



Traditional Ecological Knowledge and Pro-Environmental Behaviour in India: A Psychological Perspective on Sustainable Resource Management

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Abstract:

This paper explored the rich treasury of traditional ecological knowledge (TEK) preserved and compiled by local and indigenous communities across the Indian subcontinent. Rural folk have inculcated an earnest tradition of immense respect and veneration towards nature within themselves which remains absent in the materialistic urban populace. Ancient Indian scriptures detail alternative ecological practices which can be utilised to sustainably manage resources once they have been modified to become more functional at a larger scale. Reviving this age-old system of collective ecological wisdom through psychological techniques will help instigate a sense of reverence in the current generations and direct their focus towards the urgent need to conserve our natural resources.

Keywords: Traditional Ecological Knowledge, tribal communities, sustainability, ecosystems, conservation, indigenous knowledge, value system.

Introduction:

India is a rich and diverse country but if there is one common belief that every community residing in this vast subcontinent shares regardless of their religion, caste, creed, and region is their eternal devotion towards protecting and worshipping nature or 'Dharti Mata' (Mother Earth) as it's often called. Mankind has lived in harmony with nature, assuming a tradition of reverence for the constituents of the ecosystems, drawing sustenance from natural resources, and restoring the delicate balance as well. Practices that exhort reverence can be found in every religion ranging from Hinduism, Christianity, Islam to Jainism and Buddhism, ultimately proving the cross-cultural universality of immense respect for nature.

Indigenous communities have a treasure chest full of traditional ecological practices, humanistic values, and alternate perspectives on ecological conservation which are worth their weight in gold. City folk may regard their traditions as 'primitive', 'backwards', and plagued with superstitions, however, their

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unconditional love for the environment resulted in compiling centuries-worth of prized knowledge about the secrets of nature in the form of sacred scriptures and ritual texts. This sense of devotedness and harmony towards nature that tribal societies inculcate within themselves has become an essential aspect of the Indian value system which is reflected in our folktales, art, literature, and religious practices pervading people's daily lives.

Their ancient scriptures detail alternate knowledge about how to efficiently use natural resources and their by-products which have been carefully developed based on their local cultural practices. Living in crude social orders, every individual was required to gather precious knowledge about plants and animals to ensure their survival. These communities are living proof that there exists a diverse system of conventional ecological conservation techniques which can be utilized for sustainable ecosystem management in the 21st century. Modern scientists have shifted their focus to these age-old practices in monitoring and preserving our already degrading ecosystems.

These communities have also successfully curated a value system which is passed down every generation through their religious scriptures, ancient literature, folktales, and word-of-mouth. Such social mechanisms allowed rural communities to organize themselves for equitable distribution of resources, management of local ecosystems, regulating agricultural practices for yielding maximum results and internalizing their cultural values of worshipping nature. Their management techniques are based on a system of learning, overcoming obstacles and fixing their mistakes depending on the feedback they receive which helps them guide the direction of establishing concrete practices.

India is one of the most ancient civilisations in world history. There is a carefully developed body of knowledge called 'Traditional Ecological Knowledge' (TEK), which comprises traditional beliefs, practices, institutions, and systems devised and sustained by local communities in interaction with their environment that can be found across the subcontinent from the north-east to far south. The ancient writings of the Vedic time frame: the Vedas, the Samhitas, the Brahmanas and the Aranyakas-Upanishads contain numerous references to biological ideas. The Indian composition on medical practices, the Charaka-Samhita and the carefully written Sushruta-Samhita, shows that people during this period had comprehensive knowledge about botany and creature biology. These writings contain an arrangement of creatures based on propensity and territory, land as far as nature of soil, environment and vegetation; and depiction of plants common to different regions. Charaka-Samhita contains data that air, land, water and seasons were timeless essentials and depicted how contaminated natural sources can be detrimental to our well-being.

