

## HOW INDIAN TRADITION PROTECTS THE ENVIRONMENT ?

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### Abstract

Traditional knowledge encompasses the body of knowledge, methodologies, procedures, and customs within a particular domain of inquiry that have been transferred to subsequent generations via religious convictions, folklore, literary works, ways of living, and customary behaviors. As the oldest civilization in the world, India contains a substantial repository of ancient knowledge that holds the ability to reshape and reconstruct India's trajectory towards prominence. The collective heritage of humanity is comprised of traditional knowledge, including information about crafts, arts, skills, and medicinal competence. India, a nation ranking as the seventh largest globally, possesses four of the most significant biodiversity hotspots worldwide, alongside a multitude of national parks and animal sanctuaries. The biodiversity of India contributes to the enrichment of traditional knowledge through its various flora and fauna. This review provides an insight on the role of Indian cultures towards conservation of ecosystem and their constituents.

**Keywords:** Indian tradition; The great Himalaya; Indian Vedic Literature; Flora and Fauna; Religion and Spirituality

### Graphical Abstract

Way of environment conservation through the various indian traditions and cultures



## 1.0 INTRODUCTION

The concept of traditional knowledge and resource use practice pertains to the shared information and beliefs that are passed down across generations through cultural channels [1]. The management of natural resources in traditional cultures is influenced by the cultural and belief systems of communities, with the ensured long-term sustainability. Moreover, the intimate connection between indigenous cultures and the natural surroundings serves to strengthen and enrich such cultures [2]. The significance of documenting traditional knowledge and the application of plants for diverse purposes is increasingly recognized as a crucial preservation measure for the benefit of generations to come [3]. Local communities have recognized the significance of indigenous knowledge pertaining to the usage of natural resources, including medicinal plants, as a vital repository of information transferred across generations. The acquisition of this knowledge has made a substantial impact on the healthcare systems of various developing countries [4]. The Indians have a long history of deep veneration and regard for the natural world, inherited from many different locations. The topic at hand has been greatly influenced by religious thought, customs, rituals, and belief. Environmentalism has been constantly embraced by Indian faiths (Figure 1). The proponents campaigned for the provision of instructions to the general populace, aiming to ensure a strong bond and a sense of inclusion within the natural environment. The believers were provided with instructions in the form of directives to perform specific rituals and ceremonies, which subsequently formed an essential component of their everyday routines. At times, the communication pertaining to the preservation and safeguarding of the environment is conveyed in a manner that is indirect or veiled. In the contemporary period, marked by a notable ecological imbalance and environmental degradation, it is becoming progressively imperative for us to grasp these customs. India has a well-established traditional culture known as 'folk tradition' which is linked to the utilization of medicinal herbs. This practice is deeply entrenched in indigenous beliefs and traditional knowledge [5]. Furthermore, the recognition of the significance of ethnobotanical knowledge in the pursuit of the objectives of preserving and responsibly utilizing biological diversity, as delineated in the Convention on Biological Diversity (1993), is widely accepted.



