

A STUDY ON THE ROLE OF TRIBALS IN PRESERVING THE BIODIVERSITY OF INDIA

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ABSTRACT

The management of natural resources in a sustainable development has become an important part for life survival on earth. Due to the ecological degradation and the loss in biodiversity there is a serious impact on our Nature. The environment is being supported by human survival in turn which conserves nature. Tribal groups who live in harmony with various elements of nature by the use of a range of traditional practices which involve culture, rituals, religious belief, customs, tradition and their heritage preserve biodiversity. Biodiversity is composed of various life forms such as plants that serve as an edible food in the form of roots, seeds, fruits, agricultural and horticulture plants. Some of the indigenous people preserve the resources by incorporating the traditional practices to increase the restoration of the environment. This paper will discuss the significant role played by the tribals in preserving biodiversity in India. This paper will show the importance of the tribals in preserving the plants as a matter of religious belief that they are the habitat of god and goddesses. It will describe the various traditional practices by tribes located in several parts of India and highlight on the cultural beliefs and practices of the indigenous people as part of heritage wherein it preserves biodiversity in a manner of environmental management and sustainable development.

Keywords: Tribals, Biodiversity, Culture, Traditional Practice, Nature

I. INTRODUCTION

The tribes are set to have a relationship with nature. The forest is mostly dwelled by the tribals who are known as Adivasi in India. Their association with nature has a huge role in the existence of the forest. This is also because they use the forest as a means of living and also to preserve them by performing various activities in a way of custom and profession which in turn conserve them. They also think of nature and biodiversity as their mother which is of a divine feature. Tribals look for the land as their pride. Nature is looked into in different ways by tribes which preserves the literature and different emotions of the tribals. The tribe equates their happiness in terms of nature. There are many tribal communities who play an important role in preserving biodiversity as their cultural practices. Various tribals in India such as the

Bishnoi, kani, jenu kuruba , and Bonds preserve the biodiversity of India. The Bonds are an ethnic group from the community of Koraput. They regard Kanta baunsuni as the principal God, who they believed to be a universal creator and who controls life and death.⁴⁰⁵ They believe that god resides on the saja tree and further protects those varieties of trees around the forest; this is why they are regarded as a community which preserves biodiversity. They ensure a complete protection of the tree and the use of those trees for various purposes associating the nature and the health.

Human nature can develop a lot of bonds between the environment. Tribals most of the time are seen as a backward community today but they are mostly known as a popular

⁴⁰⁵ Dr. Debashis Patra, *The Cultural History of the Tribals of the Koraput Region*, HEINONLINE, (Dec. 8, 2011, 9:55 AM), www.heinonline.in

community who are involved in preserving the culture in a sustainable manner from time immemorial. The tribals have been living in the forest where they do not harm the environment or extract any resources mindlessly. They treat the environment as a member and respect them which is rooted in their heritage as a plant-based knowledge or by worshipping them. It is an accepted fact that the tribes all over the world and especially in India have used their culture on the uses of plants on their own which mostly have been beneficial for various medical practices.⁴⁰⁶

It has also been addressed on various ethnic medicines by numerous herbs which are available around the forest regions where the tribal communities dwell. These plants are used as food and medicines to cure various diseases. The tribals have passed down this information to various generations. These have been used by the knowledge of the tribal and preserved them as a traditional knowledge. The tribal also develop their own traditional practices in the form of various knowledge which is unwritten.

The tribal communities mostly rely on the farming methods which have been traditionally practiced by them. Irrespective of the environment they perform the farming to maintain the soil health and use various fertilisers which are natural and cultivate the diverse crops to ensure there is food security. Many tribes also gather this as a primary source of food and preserve most of the wild fruits, nuts and herbs, which have been getting extinct by further preserving the biodiversity in India. The tribals also have vast knowledge about the seasonal changes and know how to optimise and maintain the sustainable use of these resources.⁴⁰⁷

II. **BIODIVERSITY IN INDIA**

Biodiversity is known as a variety of life forms in our ecosystem. The term biodiversity is a

formation of 'biological-diversity' which includes various species of organisms with different genetic variation within an area or planet. The biodiversity is greater near the equator due its warm climate and high productivity because of its terrestrial nature and has the richest tropics. The climatic condition and area of the region decides the richness of biodiversity. This inturn forms the flora and fauna, plants and animals respectively together. Biodiversity helps in the growth and discovery of drugs and improves the availability of medical resources. A major portion of various drugs have been discovered directly and indirectly from the biological resources available in our ecosystem by the tribals.