As global citizens, it is our prime duty and responsibility to protect and cherish nature which has been passed down to us from our ancestors in pristine condition, however, natural ecosystems across the globe are deteriorating at an alarming rate beyond the possibility of no return. Therefore, we should revert to traditional ecological practices and transform them to preserve ecological resources sustainably.

This paper attempts to peruse the reason for the wrecked connection between present-day man and nature, through the comprehension of the relationship man imparted to nature previously and how it moulds our everyday behaviour.



North India

North India is a broadly defined region that incorporates India's northernmost region. The Indus- Gangetic plain and the Himalayas, which separate north India from the Tibetan plateau and central Asia, are the region's most dominant geographical features.

Relevance of Ancient Indian Texts

Most ancient Indian cultures grew up in nature's lap, with religious zeal for all of its elements, including mountains, rivers, forests, and animals. D.B. Patra, (2016) says that the sanctity of various aspects of the environment and its conservation has also been expressed in Hindu scriptures such as the Upanishads, Srimad Bhagavatam, Puranas, Vedas, and Bhagavad Geeta. The Upanishads present a vision of cosmic piety and harmony with nature. The Vedic way of life was environmentally conscious. The ancient people used to strongly believe that for human beings to exist on Earth, there must be a balance between water, vegetation, and human life, so they consciously made a deliberate attempt to initiate the ultimate truth through sacred incantations in Indian philosophy, which were also articulated as rituals for repeated reminders of the need to sustain and foster ecological balance. The ancient Indians had a high regard for the environment and worshipped various manifestations of nature with zeal and sincerity. Tulsi, Neem, Pipal or Ashvattha, Bel, Vat, Sal, and Banana trees were revered not only for their religious significance but also for their medicinal value. The trees also represent the idea of fertility. Tree worship was most likely the earliest prevalent form of religion in India, predating the Vedic period.

The ancient literatures, such as the Vedas, Brahmanas, Aranyakas, Upanishads, Samhitas, and Upavedas, are replete with references to various aspects of the environment. Ecological wisdom can be found in the Vedic texts. The knowledge of seasons promoted agriculture among the early Aryans, and the Rig Veda mentions five seasons. It stated that no one shall destroy vegetation or kill animals. The Rig Veda's River-Hymn mentions up to ten sacred rivers. The rivers were so important and sacred to the Aryans that Punjab was known as the Sapta- Sindhavah or Seven Rivers. N. Krishna, (2017) says that the purity and quality of water were emphasised in the Atharva Veda. Pure water is said to cure a variety of ailments and act as a preventative measure against diseases that have not yet been contracted. Anand Kale, (2018) writes that sacred groves and gardens are the home of local flora and fauna, a veritable gene pool of animal, insect, bird and plant species and a mini-biosphere reserve, small packets of forests dedicated to local deities.

Henna leaves have an inherent ability to calm the mind and body, which aids in reducing stress on wedding days. Henna leaves are not only natural, they also prevent a lot of plastic and chemical waste that is used for packaging and making mehndi nowadays. Yagna is a sophisticated process used to purify the environment in ancient times. Agarbattis and ghee lamps are used to create a positive aura and they also purify the environment. The Vedic vision revolves around karma, which really is a duty to conserve the environment as an element of the man-nature relationship.

Traditional Agricultural Practices

Since ancient times, traditional agricultural practices have been an important aspect of food production in India. With special and sequence diversity, these approaches have the ability to reduce the negative effect of climate change. Since ancient times, traditional agricultural practices have been an important aspect of



India's food supply. With geographical and sequence diversity, these approaches have the ability to attenuate the negative effects of climate change. Double cropping, crop rotation, agroforestry, and the exploitation of local varieties and resources with host-pathogen interaction are some of India's most prominent traditional agricultural methods that must be strengthened in the interest of the environment and food security. By enhancing nutrition quality, such techniques play an important role in ensuring agriculture's long-term viability.

Water conservation is a critical component of any approach aimed at alleviating India's water scarcity situation. With rainfall patterns shifting practically every year, the Indian government has begun to investigate ways to resuscitate the country's old water gathering techniques. Water conservation is a critical component of any approach aimed at alleviating India's water scarcity situation. With rainfall patterns shifting practically every year, the Indian government has begun to investigate ways to resuscitate the country's old water gathering techniques.

