethnobotany, Indian tribals, Indigenous people, Traditional knowledge

Introduction:

Human survival is supported by nature. Plants play a central role in this regard. There are evidences in history to support the fact that traditional and cultural diversification in human races occurred under natural settings of environment. This led to development of several distinct ethnic groups in different regions of the world with their own unique cultures, traditions and beliefs. The traditional practices of people have stood the test of time and continue to hold its important position in the society. These have played a crucial part in management of plant resources (Sahoo et al., 2021) and also paved a great way for environment conservation (Geng et al. 2017; Cai et al. 2022).

In this paper, we have discussed how tribal communities have lived harmoniously with nature and have played a significant role in conservation of the environment (Turner et al. 2022). It is concluded that because of their different traditional practices (Figure 1) that adore the various elements of nature, they are not only able to sustain their rich culture and heritage, but also protects the ecosystem that supports them. Dependency of man on nature makes headway for indigenous people to play a central role in the environmental sustainability and conservation (Reyes-García and Benyei 2019). It has been recently shown that a

justifiable conservation that authorizes and promotes the vision and traditional knowledge of indigenous people and embodies the environmental management practices of local communities is the best way to endure conservation of biodiversity (Hanazaki et al. 2020; Dawson et al. 2021).

Agricultural practices

The primary rationale of all human cultures has been to have enough to eat. Man has domesticated and cultivated all those plants that have provided them with food (Figure 2 and 3). He has selected plants with desired traits and has cultivated them since ages. It had largely influenced the biodiversity at all levels. It is still been practised by many tribal communities and other traditional farmers. It is for this reason that the important cereal crops have constituted our staple diet and have provided us with so many useful agricultural crops to meet our needs. This has resulted in the improvement of the crops and has helped in their conservation. For instance, agriculture is very old in the hilly areas of Kerala in India. Several tribal communities in the region, like Mavilan tribe inhabiting the Kannur and Kasaragod districts, practice primitive slash-and-burn cultivation (Kumari cultivation) in addition to other agricultural practices pertaining to crop diversity, plant protection measures, harvest and storing. They also know about the different types of paddy and can categorize the seeds according to their features (Suresh 2010). This has helped in the improvement and selection of the rice crop and also its better cultivation.

Tribal inhabitants also depend on wild edible plants and other forest produce to meet their nutritional requirements. For example, many indigenous and traditional leafy plants provide food security and play an important role in the socio-economic life of the local and tribal people of Chhattisgarh (Kumari and Solanki 2019). Likewise, local communities of Maldah district of West Bengal, India depend on wild edible plants to not only fulfil their food needs but also to earn their livelihood. A large population lives in areas adjacent to the forests thus playing a role in their conservation (Chowdhury and Mukherjee 2012). Conservation of indigenous food plants can be achieved by preserving the traditional knowledge and domesticating and promoting indigenous plant species (Suwardi et al. 2020).

Indigenous knowledge develops as a result of continuous practice, experimentation, innovation and adaptation. Many agricultural and farming practices have also emerged in a similar way that descend from one generation to next and thus evolve progressively to help in sustenance and conservation of environment (Hanazaki et al. 2020). For instance, sun exposure and flooding through irrigation are done to control weeds by local people of Nepal (Lama 2021) and ethno-pest management is practiced by using grounded pulp of the Khira leaf (*Holarrhenac pubsecens*) on the wheat crop by the Mewahang Rai and other communities of Nepal (Lama 2021).

Ethno-medicinal practices

Plants have been used to cure various ailments and diseases since the dawn of human civilization on earth (Marques et al. 2021). Since ages, the science of Ayurveda, or knowledge of life, is founded on the medicinal

uses of plants. It emphasizes the importance of preventive medicine. Many medicinal practices were subtly interwoven with the people's culture, rituals, customs and various ceremonies just in order to make them follow these medicinal practices and stay healthy. Use of different plant parts in healing wounds, preparing decoctions, traditional therapies, etc. has been documented in many ancient works and is practised even today. There are some local traditional healers or medicine-men in a tribal community that practice treatment and healing and thus play an important role in preservation of traditional knowledge and biodiversity (Gupta, 2021).

A number of plants including spice-yielding plants are used as medicine to treat numerous diseases and ailments by the Tangkhul Tribe of Ukhrul District, Manipur, India (Salam and Jamir 2016; Shimray and Lungleng 2017). The tribal communities living near the Kakrajhore forest in West Medinipur district of West Bengal use a number of ethno-medicinal plants such as *Smilex ovalifolia, Emblica officinalis, Curculigo orchioides, Croton roxburghii, Asparagus racemosus,* to name a few, to prepare medicinal remedies (Biswas et al. 2017). Similarly the Kani tribals in Thodu hills of Kerala, India use *Plumbago zeylanica* and *Ocimum tenuiflorum* along with many other medicinal plants for first aid remedies and to treat other common ailments like cough, cold, fever, headache and poisonous bites (Xavier et al. 2014). The use of plants for medicinal purpose is and will continue to remain an important reason to continually explore, improve and conserve them.