Kailash Parvat Puja



Soil Puja



Cow Puja



Vriksha Devta Puja



Tulsi Plant Puja

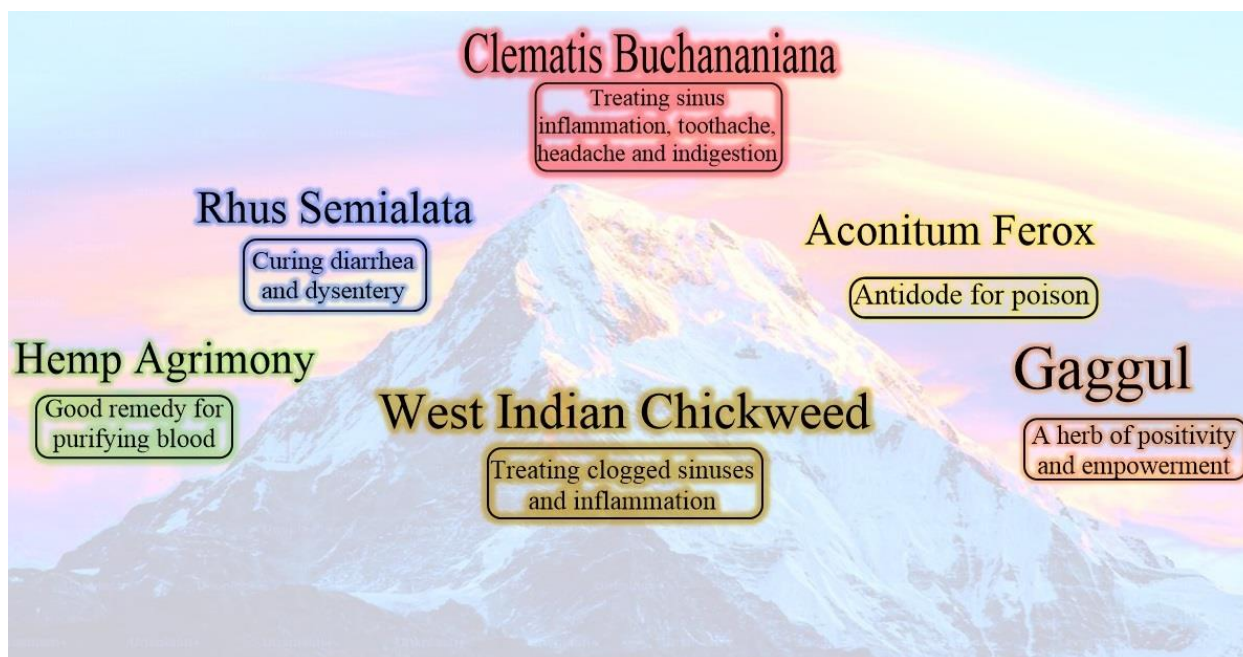


River Puja

**Figure 1.** Glimpse of Indian tradition which are directed towards the protection of nature

In contrast, the cultural diversity observed in the mountainous region of India, renowned for its high levels of diversity, displays a complex interdependence with biodiversity. This interdependence is characterized by a mutually advantageous association between the environment and cultures, as well as between ecological systems and cultural identity [6]. The veneration and regulation of the natural world have consistently exerted a substantial influence on human viewpoints about the conservation and conscientious utilization of natural resources. In the present environment, plant-based medicines play a crucial role in the process of healing and are considered to be the oldest forms of healthcare in human history [7]. In the past three decades, there has been a significant surge in the worldwide herbal medicine sector, particularly in the manufacturing and commercialization of herbs and herbal products [8]. In the context of India, it is believed that over two million traditional health care practitioners persist in employing medicinal plants for the purpose of treating a range of life-threatening ailments [9].



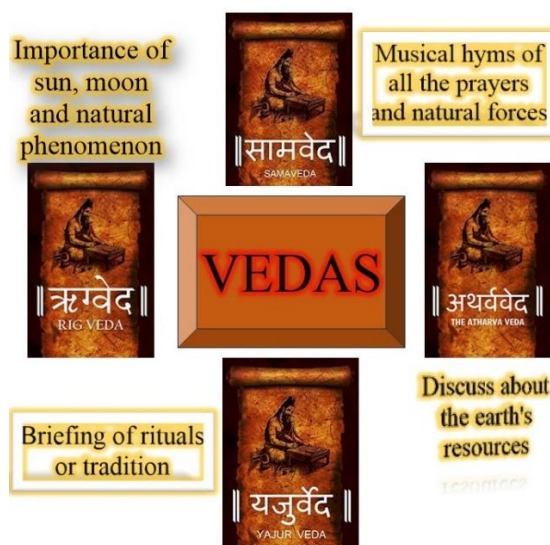


**Figure 2.** Several herbal plants which are found on the traditionally significant Himalayan

A diverse range of medicinal plants have been identified in the various regions of Himalayas, inhabited by multiple ethnic groups, each with their own distinct culture and traditional knowledge system [3]. According to Singh and Hajra's (1996) estimate, the Indian Himalaya is home to around 8,000 angiosperms, 44 gymnosperms, and 600 petridophyte species (Figure 2). A total of 1,748 species have been identified having medicinal importance by Samant, Dhar, and Palni in 1998 [5]. In addition, a significant number of valuable medicinal and aromatic plants have been spotted in the state of Uttarakhand. Although there is a progressive decrease in the comprehension of herbal medicines, some traditional herbal practitioners persist in utilizing a systematic and effective traditional healthcare system [12]. At present, the pharmaceutical industry relies on plant species sourced from their natural habitats, with a substantial proportion originating from the Himalayas [13].