Zings are miniature tanks found in Ladakh that collect melting glacier water. Water is transported from the glacier to the tank via a network of guiding channels. The glacier's melting waters begin as a trickle in the morning and turn into a flowing stream by the afternoon. The water is collected in the evening and used in the fields the next day. The equitable distribution of water in this parched region, which relies on melting glacial water to meet its farming demands, is the responsibility of a water official known as a Chirpun. Kuhls are surface water channels found in Himachal Pradesh's hilly regions. The canals convey glacial waters into the fields from rivers and streams. Rainwater, glaciers, rivers, lakes, streams (of different sizes), and springs are the principal sources of water in Kumaon. The Kumaon region is located in the monsoon belt, and its residents have learnt to collect rainwater, store it, and use it for a variety of purposes all year. As a result, a unique water harvesting society arose in this area. Himachal Pradesh is blessed with a variety of natural water resources that are used to meet the state's daily water requirements. Although the names of these resources/structures may differ, the goal of their use remains the same: water conservation.

Sayan Bhattacharya, (2015) writes that water is tapped from ghuls, or hill slopes, at great altitudes in the Himalayan region. These ghuls range in length from 1-15 kilometres and have a discharge rate of 15-100 litres per second. Ghul is a common harvesting technique in the Western Himalaya region, which includes Jammu, Himachal Pradesh, and Northern Uttaranchal. A cut is made in the stream during the construction of ghul, which is then expanded by a stone embankment, which is usually made of a pile of stones. With the support of trees and branches, it often carries on for several kilometres to reach the river.

The amount of variety among distinct resources varies depending on the structure's purpose, kind, and size. As a result, traditional water resource technology and engineering differ depending on whether they must offer drinking water or can be utilized for other reasons as well. Smaller, sometimes covered, and with steps leading down to the water, those used for drinking water are the most common. On the other hand, irrigation systems, which are distributed across broad open regions, have a network of canals for water delivery. Village elders have established different norms in this regard. They forbid anyone from submerging the container in water or washing clothes near the main water supply. Aside from that, no shoes are allowed in the baudi/nawn area. The task of cleaning these structures has been placed fully in the hands of community members. The locals clean them on a regular basis, either by emptying all of the water or by employing chemical agents. A unique breed of little fish known locally as donka is thrown in water structures to limit



the growth of insects and fungi. Locals claim that the movement of fish in water maintains the baudi/nawn clean by preventing the establishment of fungi. In addition, scraping the fungi on the internal surfaces of the structure with banana (*Vitex negundo*) leaves or coconut peels is another indigenous method for cleaning the baudi/nawn.

These water and soil conservation techniques are also important because they are not just conserving the natural resources but at the same time not harming by polluting nature. As nowadays the use of pesticides, fungicides, weedicides, insecticides do a lot of harm to the environment.

Northwest India

There are different types of resource management techniques practised by local communities residing in Northwest Indian states such as Rajasthan, Punjab, Haryana, etc, which contribute towards ecological conservation and ultimately, sustainable management of ecosystems.

Rainwater Harvesting Systems

The topography of barren states like Rajasthan and Gujarat have been significantly transformed by their ancient water conservation systems. Rajasthan is a region plagued with erratic weather, especially scorching heat, and severely lacks any perennial rivers which results in numerous problems related to water supply. Consequently, the rural communities are heavily dependent on traditional sources of water such as tanks, ponds, lakes, community wells, man-made tanks, and rainwater catchment areas.

Village ponds or Nadis are mainly found in Jodhpur and Rajsamand districts. They are constructed by creating embankments along natural depressions adjacent to rainwater catchment areas and are generally used for storing water for livestock. They are able to provide water for two months to a year at most. The only setback of constructing communal ponds is the high rate of evaporation resulting in loss of water due to their large surface area exposed to direct sunlight (C.P.R. Education Centre, Chennai, 2017).

