



## Society, religion and bio-diversity conservation in India.

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### Abstract

India has a diverse culture and Indians are very religious. Respect for nature and environment is common to all religious faiths. Large numbers of God and Goddesses are worshipped in India. Each one of them is associated with at least one plant like Goddess Laxmiji is associated with kamal and Lord Krishna is associated with Kadamba. Devotees offer prayers to them with these plants or their parts. There are also a lot of festivals and ceremonies celebrated throughout the year in different states in different manners. During these festivals and ceremonies different types of plants and their parts are required. This diversity of culture and beliefs in our country help in the conservation of many plants. The present paper discusses how religion helps in biodiversity conservation in India with special reference to sacred plants.

**Keywords:** Sacred Plants, Biodiversity conservation, Religion

### 1. Introduction

India is a vast country having diverse religious culture and traditions. It is also famous for its rich biodiversity. Our traditions and rituals are quite helpful in conserving our diversity of plants. Many plants are worshiped or have religious values. Fear among people of cutting sacred plants leads to their conservation. Indian religious beliefs have associated many of the plants with Gods and several plants are considered Gods themselves or Gods residing over them. Our ancestors started these traditions and now in modern times these old rituals have become helpful in conserving plants (Ahrwar, 2013; Brahma et. al. 2014, Sharma and Joshi, 2010). Today, when the population is increasing at an exponential rate and plants are being cut rapidly for construction of houses and agricultural land, these traditions have become a blessing in disguise to save trees from cutting. Modern man living in cities has become techno savvy and fails to identify even very common plants growing around him. These traditions then become more important to make him

familiar with the plant while offering it to God. These plants not only provide fruits, fibre, drugs etc. but also reduce pollution, purify air and bring rain. They absorb carbon dioxide gas from atmosphere for photosynthesis and decrease excessive heating of earth thereby decreasing global warming.

The present article discusses how society and religious beliefs helps in conservation of plants in India.

### 2. Unique tradition on tree plantation in some village

In different states of rural India, there are different ways of protecting trees. In many villages of Bihar and Rajasthan, there is a tradition of planting trees with the birth of a girl child with a belief that the planted tree will grow with the child and its fruits, wood and other products after sale will be helpful in education and marriage of the girl. In *Piplantri* village of southern Rajasthan's Rajsamand district there is a tradition of planting 111 trees with the birth of a girl child (Singh, 2013). In *Dharhara* village in Bihar's Bhagalpur

district a girl child's birth is celebrated by planting at least one mango tree (Biswas, 2013).

In many tribal areas of Bihar and Orissa, before cutting a tree, permission is sought from it with a promise that five saplings will be planted in return. These age-old traditions are vanishing slowly which needs to be encouraged by the modern man even in cities to safeguard the environment.

### 3. Plant conservation by sacred groves

India has a long tradition of conservation of all resources that are useful to people. Forests have been the lifeline for tribal and rural people since ages. For conservation of living creatures of forests, the concept of sacred groves is used in these areas. Sacred Groves comprise of patches of land from few trees to forests of several acres that are usually dedicated to Gods and Goddess or tree spirits. These spaces are protected by local communities because of their religious beliefs and traditional rituals that run through several generations. People believe that any kind of disturbance will offend the God, causing diseases, natural calamities or failure of crops. Sacred groves have been a traditional means of biodiversity conservation. None is permitted to cut any tree or plant, kill animals and birds, or do any harm to any form of life in this area.

The presence of sacred zones in biodiversity parks like Yamuna Biodiversity Park in Delhi is a mark of this old conservation method. Although, there has been no comprehensive study on the Sacred Groves / Forests of the entire country, experts estimate the total number of Sacred Groves / Forests in India could be in the range of 100,000 – 150,000 [6]. In some forests even the dry leaves, stem and fallen fruits are not touched. For example, the *Garo* and the *Khasi* tribes of Meghalaya do not allow any human interference in the sacred zones (<http://ecoheritage.cpreec.org>). In some zones, deadwood or dried leaves may be picked up, but the green tree or its branches are never cut. For example, the *Gond* tribes of Madhya Pradesh do not allow the cutting of tree but allow fallen parts to be used. Sacred groves in the hills of Garhwal and Kumaon are mentioned in old Hindu scriptures like the *Puranas*. *Shipin*, about 12 km. from Shimla is believed to be the biggest deodar grove which consists of trees that are hundreds of years old. Villagers in this area who pass through it dust their clothes to make sure they do not carry anything belonging to the grove. Trees in the area cannot be cut or felled and all deadwood found in the forest is used only in the temple, located in the grove.