## 2.0 CONSERVATION RELATED TO VEDAS

The act of conserving the natural environment may be historically linked to prior to Vedic era (Figure 3). The importance of natural resources and phenomenon like sun, moon, snow, rain, water, rivers, and trees are well documented in the Rigveda, one of the four vedas in vedic literature. They have been highly respected and venerated as creators of prosperity, wealth, and achievement. The deity Indra, linked to rain, has the greatest number of songs dedicated to him. According to the Atharvana Veda, the earth is seen as the maternal figure, with all other beings being considered as her offspring. The significance of nature is also emphasized in the Atharva-Veda, which has a magnificent hymn that praises the world [15]. The Yajur Veda explores the notions of propitiation and tranquility in relation to several facets of existence [16]. The Yajurveda has a noteworthy recommendation for humanity, advising against the destruction and pollution of celestial bodies. Moreover, similar to other Vedas, the Samaveda recognizes the importance of conserving the inherent patterns of seasons, which are vulnerable to disturbance due to climate change [17]. The Vedic ceremonies held tremendous significance in the veneration of the sun and many deities, like Surya, Martaṇḍa, Uṣa, Puṣan, and Rudra. Further, the Gayatri mantra, as mentioned in the Rig-Veda, is said towards profound reverence for the sun. Presently, it has been proven that solar energy serves as the predominant and essential energy source that regulates the movement of energy across the food chain, enables several nutritional cycles, and therefore exerts dominion over the entire Earth's ecosystem. Nevertheless, it is plausible that ancient civilizations also exhibited a profound comprehension and consciousness of this phenomenon.



**Figure 3.** Pictorial representation of Vedas related to its importance for the conservation of nature

### 3.0 CONSERVATION RELATED TO PLANT (FLORA) AND ANIMAL (FAUNA) SPECIES

Over the course of time, a multitude of plant (flora) and animal (fauna) species had been associated with various gods and were venerated accordingly. The significance of flora and fauna in ancient Indian tradition extends to the conservation and safeguarding of the ecosystem. In the past, trees, plants, and animals were considered to be living beings, and any harm inflicted upon them was deemed sacrilegious [18]. Additionally, the act of irrigating plants and trees is seen as a very gratifying practice in the Dharmasastra literature [19].

#### **Plant (Flora) species**

The scriptures also make reference to the adoption of a tree as a son, a practice that is documented in several Puranas as Taruptravidhi. The ancient scriptures contain references to trees like as Kalpavka and Parijata, which are believed to possess extraordinary powers (Figure 4). The devotion of the Pipal tree, formally classified as *Ficus religiosa* and alternatively known as the Boddhi tree or Asvattha in Sanskrit, has undergone a transformation into a widely embraced cultural tradition. The pipal tree held a respected position as the supreme tree in the Brahma Purana, resulting in its designation as the "King of Trees" [20]. From scientific point of view, the continuous emission of oxygen by the pipal tree led our ancestors to perceive this phenomenon within a spiritual framework. Additionally, it is noteworthy that specific trees such as Bael (*Aegle Marmelos*) [21], Asoka (*Saraca Asoca*) [22], Sandalwood, and Coconut hold a significant importance in many religious rituals [23].