Man-made tanks known as Jhalaras are rectangular in shape with a flight of stairs on either side and are mostly used for communal bathing, religious festivities, and irrigating agricultural fields, for example, Maha Mandir Jhalara. They are sustained by water coming from lakes situated upstream. Small tanks or Tankas are underground tanks that are intricately decorated and constructed using tiles to keep the water cool during hot weather. These are usually found in the courtyard of massive and openly constructed houses and reserved for drinking purposes only. On the other hand, bigger tanks are also constructed in a rectangular or square shape with massive walls on each side. They are supplied by a system of canals which direct water from rainwater catchment areas to these tanks which can store substantial amounts of water. Instead of solely using these tanks for irrigating fields, they have been transformed into multipurpose units which serve numerous households (C.P.R. Education Centre, Chennai, 2017).

Lakes or Talabs are reservoirs of water constructed by villagers in natural valleys using lime masonry for its walls generally found in Mewar and Udaipur. They are used for providing drinking water, irrigating fields, water for cattle, and once the riverbed has dried up, it can be repurposed as agricultural fields for planting food crops. A small lake is called a Talai, a moderately larger lake is called a Talab or Bandh, and a massive lake is known as a Sagar or Samand. Community wells locally known as Baoris, found in Bundi and Jodhpur, which have been constructed by the Nomadic communities of Rajasthan called Banjaras to



store water essentially for drinking purposes. They are an excellent example of sustainably managing water resources as they can store water for longer durations, utilize less money and space, and have a minimal rate of evaporation which helps preserve water. They are supplied by nearby lakes or rainwater catchment areas (C.P.R. Education Centre, Chennai, 2017).

Stepwells known as Baolis or Vavs dot the landscape of semi-arid regions of Gujarat such as 'Rani-ki-Vav' of Patan and 'Adalaj Vav' of Ahmedabad. They are complex architectural structures built with a stairway leading downwards to an underground aquifer which is supplied by harvesting rainwater (Piplani & Kumar, n.d.) The water levels above ground were susceptible to higher rates of evaporation in contrast to water levels lying underground which could provide water for drinking and agricultural purposes all year round. They were often embellished with paintings and sculptures of deities and came to be regarded as monuments with socio-cultural importance. Thus, as groundwater levels in India are depleting rapidly, these traditional rainwater harvesting systems can be repurposed at a larger scale to provide extensive amounts of water for rural villages dependent on tanks and ponds.

Traditional Food Grain Storage Practices

Agriculture is the mainstay of the Indian economy and a majority of food grain production is dependent on small-scale farmers who belong to diverse backgrounds and inherit cultural knowledge from their ancestors and their own field experiences. Local farmers are closely involved in deriving alternative practices of planting seeds, harvesting crops efficiently, and storing grains using available resources and creating a treasury of knowledge for future generations of agriculturists. They are capable of developing simple yet effective technology to manage and conserve natural resources. Traditional knowledge is characterised by utilising locally available resources to develop sustainable, labour intensive, low-risk, and environment-friendly techniques (Dhaliwal & Singh, 2010). These practises can be optimised for large-scale agriculture and food production once they have been scientifically approved by experts.

Farmers often resort to using indigenous tools or structures for storing food grains such as Bukhari, Kupp, and Bharola. Bukhari is a square structure made using mud, bricks, or cement with an outlet near the bottom. The upper portion of this structure is covered with polythene to retain moisture. Bharola is an egg-shaped structure which can hold up to 40-80 kg worth of food grains. It is a portable storage unit. Kupp is constructed using cotton sticks held together using mud or rope in a cone-shaped or round structure which ensures that rainwater doesn't seep into the storage portion and affect the crops. It mainly stores wheat straws (Dhaliwal & Singh, 2010).