A study of the ethno-medicinal plants and their ethno-pharmacological application among the local communities of the Talash Valley, Dir Lower, Pakistan documented 50 medicinal plants belonging to 33 families, with Lamiaceae being the dominant family (Khan et al. 2018). It showed that the indigenous people, especially residing in remote areas rely solely on herbs (68%), leaves (41%) and decoctions (32%) prepared from these medicinal plants for health issues and to cure various ailments. The report emphasized the fundamental importance of biodiversity conservation and the need to devise strategies to ensure long-term availability of ethno-medicine.

About 93 medicinal plants have been reported to be used to treat various human and livestock diseases and thus conserved by local people of Gozamin Wereda, east Gojjam zone of Amhara region, Ethiopia (Amsalu et al. 2018). Similarly, Rana et al. 2021 have documented use of 78 plants to cure several problems related to skin, respiration and digestion by the native people of the Churah subdivision of district Chamba, Himachal Pradesh, India. The ethno-medicinal practice is a continuous tradition for long and is a part and parcel of the lives of local people, primarily owing to their acceptance, greater faith in the efficacy of herbal medicine and unavailability or limited access to modern healthcare facilities.

Not only ethno-medicinal plants, but ethno-zoological animals and their parts or products are used for treating various medical conditions. A study by Abebe et al. (2022) in East Gojjam, Northwest Ethiopia, has documented 25 animal species to be used for the treatment of different ailments among which mammals were in majority followed by birds.

Their use be indigenous community helps in conservation of animals and thus maintenance of nature's balance.

Practices based on religion, faith and mythology

Plants are significant in the mythological world. It won't be exaggeration if said that the very existence and sustenance of human race is based on various medicinal plants (Sen & Bhakat 2021). Possibly, man worshipped plants when he realized their lifesaving potential. Plants also became an integral and inseparable part of the customs, rituals, traditions and beliefs of human beings (Figure 4). It is this close association between people and nature, and plants, in particular, which can be looked upon as a valuable approach for plant conservation. For example, a study of the religious and supernatural beliefs of the Mising tribes of Assam during 'Dobur Uie' has revealed that they use as many as 30 plants belonging to 23 families for religious purposes as well as in the treatment of different ailments. Such plants are domesticated since these are used in different ritual practices and hence get conserved (Sharma and Pegu 2011). Because of some traditional and very strong magico-religious beliefs of the tribal people of district Anuppur, Madhya Pradesh many patches of forest are being conserved by them. Their belief that God resides in forests have helped in natural forest conservation (Ahirwar 2015).

Sacred groves represent a valuable site of biodiversity conservation especially for native, rare, threatened and vulnerable species (Upadhyay et al. 2019; Sen & Bhakat 2021). Several of them have very important ethnobtanical uses (Sharma and Kumar 2021). These areas are being curated owing to the socio-cultural and religious beliefs of the local people (Panda & Mund 2019). A study of the sacred forest of Sargiguda or Debta Gudi of Kalahandi district, Odisha showed how sacred groves play an imperative role in conservation and management of biodiversity in Indian tribes (Panda and Mund 2019). The cultural and religious beliefs of the local communities of the area helped in conserving 48 plant species belonging to 33 families. They are of the belief that the sacred groves are home to their divine deities or a spiritual being which they worship under the trees and thus must be conserved and guarded. A large number of endemic and endangered plants including many medicinally important plants are being protected in this way.

Singhal et al. 2021 have shown that Santal, Munda and Ho tribal communities of Jharkhand, India protect, conserve and manage the floral and faunal diversity in the terrain through their religious beliefs which integrates totemism, sacred trees and groves, linked taboos and religious tenets. They advocated safeguarding their religious values to ensure the protection of traditional knowledge.