Humans are dependent on medicines for various purposes which are derived from nature and most of the pharmaceutical composition is taken from plants, animals and microorganisms. These include both modern and traditional practices in healthcare.⁴⁰⁸ India has a wide geographic area with a diverse ecosystem with tropical rainforest, desert and snow capped mountains. However, this diverse nature of biodiversity faces challenges and threats. There is constant pressure in the loss of habitat, urbanisation and over exploitation of the biological resources. The biodiversity in India is mostly affected because of pollution, climate change etc. Which are majorly affecting the tribals and inturn are tried to be preserved by them.⁴⁰⁹

The Atharva veda considers forests and the plants as home of the God and the goddesses which are worshipped by the tribals. In ancient India, people worship different forms and forces of nature which includes plants, trees and animals. This is how the nature which is prakruthi, and manifested in 5 forms known as the Earth, fire, water, sky and wind and all the

⁴⁰⁶ Madhav Manchanda, *safeguarding traditional knowledge: the role of intellectual property law in cultural heritage preservation*, Vol. 2, JLRIS, pg no 121-129, pg no 134, (2021).

⁴⁰⁷ Dr. Kaumudhi challa, *Recognising role of indigenous community in biodiversity conservation in India*, Volume XI, RLJ, pg no 89-98, pg no 91, (2023).

⁴⁰⁸ N Yuan, *The Traditional Medicine and Modern Medicine from Natural Products*, PMCNIH, (Apr. 29, 2016, 11:00 PM), <https://pmc.ncbi.nlm.nih.gov>

⁴⁰⁹ Ramesh, *Conserving India's Natural Heritage: A Legal Analysis of Biodiversity Protection and Management*, Vol 6, AFJBS, pg no 3039-3051, pg no 3045, (2024).

forms have been worshipped by the tribals in the ancient times.⁴¹⁰

All these forms have led to the formation of biodiversity and it has been broadly divided by the ecosystem in 3 levels which are known as the genetic diversity, species diversity and the habitat diversity. The tribal people depend mostly on nature and the biodiversity for their subsistence where they set up around their habit in a way. They also contribute to biodiversity for the growth and development and this happens vice versa. These habitual cultural practices may be with regard to agriculture bio-pesticides, forest products, fuels that provide a support system for the tribe for their growth sustainably. Therefore playing an important role in preserving biodiversity and having an ecological balance.⁴¹¹

III. TRIBALS AND TRADITIONAL KNOWLEDGE

The tribal regard of the society has a traditional interconnection with mother nature and therefore have various pragmatic knowledge in the day to day life.

There is a deep realisation in the traditional society that nature and men form a part of an inseparable unit according to the tribals and therefore they believe that they should live in partnership with each other. These are done by various practices safeguarding themselves and the biodiversity through the knowledge from various generations. The tribals have a well adverse traditional knowledge and their attitude reflects towards each organ in the area they live which includes the plants, animals, water bodies, Earth and the other resources in day to day activities which preserves the various resources.

Therefore, the agricultural practice as a form of their knowledge offers a new way, which provides a deeper conservation method to ensure that the biodiversity is preserved

sustainability for the future generation. Around the world the form of the agricultural practices differs from region to region to wet cultivation from a populated group to the other such practices are the integrated practices which have been adopted from the tribals to various parts of the world. There are also various recycling techniques which have helped to be adopted from the practices. This kind of setup has further preserved the energy efficiently for an economic output as well as the beneficial physiological condition.