To avoid infecting their wheat grains with pests, farmers usually place matchboxes in these storage structures as they believe matchboxes have a repellent effect on these pests. They also use Neem leaves to protect their harvest by rubbing them along the boundaries of the Bukhari before storing wheat grains as neem leaves have insecticidal properties. Farmers sift their wheat grains using locally made farming equipment called Chajj which helps separate whole food grains from diseased, broken, or severed grains once they have been properly dried under direct sunlight. This practice reduces the risk of pest infestation as well. Wheat grains can also be stored in gunny bags to avoid the infestation of two highly common pests- Dhora and Khapra. The gunny sacks retain little to no moisture which prevents any disease from infecting the harvest (Dhaliwal & Singh, 2010).



Other grains such as Moong and Moth beans are stored after being thoroughly mixed with a layer of ash in a Bukhari. Sometimes, lentils are also mixed with mustard oil as it makes the surface of the grains slippery enough to avoid pest attacks. Grains can be coated either with mustard oil or melted butter then coated with a layer of ash or red earth. Storing vegetables such as onions and garlic in well-ventilated storage spaces prevents fungal infections due to lack of moisture (Dhaliwal & Singh, 2010).

Northeast India

North-Eastern India possesses a rich and vibrant culture that reflects the true meaning of the phrase 'Unity in Diversity'. It is also popularly known as the 'Seven Sisters', which includes Sikkim, Arunachal Pradesh, Manipur, Mizoram, Assam, Tripura, Nagaland, and Meghalaya. These states are recognized under the North Eastern Council. The Economy is purely Agrarian. The traditional practices include Jhum Cultivation which is still practiced by the locals and traditional tribal groups even after the advent of industrialization in extreme terrains.

With the introduction and advancement of the 'Look-East' policy, the administration is making constant efforts to push towards organic farming, plantations, and terrace farming, while trying to eliminate the practice of Jhum cultivation due to its negative impact on ecological balances and reducing land cover.

Indigenous Knowledge of Tribal Communities

The ethnic and tribal population of India accounts for 430 Tribal communities out of which take up residence in hilly regions of Northeast India, majorly in regions of N.C. Hills and Karbi Anglong Districts in the state of Assam. A few Native people in the North east would include Assamese, Bengali, Bishnupriya Manipuri, Chakma, Bodo, Dimas, Garo, Karbi, Kuki, Meitei, etc to name a few. The traditional healers believed in mind-body relationships. The traditional healer can be defined as "someone who is recognized by the community in which he lives as competent to provide health care by using vegetable, animal and mineral substances and certain other methods based on the social, cultural and religious backgrounds as well as the prevailing knowledge, attitudes and beliefs regarding physical, mental and social well-being and the causation of disease and disability in the community" (Ramashankar et al., 2012).

They used natural methods of treatment since they believed and respected the nature around them. They were taught by other healers or their ancestors and this legacy continues even today. They worshipped nature and believed that they must obey them and any harm caused to nature may result in an imbalance in the ecological system. Traditional healing practice views the universe as operating according to natural laws that manifest according to specific rules and correspondences. The herbalist is common in every state of northeast India and is required to analyse and endorse medications for regular diseases and ailments, to prevent and to alleviate misfortune or evil, to protect against witchcraft and misfortune, and bring prosperity. The diviners are most common in remote villages of Assam and Arunachal Pradesh. They examine the cause of each event and interpret the message of the ancestor.

The natives have in-depth knowledge about plant species and a comprehensive understanding of the ecological interactions of different sections of their resources. Their knowledge and understanding have to lead to dependence on their traditional culture, local belief, folklores, and valuable knowledge of ethnobotanical importance. The traditional healing practices are classified into types based on the financial



aspect like Commercial Healing systems, Semi-Commercial Healing systems, Subsistence-based Healing systems, and Humanity-based Healing systems. For example, some plant species used in Arunachal Pradesh are, Chirata for Malaria & fever, Marshang for toothache, in Assam, Bael for heart disease, Siju for cough, in Manipur, Yensil for Abdominal pain, Leteku for constipation in Meghalaya, Minamkachi for leprosy, in Mizoram Thing-khawi-lu for Chest pain, In Nagaland, Kati for snake bite, in Sikkim, Avijal for headache and dog bite and in Tripura, Tender leaves for irregular menstruation.