Sacred Groves / Forests are classified as two types

(i) **Traditional Sacred Groves:** It is the place where the village deity resides.

(ii) **Temple Groves:** A grove is created around a temple and conserved.

### 4. Ecological significance of sacred groves

(i) **Conservation of Biodiversity:** The Sacred Groves / Forests are important repositories of floral and faunal diversity that have been conserved by local communities.

(ii) **Recharge of aquifers:** The groves are often associated with ponds, streams or springs, which help meet the water requirements of the local people. The vegetative cover also helps in the recharging the aquifers.

(iii) **Soil conservation:** The vegetation cover of the Sacred Groves / Forests improves the soil stability of the area and also prevents soil erosion.

### 5. Sikhism and plants

The naming of sacred shrines after species of trees is unique to the Sikh religion. Punjab's Sacred Heritage author D.S. Jaspal has compiled a pictorial documentation of 59 sacred Sikh shrines in India and Pakistan named after 19 species of trees in his book "TRYST WITH TREES". An example is Gurudwara Dukh Bhanjani Ber Sahib in Golden temple, Amritsar which is named after a *beri* tree, *Zizyphus jujube*, which is considered very sacred by Sikh community. Dukh Bhanjani Beri literally means "the tree of healing". It is located on the eastern side of the *sarovar* in the Golden Temple. The tree is associated with the legend of *Bibi Rajani* whose leper husband is said to have been cured of his malady by having a dip in the old pond which had existed here since ancient times. People have a strong faith that water in this portion of the tank will heal their ailments. To conserve the germplasm of this sacred *beri*, the technique of clonal technology has been used by D.S. Jaspal to produce more number of plants from this sacred tree. ([http://www.museumoftrees.org/sacred\\_garden.php](http://www.museumoftrees.org/sacred_garden.php))

### 6. Christianity and plants

In Christianity, many flowers represent many symbols of this religion.

(i) The main flower that means a lot in the Christian religion is the passion flower. This flower is mainly a symbol of Jesus' scourging, crowning with thorns and crucifixion.

- (ii) The archetypal flower symbolizes the purity and is associated with the Virgin Mary.
- (iii) The pomegranate is a significant symbol of hope and resurrection.
- (iv) Roses represent the prayers, wounds and sacrificial blood that Christ shed. White rose represent Christ's purity and the red rose represents Christ's sacrificial blood. The red rose also is the symbol of love (<https://plantsincivilization.wordpress.com/2009/04/16/flowers-in-christianity/>).

Pine and *Araucaria* trees are also of special significance to Christians. These plants are generally planted by Christians near churches and in their home gardens so that they can be decorated during different ceremonies and occasions like Easter and Christmas.

## 7. Islam and plants

There are several sayings from the Prophet Muhammad that relate the importance of trees and plants in Islam. Planting trees is regarded as an act of charity and the planter receives blessings from all those who benefit from it. Trees are treated with respect and are not unnecessarily harmed in this religion. The Quran also has numerous passages that describe the lush gardens and trees in heaven, highlighting their value not only in living world but their significance after death.

Pomegranates are specially mentioned three times in the Qur'an as one of the fruits that will be found in paradise, as a reminder of the nutritious provision from God and as a sign of His artistry (<http://khaleafa.com/value-of-trees-in-islam/>).

Nutritionally pomegranate fruit is rich in Vitamin C and iron with a calorific value of 65 (calories). It is a good source of sodium, riboflavin and calcium. Pomegranate plants also provide herbal medicines for diarrhoea, fevers, gum disorders and earaches.

## 8. Hinduism and plants

In Hindus several Plants have been traditionally considered sacred for the following reasons:

- (i) **Association with a deity:** For example, Bel tree (*Aegle marmelos*) is associated with Lord Shiva and Tulsi (*Ocimum sanctum*) with Lord Krishna.
- (ii) **Trees sheltering any object of worship:** *Sthalavrikshas* are actually the trees that shelters an open-air shrine, which is later replaced by a temple.
- (iii) Some plants are believed to have **originated from bodies or limbs of Gods**. For example,

the Flame of the forest (*Butea monosperma*) is believed to have originated from the body of Lord Brahma and the *Rudraksha* tree (*Elaeocarpus ganitrus*) rose from the tears of Lord Shiva.

- (iv) Plants with **socio-economic significance or a major role in the local ecology** are also considered sacred. For example, *Khejri* tree (*Prosopis cineraria*) by the *Bishnois* of Rajasthan is related to the crucial role the tree plays in the desert ecology. It provides the community with food, fodder and building material.