A. **Traditional knowledge in Farming:**

Despite the introduction of various modern techniques of practices which are followed in agriculture or other productivity related resources it involves utilisation of more heavy dosage of fertilisers and pesticides which harm the soil and have an impact on the health of the human. But tribals have in various ways utilised the practices conserving the soil only through the organic wastage which preserves the soil and also does not cause any hazards to the human health. There are various traditional methods which have been practiced by the adivasis which conserve the biodiversity such as, Sangabadi tribe from Jaipur utilise the utera system they also use the seeds during the harvest and same time utilise it as a fertilizer for the animals which involve zero chemical. This helps a lot to preserve the biodiversity, soil and helps a lot of animals to breed in the land.⁴¹²

B. **Traditional Knowledge in medicine:**

Increasing diseases have led to an increase in advancement of the medicines in both pharmaceutical industries and traditional medical industries. This in turn has increased the technology to cure the medicines. But these kinds of medicines to cure certain diseases contain many chemical and other harmful side effects. These occurrences with regard to the side effects have a huge drawback in the health industry. In this regard tribal stands out as a strong root with the use of ancestral plant-

⁴¹⁰ Ramesh Chandra, *Indigenous People and Biodiversity Conservation in India: Scrutinizing a Symbiotic Relationship*, vol 10, AP, pg no 44-56, pg no 47, (2023).

⁴¹¹ R. L. S. Sikarwar, *Biodiversity of India: Tribal People and their Livelihoods*, UPSBDB, (May 22, 2016, 10:13 PM), <https://upsbdb.org/pdf/Souvenir2016/ch-1>.

⁴¹² Pooja Gupta and Farin Khatoun, *Traditional practices of tribal communities assist in environment conservation*, Vol. 2, HSS, pp. 21-30, pg no 24, (2022).

based medicine also known as the ethnic medicine which is believed to have practices relating to curing of diseases and preserving health as a use of indigenous cultural knowledge.

The Bodin tribals use the herbs, plants and roots of the same trees for health care. The tribe practices distinct varieties of treatment to cure different diseases using herbal medicines.⁴¹³ These are used to cure diseases from common fever, malaria, Jaundice to any other serious health diseases. They practice in a way that the resources for utilising or curing the diseases are not being depleted or which leads to endangerment of them. They practice and perform in such a way that these resources are sustainably preserved and utilized for the people.

C. Traditional Knowledge in Nature's element:

As we are aware that the forest and the tribe have a sacred relationship with each other and they coexist with each other. In nature, the tribals associate their existence with the land and the resources around them not only based on agriculture as a primary activity but there are various other elements in which they feel that nature is their mother and their divine entity. They feel that nature is personified in different ways. In various tribal literature they have the emotions which have been associated with the land resources and biodiversity around them. They measure happiness in terms of nature.

Some tribals regard nature with the relationship to agriculture as the main source of existence in which they preserve biodiversity through traditional practices. Some tribes preserve the herbs, plants and the trees by preserving agriculture and by utilization and curing health diseases. In the other way there are also places where the tribals live through the way of their cultural practices existing in those areas where they worship certain trees and preserve them

from years. Having a traditional heritage connected to it by various means with regard to nature's element the tribe has helped to conserve biodiversity.⁴¹⁴

IV. TRIBALS AND BIODIVERSITY IN INDIA

Tribals regard their home as the forest as they have a deep-rooted association with the nature around the forest. Their relationship with the forest has always been in harmonious nature for their whole life where they revolve and evolve their life in the resources based on forest. The tribal people mostly depend on the forest for basic livelihood. Ethnic groups preserve the forest in various circumstances depending upon the need. The tribal people preserve the culture and the biodiversity by various methods such as collection of non timber where it produces like gum, raisins, honeybee, leaves, fruits, fuel, wood, and other material requirements which are the basics for agriculture and household. They also have a unique knowledge with regard to these kinds of material and how to use them. These materials also help in various medical purposes. There are various tribes which use a special significant method to preserve these kinds of practices and further preserve their culture and biodiversity.

A. BISHONI TRIBE

The bishoni tribe originated from India in the state of Rajasthan and are known for their existence against the Mughal rule. They have a history which has been traced back to the 15th century. They were against the mughals under the leadership of maharaja Jai Singh. They are inspired by guru jambheswara ji who was preaching against killing animals and he promoted vegetarians.

