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Study of biodiversity and positive aspects of medicinal plant conservation in some selected sacred groves of Manipur

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Abstract

Manipur was a small princely state in the North-East India, having a history of about 2000 years. The ancestors of Manipur (Meiteies) believed and worshiped of forest deities which are called Umang Lai (Ancestral Deities). Umang Lai in Manipur is always associated with Sacred Groves. There are taboos e.g. it is a misfortune to cut down the trees grown in Sacred Groves. So, people around each and every Sacred Groves kept protected since time immemorial. The Sacred Groves are Scattered mainly in the valleys. Umang Lai Haraoba, a festival of dance and music, is always done every year which last 1 to 2 weeks. The Sacred Groves are protected by local people and Lai Haraoba committee and this links the present society to the past in terms of religious and cultural rituals. This descends again to the Biodiversity and Medicinal plant conservation in the Sacred Groves.

Keywords: Sacred groves, Umang Lai (ancestral deities), biodiversity conservation and medicinal plant conservation

Introduction

Umang Lai are the group of Sacred Groves preserved for local forest deities worshiped by the Meitei people, the major ethnic groups since ancient times in the Himalayan state of Manipur. There are 365 Umang Lai groves all over Manipur (Devi, 2000) ^[1] and 166 are in valley region, 99 in Imphal West, 37 in Imphal East, 22 in Bishnupur and 8 in Thoubal Districts (Current Science). Umang Lai literally means deities who give an appearance and elusively vanish from the common sight. Meiteis the dominant inhabitants of Manipur worship nature and ancestral Deities. The cultural practice of Lai Harauba is continuing since time immemorial with dance and music leading by the amaibas and amaibis and is a powerful festival in maintaining ecological balance along with conservation of Biodiversity and Medicinal plants. The role of Sacred Groves in the conservation of biodiversity has long been recognized (Kosambi 1962; Gadgil and Vartak 1975a; Khumbongmayum *et al.* 2004) ^[2,3,4]. All forms of vegetation in the Sacred Groves are supposed to be under the protection of the reigning deity of that Grove, and removal of even a twig is taboo (Gadgil and Vartak 1975b; Khumbongmayum *et al.* 2004) ^[4,5]. India is having abundance of Sacred Groves which ranges from a few square meters to several hectares. These are the tracts of virgin forest with diversity, which have been protected by the local people for centuries for their cultural and religious beliefs and taboos that the deities reside in them and protect the villagers from different calamities

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(Khumbongmayum *et al.* 2005 ^[4,6]. Umang Lai Haraoba is an annual cultural practice in most of the Umang Lai Laikon. This practices maintenance of areas of Umang Lai and become a medium to control the society in maintaining a harmonious relationship with the nature (The Sacred Groves of Manipur). During the Lai Haraoba there is a tradition of delivering oracle by the Amaibi. Dr. Ng. Ekashini defined Maibis as a woman who is directly conversant with the divine beings at a workshop on maibi culture of Manipur IGNC 11 DEC 2007) in front of the deities about the goodness and ill faith of a person or to the people of the locality. In doing so the Amaibi becomes subconscious and Amaiba sprinkles water in which the leaves or twigs of *Cedrela tuna* (Tairen) are kept dipped previously and the Amaibi brings back to normal conscious state. This is proof that have some neuro medicinal values in *Cedrela tuna*. Another ritual in Umang Lai Haraoba is that the things-fruits, flowers and vegetable to be offered to the deities are made sacred by sprinkling water dipped with *Cedrela toona* and *Dactyloctenium aegyptium*. Some other plants which are also used in the same are *Dicrocephala latifolia* (lalukok), *Sida acuta* (Uhal), leaves of Bamboo (wana).