India produces 136 species of Bamboo out of which 28% of bamboo plantations happen in North East India. (Pande et. al. 2008.). Bamboo is a necessity for the people of the northeast. Be it for business purposes, it has export value with its variety being grown in North-eastern states or being an essential part for the people in their day-to-day activities. It either grows in forests or private lands, groves, or plantations. The housing sector of the seven sisters highly depends on Bamboo. The topographical conditions affect it too, it is a very heavy rainfall region with rainfall up to 2500mm in some areas, and the Brahmaputra and its tributaries contributing to the flood-like situations. Since immemorial times, the traditional artisans and constructors depend on Bamboo. It provides great strength and can be moulded into any shape or size. Houses in these regions are classified into 3 categories, Houses on plains, houses on Mountain slopes, and mountains on elevated platforms. They also used Bamboo as their utensils which reflects its qualities like durable, biodegradable, easily available can be moulded into various shapes and sizes, etc. some of the famous Bamboo utensils used for cooking are used by the Mizo tribe as a storage utensil, Udu a basket used by Galo Tribe of Arunachal Pradesh, Epo Bamboo mat used by adi tribe.

Traditional Agricultural Practices

Crocklin (1961) described shifting cultivation as the use of human labour, use of stick or hoe, short periods of soil occupancy alternating with long fallow periods. It served as an economic mainstay for the region. The term shifting cultivation refers to a certain method of farming where the land is widely used to cultivate crops for a few years, then allowed to lie fallow for several years after which it is reused again. The practice is characterised by a cultivation phase, which involves clearing of primary or secondary forest and crop cultivation for one to three years, followed by a fallow phase, during which cultivation is suspended to allow recovery of soil fertility (Karthik et al., 2009). The Forest Survey of India estimates 1.73 million hectares of land under shifting cultivation.

In the Himalayan region in the eastern part of India, shifting cultivation is popularly known as Jhum Cultivation among the tribal groups and its native people. Jhum cultivation is the oldest form of cultivation and depicts the transformation from Food gatherer to food cultivator. The area available for Jhuming accounts for a total of 26.96 lakh hectares according to the Economic Survey of India. Its state-wide division is Arunachal Pradesh has 2.48 lakh hectares, Assam has 4.98 lakh hectares, Manipur has 1.00 lakh hectares, Meghalaya has 4.16 lakh hectares, Nagaland has 6.08 lakh hectares, Tripura has 2.21 lakh hectares. Shifting cultivation is stated to be one of the unsustainable lands that makes use of contributing drastically to environmental degradation.

Transferrable cultivation can make a contribution to weather, biodiversity loss, decreased wooden supply, flooding, siltation, soil degradation, and the wooded area plant life from number one to secondary and in the end to grassland. Slashing and next burning are preconditions for Jhum cultivation.



Slashing of plant life for cultivation is performed all through January-February. Shifting cultivators can also add their own surprisingly evolved information and knowledge of their nearby environments and of the vegetation and local plant species they exploit. Shifting cultivation is a land-use exercise that displays indigenous information accumulated through centuries of trial and error, problematic stability among product harvest and ecological resilience, and an excellent diploma of agro-diversity.

Central India

Through ages, India has inherited the rich tradition of love and reverence for nature, and gradually nature has become an integral part of our culture, as it is reflected in a variety of traditional practises, religious beliefs, and so on. India is a country where most of the tribal communities are nature worshippers such as people who believe that spirits reside in nature. They believe that spirits protect the environment and such tribal communities conserve and preserve their environment through traditional knowledge and wisdom as well.

Worshipping Nature

Indigenous people associated sun, moon, trees, thunder, etc to gods and goddesses. People worshipped the sun in the form of gods like Surya, Martanda, etc. The worship of the pipal tree became a folk ritual as they believe that such trees are associated with gods and were worshipped accordingly. There were so many songs, festivals, rituals on Mother Earth and the feeling of togetherness and harmony between man and nature in tribal societies.