The Bishnoi committee continued to live in the traditional way following a principle of vegetarianism and non-violence which protects their forests. The bishoni exact origin is unclear but there are to be the descendants of the

⁴¹³ Rajiv Rai, *Use of Medicinal Plants by Traditional Herbal Healers in Central India*, FAO, (May. 1, 2003, 7:15 PM), <https://www.fao.org>

⁴¹⁴ Dr Lakshman Patra, *The Role of Tribals in the Conservation of Biodiversity*, Volume 9, IJSR, pg no 1009-1024, pg no 1011, (2020).

Bhartrihari which is clan of the kshatriya. They are also related to the dynasty of the Gurjara Parithara dynasty, who ruled northern India from 7th - 14th century. The community members also originated from other parts of India as migrants including Madhya Pradesh, Uttarakhand, Gujarat and various other parts where there was war. And they have also settled in the nearby parts of Pakistan and Bangladesh. The Bishoni people speak bishnoi which is a style of Hindu Aryan language belonging to the Punjabi group.

The Bishoni tribe is primarily based on the agricultural community who rely on farming as a primary source of their income. They grow various crops such as barley, mustard, wheat in various regions where they live. They also have animals like sheep, goats, cows, camels to provide meat, wool and milk. Their agricultural tribe engaged in crafts also like poetry, weaving and embroidery and these have been passed from various generations which forms an important part of their culture and heritage. Jambheshwar gave training with regard to the desert as a basis to safeguard the ecological obstacles which includes the water deficiency, Soil erosions and the wildlife. This point of view had spread over the community and they highlighted the values of tree planting, water conservation and protecting the pets especially the black buck which is a spirituality to the bishnoi tribal.⁴¹⁵

The spiritual and cultural belief of this tribe is deeply associated with nature as their master jambheshwar said them with a strict adherence to non-violence, vegetarianism and the conservation of wildlife and wild animals. They play an important role in protecting biodiversity and their values shape in every aspect of witnessing a sustainable and an eco conscious state. These tribal environments are not just a source which can be manipulated but it is a spiritual component that needs to be appreciated and protected.

Their religious restrictions stop killing of animals and cutting down the green trees. They believe that this helps the living being and further preserve the local community including the endangered types of black buck, chinkara and the various bird species. The tribal members of 363 sacrificed their lives to protect the khejri tree which was considered one of the first environmental movements during 1970 . As there were the followers of their guru they were involved in protecting the life forms which they believed that if they protect the trees and the animals then the people who are dependent on that will in return be protected.

The ruler of Jodhpur maharaja Abhay Singh wanted timber to construct a palace. The soldiers were sent to the bishnoi village where the sacred tree of them was ordered to be cut in numerous numbers.⁴¹⁶ On September 11, 1970 Giridhar Bhandari, who was a representative of the king arrived to cut down these trees. The Amrit Devi bishoni, who was a village member of that tribal group spread this threat to her other fellow beings and attempted to prevent the soldier from stopping to cut the trees by hugging them and say ' if trees are saved even at the cost of one's head, it is worth it'. The bishoni tribe followed the Amrit Devi example and protected the sacred tree in the nearby areas. The soldiers ignored these concerns and 363 Bishnoi tribals were killed including Amrita Devi and her fellow beings. When the king had learned about the incident he immediately ordered the wood cutting to be stopped and he apologised for the deaths.

He also granted a protection to these tribes of that region that now is not applicable but in the non-human nature of the particular areas, which is now been protected by the legislation of the government. The king issued a decree on the copper plate stopping cutting the trees hunting animals within the village of Bishnoi and giving an honour to this sacrifice the Indian government established the Amrit Devi wildlife

⁴¹⁵ Raghav Sharma, *Bishnoi of India: Analysing changes and threats to their philosophies and livelihood*, JSTOR, (Apr. 1, 2021, 11:10 AM), www.jstor.com

⁴¹⁶ Amir Sohail, *The Bishnoi: Revisiting Religious Environmentalism and Traditional Forest and Wildlife Management in the Thar Desert*, ESP, (Jul. 18, 2024, 10:50 PM), <https://www.environmentandsociety.org/>

protection award in 2000. This was an act which showed selfless devotion to nature, trees and the biodiversity which was regarded as a culture for the Bishnoi; this was one of the earliest dedicated conservation efforts by the tribals in India.