As Manipur is ranked 6th position under Indo - Burma Biodiversity Hot Spot of Northeast region many diverse flora and fauna are available. Out of 18 selected Biodiversity Hot Spot of the world indicating high concentration of endemic species of plants (H. Tombi Singh, 2003) ^[7], Manipur is one of the most beautiful state

of our country and called as Switzerland of India by the 1st Prime Minister of India, Jawaharlal Nehru. In the west it is bounded by Cachar district of Assam, on the east by Myanmar (formerly Burma), on the North by Nagaland state, on the South by Mizoram state and Chin hills of Myanmar.

One of the oldest Sacred Groves in Manipur is the Konthoujam Lairembi Khubam which is regarded as "Sacred Place of Konthoujam Tampha Lairembi", a Goddess deity of Konthoujam village, Imphal West. This Sacred Grove is the absolute abode of Goddess Konthoujam Tampha Lairembi. In this abode A Banyan tree is still growing which is about three millennia years old (Google scholar). Some other popular Sacred Groves are Marjing Khubam of Heingang (Imphal East), Fayeng (Imphal West) and Mongba Hanba (Imphal East), Manipur is included under the Indo-Burma Hot Spot of the North East Region which ranked 6th position out of the 18 selected Bio-diversity Hot Spots of the world indicating high concentration of endemic species of plants (H. Tombi Singh 2003) [11] and rich in Bio-diversity consisting of a large number of Medicinal plants. Some medicinal plants of Manipur have been compiled by S. Sukumar Singh (2009) [8] and (H. Tombi Singh 2003) [7]. Earlier studies on Ethnobotany in Manipur on traditional healthcare by

numerous ethno botanist such as Singh *et al.* (2002) [9], Singh *et al.* (2003) [10]. In view of this, the purpose of present study is to record the medicinal plants available in three Sacred Groves in Manipur.

Materials and Methods

The purpose of the present study is to record the plants which are still growing at present in the three Sacred Groves namely Konthoujam Lairembi, Heinang Marjing and Thongak Lairembi. The latter two Sacred Groves are located at the hillocks of Heingang and Langol Reserve forest range. Their distribution in varied locations/ ecosystem not only helps in the conservation of a variety of valuable medicinal plants but also fostered rare and endemic animal species. However, little information is available on Sacred Groves and conservation of the biodiversity in Manipur, a state in Northeast India (Devi 2000; Singh 2001) [1, 11]. Regular visits at the three different Sacred Groves are done and recorded the local name, availability and their different botanical names. Meeting with the local people and discussion about the ancestral deities, about the protection of plants and links of the present society to the past in terms of religious cultural rituals. Table 1 shows the names of plants (local name and botanical name), type, availability in the three Sacred Groves and their ritual & medicinal uses.

Table 1: Showing the names of plants (local name and botanical name), type, availability in the three Sacred Groves and their ritual & medicinal uses.