Practices related to ethical, aesthetic, cultural, social and emotional aspects

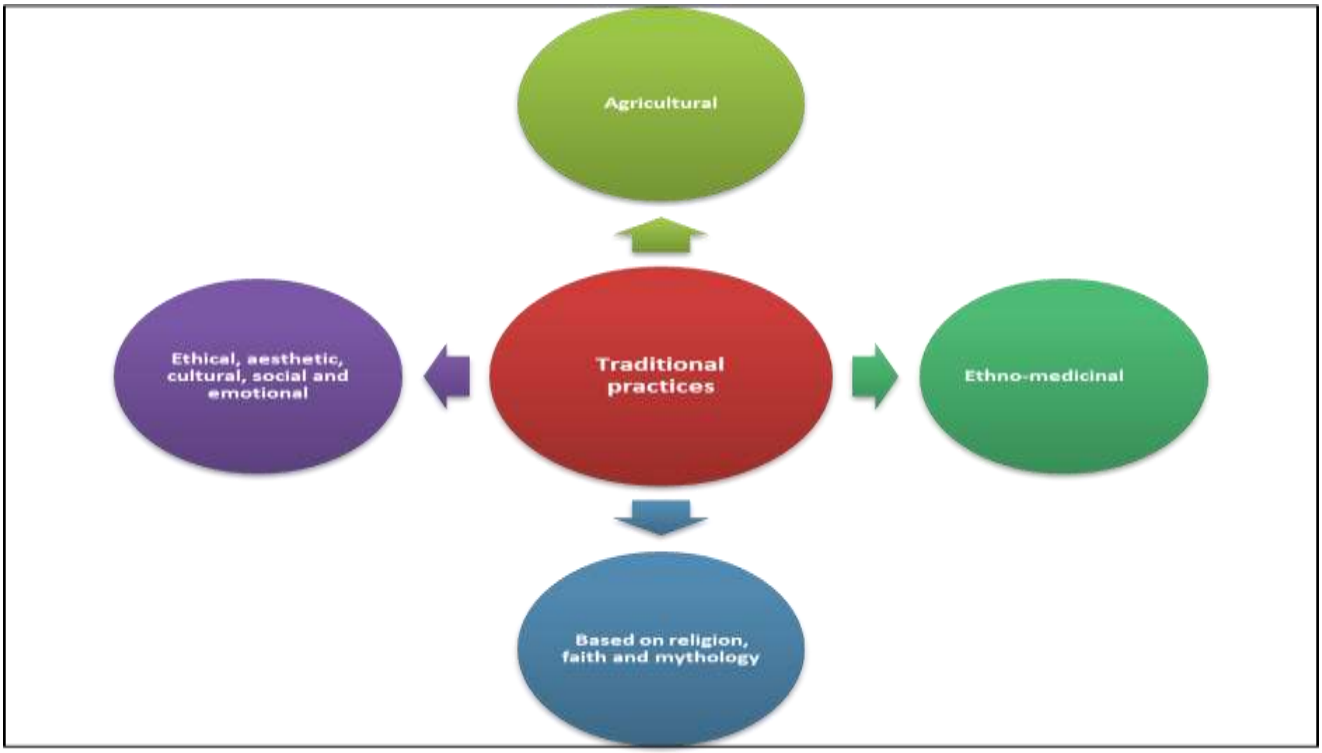

Figure 1: Diagrammatic representation of different traditional practices of tribal communities assisting in environment conservation

Plants form a fundamental part of human race. Apart from the use of plants for fulfilling the basic necessities, for medicines, or religious importance, they are also cultivated, maintained and conserved for their ethical, aesthetic, cultural, social and emotional value (Figure 5). Hao Nagas of Manipur use flowers of Kapaiwon, Sahārwon and Nāpawon or Mayāngwon for beautification and decoration purposes during their seed sowing festival, Luira. The use of these flowers symbolises hope and assurance of happy time ahead and represents a traditional practice which according to them is even relevant in the current time (Mawon 2017).

Newar community of Nepal celebrate 'Si:thi Na:kha' Festival near their water sources. Their beliefs do not allow them to cut trees or harm nature, instead clean and protect the watershed area (Lama 2021).

Figure 2: Tribal people depend on agriculture, wild plants and forests to earn their livelihood (Photo courtesy of Rigzin Yangdol)

Figure 3: Use of animals in farming and other agricultural practices by tribal communities (Photo courtesy of Rigzin Yangdol)

Maru et al. 2020 have discussed the indigenous ways of environmental protection and ecosystem conservation in Gedeo community, Southern Ethiopia from a socio-ecological perspective. Social taboos, sacred sites, cultural practices, expulsion charges, local and traditional rules, other prohibition mechanisms – all constitutes an indigenous belief system that have forbidden people from cutting trees, killing animals or birds and harming nature ruthlessly. As a result, the sacred forest in the area harbours several endemic and critically endangered plants, many extremely useful flora and fauna.

Figure 4: Plants are an integral part of the customs and traditions of tribal communities (Photo courtesy of G. S. Khamarek)

The tribal communities and local people play a vital role in protecting the nature and conserving biodiversity. Their existence and livelihood is so much dependent on their milieu that it would be appropriate to call them its protectors. It is the direct and intimate relationship between them and their surroundings that helps in promoting the conservation of environment.

Figure 5: Plants and trees are closely associated with the ethical, aesthetic, cultural, social and emotional life of local communities (Photo courtesy of G. S. Khamarek)

Conclusion

Human culture gets nourished and flourishes in the lap of the environment (Gurung and Shrestha 2021). Urbanization and modernization have

largely influenced the plant–human association. There's a pressing need to conserve the environment and to ensure food safety (Schaal 2019). The traditional practices aid in preservation and sustenance of reserves. The traditional knowledge resource possessed by the indigenous community should be safeguarded against loss and made available for all generations to harness. (Cai et al. 2022). It is important to identify the role, capacity and rights of indigenous people and local communities in effective and equitable conservation, to formulate laws and policies in order to accomplish the future conservation goals under the UN Convention on Biological Diversity (Dawson et al. 2021; Turner et al. 2022).

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