Sacred plants of Hindu religion are can be classified as Trees, Herbs and Grains. Some of them are as follows:

## 9. Sacred trees

- 9.1 *Ficus religiosa* (Pipal/ Sacred Fig tree): It is the state tree of Bihar, Orissa and Haryana. This tree is considered very sacred and people are afraid of cutting it. The tree is considered as an incarnation of Lord *Vishnu*. The tree also symbolises the continuity of life because the tree itself lives and grows for hundreds of years. It is said that Buddha achieved *nirvana* under this tree and it is considered a holy tree by Hindus and Buddhists. Due to this, the *Peepal* tree is also called as the *Bodhi* tree or the 'tree of wisdom'. It is also said that Ghosts reside on it. This tree is worshipped during *Vishnu* and *Pitra puja* in almost every state of India. Science says that *Peepal* is the only tree that produces oxygen in day as well as night. It is a CAM (Crassulacean Acid Metabolism) plant and is a hemi-epiphyte i.e. seeds germinate and grow as an epiphyte on other tree and when the host tree dies it establishes in soil. It is said that when they grow as an epiphyte they carry CAM and releases oxygen during night also but in soil switch over to  $C_3$  pathway.

According to the book of Ayurveda, *Peepal* leaves, fruits and bark are killers of diseases. The Tree has a cooling property. Licking honey placed on its leaves is believed to cure speech irregularities. Its leaves, when heated in ghee, are applied to cure wounds. Ingesting the bark, fruit and buds with different combination of things cures diseases related with bile, inflammation swelling etc. ([https://jaagruti.wordpress.com/2010/04/12/science-behind-religious-practices\\_3/](https://jaagruti.wordpress.com/2010/04/12/science-behind-religious-practices_3/))

- 9.2 *Ficus benghalensis* (Bargad/Banyan): It is our national tree and state tree of Madhya

Pradesh. The tree symbolizes the *Trimurti: Vishnu* is believed to be the bark, *Brahma*, the roots and *Shiva*, the branches. Banyan tree has 'aerial roots' that is, its branches drop to the ground, take root again, and send out more twisting, trailing branches. These represent matted hair of *Shiva*. Banyan also symbolises life and fertility in many Indian cultures. This plant is worshipped during *vat savitri puja* by married women in Hindu religion in U.P, Bihar and Orissa. Married women tie holy thread around *bargad* during puja and believe worshipping this tree will bring long life to their husbands. This is considered a pious tree and is not cut due to these beliefs. The twigs are used as tooth brush. The tree attracts a large number of birds, squirrels, insects, flying foxes and is a home for large number of creatures. Delicate Map Butterfly lay its eggs on the tender pink leaves. The leaves also attract squirrels. *Akshaya Vata*, the 'undying' banyan tree at Allahabad, is the subject of many legends, and still attracts millions of pilgrims. A group of three sacred trees, known as *tentar*, 'triad' - a banyan, a *Peepal* and *Paakar* - planted together, is especially sacred, and is known as *Harsankari*, 'the chair of Hari'. The fruits are eaten by many birds like bulbul, mynas and animals like flying fox. Leaves and twigs are favourite snack of elephants. It is an ornamental avenue tree. Its tough and elastic wood is used for making tent poles, carrying poles and yokes for bullock carts. It provides cool, refreshing shade on a hot summer's day [11].

- 9.3 *Aegelemarmelos* (Bel/Wood apple): It is the state tree of Puducherry. Leaves and fruits are offered to Lord Shiva during *Mahashivaratri*. We find the reference of this tree in *Atharvaveda*. It is considered a holy fruit and generally planted near Hindu temples.
- 9.4 *Cocos nucifera* (Nariyal/Coconut): Coconut is the state tree of Kerala. It is called *Kalpavriksha* or the 'wish-fulfilling tree'. The fruit is also believed to represent Lord *Shiva*, the three eyed God and the three black marks on the coconut shell symbolises his eyes. The fruit is considered very sacred and prayers are offered to many Gods with its fruit. It is an essential part of all the ceremonies of Hindus. Coconut water is considered pious and distributed as sacred water after *pujas*.
- 9.5 *Santalum album* (Chandan/Sandalwood): It is the

State tree of Karnataka. The wood of this plant is considered very sacred. It is an essential part of the Hindu temples and homes. The paste of the wood is applied on forehead in most of the religious occasions in Hindus.