SL. No	Local Name	Botanical Name	Type	Konthoujam Lairembi Sacred Grove	Heingang Marjing Sacred Grove	Thongak Lairembi Sacred Grove	Beliefs/uses	Medicinal use
1	Uchan	<i>Pinus cassia</i>	Tree	☑	☑	☑	Lighting of sacred fire	Rituals
2	Khonangtaru	<i>Ficus bengalensis</i>	Tree	☑	☑	☑	Medicinal	Bark is used in piles
3	Khongnangbot	<i>Ficus benjamina</i>	Tree	☑	☑	☑	Medicinal	Leaf extract useful in ulcer
4	Heinou	<i>Mangifera indica</i>	Tree	☑	☑	☑	Tied around earthen pot in worship	Unripe fruit is given in dysentery & diarrhoea
5	Saneibi	<i>Bamboosa arundinacea</i>	Bamboo	☑	X	☑	Medicinal	Boiled decoction of fermented shoot used in ringworm & meningitis
6	Kadam	<i>Anthocephalus cadamba</i>	Tree	☑	☑	☑	Wood is used in furniture	
7	Heirikhangoc	<i>Aegle mermelos</i>	Tree	☑	X	☑	Medicinal	Fruit is laxative
8	Chingthrao	<i>Bauhinia acuminata</i>	Tree	☑	X	☑	Medicinal	Decoction of bark & leaf is useful in asthma & Leprosy
9	Sana khonang	<i>Ficus religiosa</i>	Tree	☑	☑	☑	A sacred tree	Worship
10	Shamba	<i>Oroxylum indicum</i>	Tree	☑	☑	X	Associated with protection of spirits	
11	Mayokpha	<i>Terminalia arjuna</i>	Tree	X	☑	☑	Medicinal	Bark & leaf extract given in liver complaints
12	Tairel	<i>Toona ciliata</i>	Tree	☑	☑	☑	Used in rituals	
13	Nongleishang	<i>Xylosma longifolia</i>	Tree	X	☑	☑	A sacred tree, medicinal	Bark used for stomach pains
14	Theibong	<i>Artocarpus heterophyllus</i>	Tree	☑	☑	☑	Used in rituals & medicinal	Unripe fruit is astringent and ripe fruit is laxative
15	Langthrei	<i>Blumea balsamiflora</i>	Herb	X	☑	☑	Used in rituals & medicinal	Leaf extract with honey used in stomach ulcer
16	Heimang	<i>Rhus semialata</i>	Tree	☑	☑	☑	Medicinal	Fruits, leaves and bark used in dysentery juice of fresh plants

								is used in fever
17	Pungphai	<i>Dactyloctenium aegyptium</i>	Herb	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Used in rituals & medicinal	Juice of fresh plants is used in fever
18	Saitingkhang	<i>Cudrenia nepalensis</i>	Tree	<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	Used in rituals	Protected from evil spirits
19	Heikreng	<i>Celtis australis</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wood is used for cricket stumps, balls & hockey stick	Commercial
20	Heitroy	<i>Flacourtia jangomas</i>	Tree	<input checked="" type="checkbox"/>	X	X	Medicinal	Bark and leaves used in bleeding gums & tooth-ach
21	Asi heibong	<i>Ficus hispada</i>	Tree	<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	Medicinal	Leaves are used in ring worms
22	Manahei	<i>Terminalia chebula</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	Medicinal	Bark is diuretic, fruit in bleeding gums & tooth-ach
23	Tingthou	<i>Cynodon dactylon</i>	Herb	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Used in rituals, medicinal	Leaf extract stops bleeding
24	Khoiju	<i>Plectranthus ternifolius</i>	Shrub	X	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Used in rituals & medicinal	Smoke of leaves used in antidote of smallpox
25	Gulamjat	<i>Syzygium jambos</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Believed as incarnation of Soraren (deity)	Fruits are rich in calcium and vitamin B complex
26	Shamba	<i>Oroxylum indicum</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Decoction of leaves & bark used in general weakness
27	Kurao	<i>Erithrina variegata</i>	Tree	<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	Flowers are source of red dye	
28	Kuthap	<i>Clerodendrum indicum</i>	Shrub	<input checked="" type="checkbox"/>	X	X	Medicinal	Leaf juice used to eradicate thread worms
29	Urikshibi	<i>Vitex negundo</i>	Shrub	X	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Leaves and roots posses tranquilizing effect and use in piles and dysentery
30	Tomal	<i>Garcinia morella</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	A sacred tree by the Hindus	
31	Uthum	<i>Talauma hodgsonii</i>	Tree	<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	As source of wood	Commercial use in furniture
32	Heibi	<i>Meyna laxiflora</i>	Shrub	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Fresh leaves used as blood purifier
33	Shingkap	<i>Caryota urens</i>	Plam	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Broom making	Rope and Broom Making
34	Chaning	<i>Coix lacrima</i>	Shrub	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Seeds as ornamental
35	Kanghil	<i>Entada phaseoloides</i>	Climber	<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	Medicinal	Bark decoction used in stomach ulcers
36	Nongmangkha	<i>Phlogacanthus thyrsiflorus</i>	Shrub	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Leaves used in fever & cold
37	Koubilia	<i>Grevillea robusta</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
38	Tera	<i>Bombax malabaricum</i>	Tree	<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	Medicinal	Fruits used in snake bite
39	Khok	<i>Albizia sinensis</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X		Paper making
40	Laphu	<i>Musa paradisiaca</i>	Herb	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Unripe fruit used in dysentery & diarrhoea
41	Chahui	<i>Elaeocarpus floribundus</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Infusion of bark leaves - mouthwash & inflamed gum
42	Chahui	<i>Cassia fistula</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Bark extract useful in liver complaint & spleen enlargement
43	Heikru	<i>Phyllanthus emblica</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Fruits are given in diarrhoea, dysentery & anaemia.
44	Heijugag	<i>Juglans regia</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Bark, fruits & leaves used as tonic nervous disorder
45	Kekru	<i>Sapindus trifoliatus</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Used in epilepsy, asthma & hysteria
46	Neem	<i>Azadirachta indica</i>	Shrub	<input checked="" type="checkbox"/>	X	<input checked="" type="checkbox"/>	Medicinal	Leaves antiviral, used in pox treatment
47	Chingsu	<i>Tectona grandis</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	Medicinal	Leaf extract used in hysteria
48	Ushingsa	<i>Cinnamomum</i>	Tree	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Medicinal	Bark given in dyspepsia, cold