**Figure 4.** Several Indian traditions regarding the flora which conserve the environment. Significant emphasis was attributed to the cultivation of particular plant species, like Padma (Lotus), Tulsi, and trees such as Vaṭavka (Banyan) or flame of the forest (Palasa in Hindi, *Butea frondosa*). Furthermore, it is worth noting that Durva grass (*Cynodon Dactylon*), Mango tree, Banana, Lotus, Marigold, China Rose (*Hibiscus*), and the Flowers of Milkweed (*Aak*, *Calotropis*) has religious significance as well [24]. The ancient Sanskrit literature known as the Manusmṛti offers a comprehensive classification of plants and posits that



specific plants possess the capacity to undergo pleasure and suffering, in addition to exhibiting consciousness [25]. In conclusion, the significance of trees and plants can be traced back to the Harappan civilization, and the emergence of the culture surrounding trees and plants in India can be related to three primary elements. Initially, the utilitarian value of plants and trees, encompassing their timber, foliage, and produce, rendered them highly important to humans. Furthermore, the notion that plants and trees were inhabited by ethereal entities that provided counsel to humanity during challenging circumstances. Finally, humans have cultivated a profound reverence for plants and trees due to their frequent utilization as viable medicinal alternatives. In contemporary society, plants and trees play a crucial role as a dynamic ecosystem providing oxygen and serving as carbon sinks on a global scale.

**Fauna (Animal species)**

Indian rituals deeply incorporate cultural, spiritual, and ethical elements, establishing a strong relationship between wildlife and environmental preservation [26]. The manifestation of the interconnectedness between living organisms, encompassing animals, and their surrounding environment is apparent across several aspects of Indian philosophy, religion, and daily practices. In Indian civilizations, specific animals such as cows, elephants, monkeys, snakes, and others hold a sacred significance and are sometimes associated with deities and considered heavenly. Furthermore, Indian literary works, including the Vedas, Puranas, and epics such as the Ramayana and Mahabharata, consistently underscore the importance of animals (specifically cows, peacocks, and elephants) in various contexts, thereby highlighting their crucial role in maintaining ecological equilibrium and their preservation. Although these conventional beliefs and practices play a role in fostering a cultural ethos of environmental preservation, it is important to acknowledge that current issues like habitat loss, poaching, and climate change necessitate a blend of traditional knowledge and contemporary conservation approaches to guarantee the long-term safeguarding of wildlife and the environment in India.

**4.0 CONSERVATION RELATED TO SACRED GROVES**

The historical prevalence of holy groves may be traced back to ancient times, and this tradition still observed in contemporary folk and tribal cultures [27]. A sacred grove refers to a collection of heritage trees that are commonly situated in the periphery of a human settlement. The trees in question have been undisturbed and conserved since the early settlers removed the adjacent forest in order to establish the village. These groves were regarded as the abodes of deities, spirits, or goddesses, and were thus protected with utmost care. Local residents partake in the ritual of making sacrifices and offerings to the deities in various sacred trees during festivals and other events [28]. The historical tradition of sacred groves might be likened to the contemporary notion of biosphere reserves and UNESCO's Man and the Biosphere program (MAB).

**5.0 CONSERVATION RELATED TO VARIOUS RELIGION AND SPIRITUALITY**

The ancient non-conformist sects of Buddhism and Jainism, as depicted in Figure 5, also advocated for the conservation of nature [29]. Religion espouses the fundamental tenets of tolerance, love, compassion, forgiveness, and non-violence in relation to every individual. Jainism advocates for the principle of Ahimsa, which entails the complete absence of violence. It recognizes the same importance of all living beings, including even the most minute insects or germs, and strictly forbids their annihilation through any means. Mahavira delivers the following teachings to his pupils regarding the environment in the Acharanga Sutra. As per Mahavira's perspective, the preservation of nature necessitates the implementation of measures aimed at curbing wastefulness, excessive usage, mistreatment, and pollution. By upholding these principles, we may effectively mitigate the degradation of our ecological system and preserve the resources that are universally available.



Figure 5. Several religions or community-based tradition for the protection of nature

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The medieval age witnessed the rise in popularity of several religious sects that actively advocated for the conservation of the natural environment [30]. The Bishnois, who achieved popular acceptance in a climatically hard region in Rajasthan, serve as a prime example [31]. The followers of the cult advocated for the prohibition of deforestation, as they firmly believed that trees are essential for fostering a joyful and prosperous environment. The Bishnois residing in Khejrli village, Rajasthan, exhibit a deep reverence for trees, as evidenced by the fact that 363 persons, spanning various age groups, wholeheartedly adopted the Khejri trees (*Prosopis Cineraria*) in order to prevent their felling by the king's military troops.