- 9.6 *Musa paradisiaca* (Kela/Banana): It is worshipped by both unmarried and married women in many states of India. The whole plant is considered sacred. Leaves and fruits are used for many religious ceremonies like *Ganesh chaturthi*, *Grihpravesh*, *Satya Narayan puja*, weddings etc. The food is served on its leaves during many social and religious occasions. It is generally planted near Hindu temples.
- 9.7 *Mangifera indica* (Aam/Mango): It is the State tree of Gujarat and Maharashtra. The wood, leaves and flowering branches are believed to bring goodness and happiness to homes. Its plant parts are used in many religious ceremonies like marriages, *Grihpravesh* etc. throughout in India. It is grown for goodness and prosperity. In Gujarat, on the night of the seventh of the month of *Savan* (July-August), a young mango tree is planted near the house and worshipped by women to protect children from disease.
- 9.8 *Neolamarckia cadamba* (Kadamb/Kadam): The plant is considered very sacred because it is believed that Lord Krishna played flute under it. We find its reference in *Kalidasa* literature. In Southern India it is referred as *Parvati* tree. The tree is worshipped for wealth and children. It is also sacred for *Jain* community. So it is not cut out of religious belief or fear. The fruit juice is given to children to treat gastric irritability. A decoction of the leaves is good for ulcers and wounds. The fruits are edible. The timber is used for making pulp and paper, boxes, crates and furniture. The wood is also used as fuel.
- 9.9 *Bambusa bambos* (Baans/ Bamboo): The plant is considered very sacred and its stem is used for making *mandaps* for Hindu weddings. Bamboo flute is associated with Lord Krishna.
- 9.10 *Elaeocarpus ganitrus* (Rudraksha/Utrasum Bead tree): According to the old mythological epic "*Shiv Purana*", *Rudraksha* was the favourite tree of Lord *Shiva*. Its seeds are traditionally used as prayer beads by Hindus. Usually the beads of this tree are strung together as a garland. It is considered a very holy tree by Hindus and they conserve it. Rudraksha beads are the seeds of the fruit obtained from Rudraksha trees. Rudraksha

beads are covered by an outer shell of blue color on fully ripening, so they are also called blueberry beads and the sweet tasting fruitflesh can be used for treatment of various diseases. It is kept in water for a number of days and then Rudraksha is taken out after peeling off the pulp and brushing it clean. It is believed that the seed of Rudraksha contains the secrets of the entire evolution of the cosmos within it. Each seed also possesses from 1 to 38 vertical lines running down its surface, like the longitude lines on a globe. These lines are known as mukhi, or faces, and are natural formations of the seed. Seeds with one vertical line are known as Eka-mukhi (one facet), which are very rare; those with two lines are Dvi-mukhi (two facets), and so on. No other bead is considered to be as auspicious and powerful as a Rudraksha.

9.11 *Hibiscus rosasinensis* (Gurhal/China rose): The red coloured flowers of this plant are offered to Goddess *Parvati* during *Gauri puja* in Bihar, U.P, Bengal. Women grow this plant for its flowers.

9.12 *Ziziphus mauritiana* (Ber/Chinee apple/Indian Jujube): The tree is associated with *Lord Shiva*. The fruits are offered to Lord *Shiva* during *Shivaratri*. The *ber* fruit is also associated with *Sabari*, an old woman who is mentioned in the Hindu epic *Ramayana*. The tree is also considered sacred by the Sikh community. The Golden temple in Amritsar has a 'Ber' tree called the '*Beri Sahib*' in its central courtyard. The tree is also worshipped. The ripe fruit is very nutritious and is consumed raw. It is also used for making candies, pickles and used in desserts. The powdered raw fruit is eaten to cure ulcers, swellings in mouth, diarrhoea. The fruit juice is used to treat venereal disorders. The leaves of the tree are used as fodder for the cattle. A paste of the bark helps to cure boils and tumours. The wood is used for construction and for making agricultural implements. The thorny tree makes good fencing. The tree is also used as a host for the lac insect, *Kerrialacca* in India.

9.13 *Buteamonosperma* (Palash/ Dhak/ Tesu/ Flame of forest): It is the national flower of Jharkhand. The tree is worshipped by ladies on *Akshyatritya* in many parts of India. The flowers are offered to *Devi Saraswati* on *Saraswati Puja* in Bengal and *Devi Kali* on *Kali Puja* in Bengal. The dried flowers are used as a diuretic. The gum obtained from the tree is called Bengal Kino. It contains

tannin and is used in the treatment of diarrhoea. The seeds have anti-helminthic properties and are used in the treatment of worms. The wood is soft and durable and is used for making boats. A yellow dye, obtained from the fresh palash flowers is used during the festival of Holi.