		<i>zeylanicum</i>						& vomiting
49	Tejjpata	<i>Cinnamomum</i>	Tree	☑	☑	☑	Medicinal	Bark & leaves used in gonorrhoea, rheumatism & snake bite
50	Heiribob	<i>Cytrus macroptera</i>	Tree	☑	☑	☑	Medicinal	Stone case
51	Uyung	<i>Quercus lamellosa</i>	Tree	☑	X	X	Medicinal	Roasted seeds used in diarrhoea & fever
52	Leihao	<i>Michelia champaka</i>	Tree	☑	X	X	Medicinal	Roots are used in gonorrhoea, dyspepsia & stomach trouble.
53	Heirang khoi	<i>Amura rohituka</i>	Tree	☑	☑	X	Medicinal	Bark is astringent used in liver & spleen disease, Abdominal complaints
54	Iphoot pambi	<i>Spathodea campanulata</i>	Tree	☑	X	☑	Medicinal	Epilepsy & convulsion control, urethritis
55	Shahi	<i>Quercus dealbata</i>	Tree	☑	☑	☑	Dyestuff	
56	Youngc-hak	<i>Parkia roxburghii</i>	Tree	☑	☑	☑	Medicinal	Bark extract given in diarrhoea & dysentery
57	Karpoor	<i>Cinnamomum camphora</i>	Tree	☑	☑	X	Medicinal	It has calmativ influence in hysteria & nervousness
58	Kegema-nbi	<i>Jatropha gossypifolia</i>	Shrub	☑	☑	X	Medicinal	Roots used against leprosy
59	Kanghil	<i>Entada phaseoloides</i>	Limber	☑	☑	☑	Medicinal	Bark decoction used in stomach ulcers
60	Heiyen	<i>Antidesma bunius</i>	Tree	☑	☑	☑		Fruit is edible

Results and Discussion

There are various types of trees and shrub which narrates mythological story in the Sacred Groves. Some trees are as old as in divine relation of God with the human. *Syzygium jambos* (Gulamjat) is believed as incarnation of Soraren, the King of Sky (current science). Some plants are used in rituals, some are in medicinal use and above all the three different Sacred Groves provide support various animals, birds and innumerable invertebrate species (M.L. Khan). Out of the 60 recorded plants 45 are trees, 9 shrubs, 5 herbs and 1 climber. 41 plants have their medicinal values, 20 plants are used in rituals related with religious worship and remaining 7 are used for other commercial uses. Many more research studies are required to assess all the plants found in the 3 Sacred Groves and other remaining Sacred Groves of Manipur. The tick mark ☑ in Table 1 indicates the availability and the cross mark (X) indicates the nonavailability of the assessed plants.