B. **KANI TRIBE**

The kani tribe live in a forest of thiruvananthapuram of Kerala in the South of India. The tribe population ranges 1.8% of the total population in the Kerala district.

These tribes are traditionally nomadic communities where the traditional occupation of this community has been continuing from generations which includes handicraft such as making basket, mat and caneworks. They also are important figures in preserving the plants around the region. They also seasonally collect various products in the forest such as the honey, bee wax and they cultivate plants such as tapioca, banana, which are edible for their livelihood. This tribal community has a traditional structure that has a tribal chief who controls and coordinates the tribe known as moottukani. Traditionally, the moottukani consists of the role as a law giver, the protector and dispenses justice and also acts as a priest.

The traditional system of governance among the tribe has been eroded and the role of the chief has also existed. The kani in the present time live in several parts consisting of 10 to 20 families which are distributed among the forest areas of the thiruvananthapuram district. Though they are distributed they perform the same culture and practices which has been practiced by them for generations. Most of the areas where the tribes reside are now reserve forest according to Indian forest act of 1927. There is even a proposal which has been designated to regard these areas as a biological park known as the agastivanam biological park. These areas have been reserved such that no person has been permitted to enter this area except the tribal for this purpose as a significant issue has been raised by the Forest Department. The tropical botanical garden and the research institute (TBGRI) was established for the purpose of plant research which is an autonomous body or an institute that looks into the development of plants in the Government. One of the major aims was to carry out botanical and chemical pharmacological research and to identify the plants which have been used by these tribes as a herbal drug.

GRASP - EDUCATE - EVOLVE

This drug is used to cure a certain disease which is from the fruit identified as *Trichopus zeylanicus* which is found in the area they live. TBGRI investigated this to identify the active ingredients in this plant. TBGRI developed this and called it Jeevanii. They did this for the commercial purpose and gave the returns of 50% to the kani tribe for first to invent it. The main reason for sharing the benefit and recognizing their contribution is to establish the knowledge regarding the use of the plant by this tribe. Therefore the idea is to practice the good knowledge which is contributed by the tribe. The convention of biological diversity in article 8 (j) allows the contracting parties to preserve, respect and maintain the knowledge and the innovation, practices which have been followed by tribals or the local communities which are traditional lifestyles of them and conserve them in a sustainable way of biological diversity. It promotes a wider application where it involves such knowledge and the practices where equitable sharing of benefit arises with both the innovation and the practical utility. While carrying out this research few men from the kani tribe acted as a guide to the researchers during the trek. The researchers found that the tribe will constantly aid some fruits which keeps them energetic and agile during the time of the trek. When the scientists and the researchers themselves were exhausted. They also felt a sudden flush of energy and strength after eating the fruit. When asked about the source of the fruit the Kanni tribal did not reveal the same and said it is in sacred information and it's a tribal secret and it should not be revealed to the outsiders. Later they found that the fruit was called the Aarogyappacha. The researchers then collected some species of these plants and studied the property.

A detailed scientific investigation was conducted on this plant. By various levels of testing it to chemical screening, isolating it and various other pharmacological screenings, classical formula of pharmacological approach to study the herbal drug in isolation and understand the traditional practices used. Hence, another way was approached and they studied it through an Ayurvedic.

The researchers found and summarised that the fruit had belonged to a plant taxologically categorised under the *Trichopus zeylanicus* which has already been found by the researchers which were further traditionally used species which were not known. The fruit and the plant showed some anti fatigue properties that the tribal people had identified. The study revealed that certain glycolipids and nonsteroidal products produce antistress immunity when consumed. Further the last stage was developed by the TBGRI and drug jeevani was formulated with 3 other medicinal plants to increase the shelf life and purpose of clinical studies.

However, later they were provided with adequate licensing fees under the direction of the government. But at the later stages when the Jeevani was commercialised the kani tribe felt that their contribution had been undervalued. TBGRI has been researching and selling the plant for a very long period of time and for growing this plant there should be a specific appetite and there should be factors such as climate, soil and other microorganisms to develop the plant and for the survival of the plant. This plant now remains endangered and rather grown in the lab which has shown a lesser success rate for the institute.