## 6.0 FUTURE PERSPECTIVE AND ASSOCIATED PROBLEMS

Indigenous knowledge, sometimes known as traditional knowledge, comprises a diverse range of innovations, practices, and traditions. The incorporation of traditional knowledge plays a pivotal role in addressing climate change, conserving natural resources, and enhancing the welfare of numerous individuals. Additionally, it contributes to the promotion of sustainable exploitation of biodiversity and cultural practices. The incorporation of indigenous traditional knowledge and educational practices is an essential approach for the conservation and protection of indigenous cultures, identities, and the environment. Moreover, this methodology facilitates improved educational achievements and contributes to the preservation of the environment and overall welfare. Traditional knowledge generally refers to bodies of knowledge that are firmly grounded in the cultural traditions of certain regional or local communities. Intellectual property regulations additionally serve to protect and promote traditional knowledge. Trade-Related Aspects of Intellectual Property Rights (TRIPS) was established with the primary objective of establishing and protecting intellectual property rights. On the other hand, the World Trade Organisation (WTO) is responsible for examining the interrelationship between intellectual rights, biodiversity, and traditional knowledge. *Three primary strategies have been devised at the global level to safeguard traditional knowledge:*

- Highlighting traditional knowledge as a manifestation of cultural heritage
- The safeguarding of traditional knowledge is a safeguard for the collective human rights.
- The WTO and WIPO (World Intellectual Property Organization) function as investigating bodies for safeguarding traditional knowledge.

*The various advantages factors are as follows:*

- India is a country rich in diverse information, traditions, and culture, which allows us to gain awareness of our ancient eras of wisdom.
- Indian traditional knowledge encompasses a wealth of information regarding environmental preservation, scientific advancements, space exploration, medicinal herbs, and more. By using this knowledge, we have the potential to regain our status as a global leader in knowledge and wisdom. Traditional knowledge also adheres us to remain well below the temperature limit set by IPCC (Intergovernmental Panel on Climate Change) (i.e. 2 °C; preindustrial era as we also saw that 2023 is the hottest year in the human history).
- It fosters a deeper awareness and comprehension of the knowledge, traditions, and practices of India.
- Acquiring knowledge about any culture fosters a strong sense of pride and self-worth, while also fostering a sense of solidarity within a community. In turn, these communities contribute to the establishment of harmony.

India possesses a wealth of information and culture. By gaining an objective understanding of India's traditional customs, individuals can explore how these teachings might be further developed and utilized to inform and benefit them in the future.

Traditional knowledge is an essential component of the cultural identity of the majority of local communities. The maintenance of a community's social and physical environment is of utmost importance, as it is a crucial component.

## 7.0 SUMMARY AND OUTLOOK

The considerable importance and value of traditional wisdom in addressing the current challenge of climate change within the environmental domain cannot be overstated. Without a question, the present challenges that mankind is facing in tackling climate change necessitate a reevaluation and modification of the robust scientific data that substantiates the phenomenon of human-induced global warming. Traditional knowledge refers to the practices and techniques used to manage natural resources and the environment, which are based on established knowledge. The revitalization of social processes pertaining to the generation, preservation, and transmission of traditional knowledge holds the potential to yield substantial effects by bolstering elements that hold relevance in the present period. India has implemented numerous ancient techniques to preserve the environment. In addition, it is crucial to formulate efficient tactics to safeguard the environment, culture, economy, and social customs. The primary objective of the project known as 'Ek Bharat Shreshtha Bharat' is to cultivate and enhance the understanding and appreciation of diverse cultures, customs, and practices across different states and Union Territories (UTs) of India. This practice will enhance the understanding and bond among the various states, hence strengthening the cohesion and coherence of India. Hence, recognizing the

prospective capacities of states and communities and providing them with essential technological resources can ensure India's progress towards prominence. India has the potential to become a global leader in climate summits, such as the COP (Conference of Parties) meeting, by incorporating our indigenous methods of tree and forest preservation into our governmental plans.

## 8.0 CONFLICTS OF INTEREST

No potential conflict of interest was reported by the authors.

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