The reason for taking role in conservation of biodiversity by the Sacred Groves is that the local people inhabited around the Sacred Groves itself protected the plants along with the worship of Meitei deities. There are some other measures maintained by the local people for the protection of Plants like

1. Even plucking of twigs and flowers is a taboo.
2. It is believed that anyone offended to the entity of the grove, deities will punish by bringing illness or unfortunate events to him or her.
3. Collection of fodder, fuel wood, fruits and spices are strictly prohibited and in doing so multiplication of next generation by the seeds is fully established.
4. Women folks are restricted to enter the deities for particular time (personal).

The Sacred Groves of Manipur are one of the best mediums to save biodiversity, and these social boundaries help to

conserve the entire organism, both plants and animals as a whole, which stands for the concept of Sacred Groves. The Sacred Groves will also contribute in maintaining a healthy environment in this world.

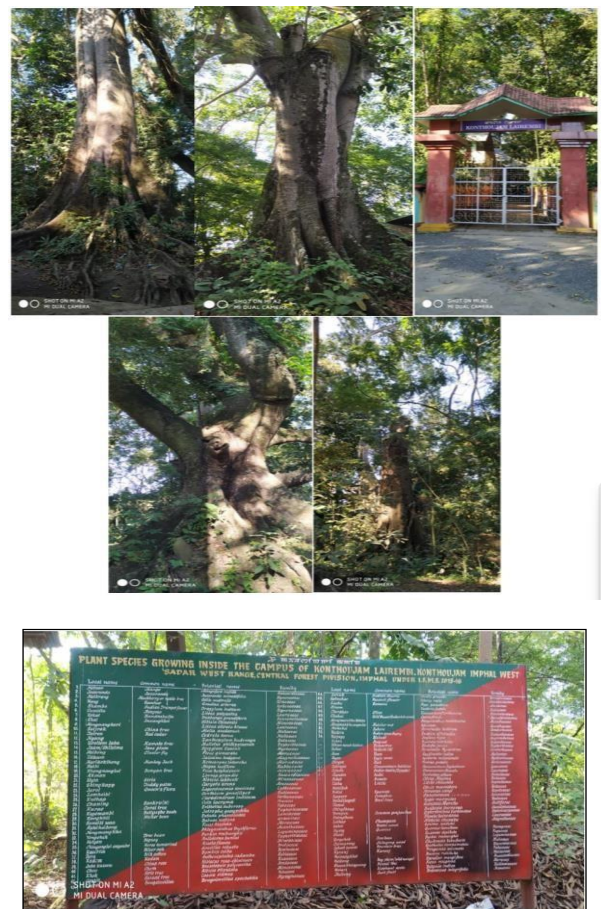


Fig 1: Photographs taken at Konthoujam Lairembi Sacred Grove



Fig 2: Photographs taken at Thongak Lirenbi Sacred Groves



Fig 3: Photographs taken at Heingang Iputhou Marjing Khubamlen Sacred Groves

Conclusion

Biodiversity is all the different kinds of life you will find in the area - the variety of animals, plants, fungi and even microorganisms like bacteria that make up our natural world. Each of these species' organisms work together in ecosystems like an intricate web, to maintain balance and support life. The Sacred Groves of Manipur are one of the best mediums to save biodiversity and these social boundaries help to conserve the entire organism, both plants and animals as a whole, which stands for the concept of Sacred Groves. As there is taboo in cutting of the trees, plucking of flowers, collection of fodder, fruits & fuel found in the Sacred Groves it becomes an important means of conservation of medicinal plants as well as other living organisms.

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