The institute also used various other paths to develop the plant but the ongoing research has failed. Researchers said there is a threat to the Arogya pacha survival and there has been unauthorised collection of this plant. Apart from these the plant population of this variety is also declining and in fact it is growing in remote forest areas where human access is very limited. And further the tribal communities cultivate it in a harmless way but this initiative has changed the situation and the tribal community feels betrayed over the commercial exploitation of the plant.⁴¹⁷

C. **JENU KURUBA**

Jenu Kuruba are tribes from various parts of Karnataka. Jenu in Kannada means honey, kurba is the name of the caste of the tribe. Jenu kuruba as the name says they are known as the honey gatherer. They are traditional honey gathers and originally they are from the regions of the Western Ghats from the states of Karnataka, Kerala and Tamil Nadu. They live in a small place known as Hadi, where the main occupation is to gather the food from the forest and collect various small forest products including honey. The people from this tribe live in a semi nomadic lifestyle where there are no rulers, policies or forces or religious monetaries and techniques in their own discipline. They are maintained by the head of the tribe known as the yajaman. The Jenu kuruba tribe believe in a system where they associate their life with their connection to forest, wildlife as the God who lives there. This tribe is expert in the environment and have 25 names for different parts of the forest around them.

They gather medicines, honey, fruit, vegetables and bamboo needed to build their home. These tribes are famed for their honey collecting skill. They believed that the honey from their forest is very sacred and therefore they conserve them. Therefore their beliefs are preserved by careful management from environmental activities carried by them. They hence ensure a survival for even the tigers living in those areas.

A study which is conducted on the ways in which the honey is being collected by the jenu kurba tribe shows that there is a huge amount of land and there is a majority of people having the basic knowledge about the bees and the honey around their region from the age of twelve but it is difficult due to age and physical constraints. Therefore, they go to collect the honey only after they are large enough and strong enough. At later ages, they developed to learn it from their peers and go with them to know the skills and the knowledge by the time they are 18. The boys collect the honey from the hives and the tree branches or even the rocks for more than 130 feet above the ground level in a group of 3 or more people. The ways of cutting the honeycomb, catching the honey in the basket and making a smokey torch to reduce the sting are divided among the men and then collect honey at the nights when the bees are less aggressive. Men from the age of 40 and 50 usually stop collecting the honey but they continue to accompany the younger men in the role by advising them.

⁴¹⁷ Mala Chandrashekhara, *The Guardians of Nature: Traditional Practices of India's Bishnoi Community*, JSTOR (Mar. 11, 2024, 10:53 AM), <https://cultureandheritage.org/2024/03>.

Once the girl attends puberty they are refrained from collecting the honey because it's known to be sacred. The basic demand for the tribals is that they be allowed to plant forest trees and live and by promoting organic farming in various parts of the forest. Where they refrained from chemical laced crops and kept the honey bees at the Bay. The tribals feel it is the best way to worship the forest, wild animals and the people. The Jenu kuruba tribes are very important in managing the Forest Department by the practice they followed which enables them to coexist in the forest to live with the animals and conserve the biodiversity without any fear. The preservation of the honey bees establishes their culture and preserves the heritage of that particular forest and also preserves biodiversity. The Jenu kuruba regard the forest as mother and father and also that temple in which the life of their ancestors reside and are rooted with culture and heritage with plants and animals as their family and coexisting with them.⁴¹⁸

V. CONCLUSION

Tribals in India therefore play a pivotal role in preserving the biodiversity of India mainly by the mixed practices which have been carried on throughout the parts of the country. There are robust policies in implementing certain significant issues which have been faced by the tribal communities while preserving biodiversity as part of their culture. The tribal community's participation in biodiversity has improved in a substantial way over the years. India's biodiversity conservation efforts have remained significantly challenged due to globalisation and privatisation. And due to various tribal communities most of the region's sacred plants, animals and resources are still not excited and have been preserved as a part of their cultural identity. We can see that the tribal people have a long history of using various natural resources and have a deeper understanding of the complex resources, plants or the ecological system as a whole that exist as part of their own community. This knowledge has evolved to them over time and passed down from generation to generation and is important in knowing the importance of forest, wildlife and biodiversity.

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