9.14 *Madhuca longifolia* (Mahua/Indian butter tree): The flowers are offered to worship Lord *Shiva* in many tribal parts of Bihar and Orissa. It is considered a sacred tree for carrying out many ceremonies like marriage and worshipped on almost every auspicious occasion in tribal areas of Orissa.

## 10. Sacred herbs

10.1 *Ocimum* (Tulsi/Basil): This is considered most sacred plant among Hindus. The plant is worshipped as Goddess *Tulsi*. There are two varieties of Tulsi that are venerated - Rama Tulsi and Krishna / Shyama Tulsi (the dark- coloured) Tulsi leaves are offered to Lords *Ram*, *Krishna* and *Vishnu*. It is believed to purify the homes and ward off evils. Every house has at least one plant. *Tulsi* leaves dipped in water are distributed as sacred water after *pujas* in temples. Tulsi is a herbal remedy for various common ailments. The juice extracted from the leaf is given to cure fever, dysentery, skin infections, intestinal worms and to reduce vomiting. The stem is made into beads and used as rosaries by the Hindus.

10.2 *Nelumbonucifera* (Kamal/Lotus): It is our national flower and state flower of Haryana, Jammu & Kashmir and Karnataka. It is believed that Goddess *Laxmi* resides on its leaves. The flowers are offered to *Laxmiji* during *Deepawali* and *Laxmi puja*. The flower is also associated with Lord *Brahma* and *Vishnu*. In Buddhism, the lotus represents purity of body, speech and mind, floating above the muddy waters of attachment and desire. The *Bahai* community adopted the lotus symbol in the design of the *Bahai*, Lotus temple at New Delhi.

10.3 *Calotropis procera* (Ark/Rubber bush): It is a weed which is generally found growing on the roadsides. Its leaves and flowers are offered to Lord *Shiva* during *Mahashivaratri* in many states of India. Although it is a weed but due to its sacred nature people conserve it and holds a good example where we find a plant being conserved for religious purposes.

10.4 *Datura stramonium* (Datura/Jimson weed):

Devotees offer the fruits of this plant to Lord Shiva on *Mahashivaratri*. Although this grows as a weed throughout India, but during *Mahashivaratri* fruit sellers sell this thorny fruit like hot cakes. This is a very good example where we find weeds being conserved for religion.

## 11. Sacred grains/seeds

- 11.1 *Oryzasativa* (Dhan/ Rice): Rice is a symbol of prosperity in India. Rice grains are associated with Goddess *Annapoorna* by Hindus. There are many festivals associated with the sowing, planting and harvesting of rice like *Pongal* and *Onam* in South and *Bihu* in Assam. *Akshata* made of rice mixed with turmeric is used in many religious ceremonies of Hindus like *Rakshabandhan*, weddings etc.
- 11.2 *Hordeumvulgare* (Jau/ Barley): It is one of the important components of *hawansamagri*. It is used at the time of *Navratras* to produce small seedlings which is considered very sacred.
- 11.3 *Brassica campestris* (Mustard/ Sarson): Old ladies in villages mix its grains with chillies and put them in fire to ward off evil eyes.

## 12. Conclusion

The culture of India is so beautiful and diverse. The presence of so many states and so many religions makes it more beautiful. Every state has made one plant as its state tree because of the sacred reason or other reason. People living on hills and villages consider plants as a source of their livelihood. Rural people get their food, fuel, fibre and fodder from these plants. They utilise the plants in their fullest manner. They

make their houses with them, get fruits and food from them and use dried branches as their fuel. Villagers have associated one plant or other with some religion to save them from cutting.

There are several stories in the history of Indian culture where people have sacrificed their lives in protest of cutting of trees. One the most famous stories are of sacrifice of a *Bishnoi* woman Amrita Devi in Rajasthan over 300 years ago in protest of felling of *Khejri* (*Prosopis cineraria*) trees. This was followed in Uttarakhand hills where tribal people led by famous environmentalist Sunderlal Bahuguna hugged trees to save them from cutting.

In cities, the modern man is so busy with the daily routine that he has no time to look around and take care of the environment. These old traditions help in conserving the plants. In the modern times if a plant is used as a part of ritual or ceremony, in a way it is conserved. The religious beliefs are a beautiful method of plant conservation. We follow our customs and traditions and in turn enrich our environment with greenery and diversity of plants. Traditions and biodiversity conservation go hand in hand this way.

These beautiful and unique traditions make our country different from others. These traditions teach modern man that there are very simple methods through which we can conserve our biodiversity. The lists of the plants discussed above are very few in number compared to the vast biodiversity we have in India. There are endless rituals and ceremonies and endless list of plants associated with each one of them in India. We should preserve and encourage these rituals for the benefit of our better and a green future!

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