Many people believed in a tradition of sacred groves in ancient times, which is still practised by tribal communities. Such groves are regarded as the places of gods and cutting of trees and destroying of groves are strictly prohibited, and leather products are not allowed in such places and temples as well. In the Jashpur and Sarguja districts located in Chhattisgarh, there are groves known as Sarna and Mandar, which are present in almost every village in these districts. These tribal people often worshipped such groves for plentiful rain, virtuous health and profitable harvest.

Sadashiv Gorakshkar, (1988) writes that bulls, buffalos, cows, dogs, elephants, peacocks, ants, snakes, and tigers are considered as sacred animals in Maharashtra. People believed that these animals are associated with their religious gods. In other states from central India as well, animals are considered as gods in our culture and give pride and respect to them. Example; snakes are worshipped by our saints and cows, which are considered to be very valuable animals. People used to drink cow's urine because they believed it as an elixir.

The society of Odisha understood the significance of water and built magnificent temples. Tirtha means a ford and now comes to mean holy water. These people often believed that taking a dip in holy or purified water will absolve sins. There are many famous temple tanks in Odisha as well. For example, Koti Tirtheswara temple whose tank is believed to be a merged of ten million sacred pools. Over the years, people explored the collection of practises and used patterns of various ethnobotanical species, different institutional set-ups, beliefs and practises to establish concrete knowledge about sustainably managing natural resources.



The local communities of Odisha worship the Banyan tree with reverence as it a symbol of a prosperous life and an important part of their culture. Believing in rituals like the wedding of two trees. People celebrate this auspicious occasion at Balia village in Balasore district of Odisha, where the groom is a Banyan tree and bride, a peepal. They believe Banyan tree to be a manifestation of lord Narayan and Peepal tree as goddess Laxmi, and worshipping them brings immense peace and joy to the local communities.

Tribal communities such as Gond and Mawasi inhabited in the Pachmarhi Biosphere reserve which harbours some of the thick forests in Madhya Pradesh which provided adequate opportunity to all the inhabitants for observing and scrutinising the various plant species to enhance their own traditional knowledge in order to contribute something to the biosphere in need through their traditional practises. These tribes had already set up home gardens and established sacred groves at different locations. Beside conservation, they have evolved knowledge on soil and water conservation like crop rotation, planting forestry species and making land boundaries. The tribes still followed the traditional way of picking fruits in order to minimise the huge impact of modern machinery and techniques which have a side effect on them.

South India

Viswanathan, P K & Ananthakrishnan, Sajitha. (2021) The traditional ecological practices in the southern India have been growing in a vast way – different parts of southern India are taking initiatives for conservation of nature. The main aspect that inclines the conservation practices of southern India is in assisting development of tools and guidance to understand the relationship between various cultures, climate change, and management of ecosystems around the world, which would ultimately strengthen the role of government authorities over ecological conservation.

Traditional practices in Tamil Nadu

Sudhakar, P. (2016). Tamil Nadu is dependent on the Thamirabarani river which is the only perennial river supplying water to this region. This dependency resulted in formulating a simple technological system to harvest rainwater during peak monsoon season called Eri, which is an ancient tank system devised for effective water conservation.

Kudimaramathu is one of the oldest traditional practices of stakeholders who used to manage the irrigation systems. During those days the citizens of a village used to actively participate in maintaining the water bodies and deepening and widening the lakes and ponds of their village and restoring these water bodies. Farmers would utilize various rich minerals found in these locations. A sense of group or collective ownership was ensured among the farmers and it thus these water bodies are still been used in Tamil Nadu and are playing an active role in irrigation. These irrigation systems serve multiple purposes such as storing water, supplying groundwater levels, acting as flood control mechanisms, preventing soil degradation, and avoiding wastage of surface runoff water.

Traditional practices in Kerala

Srivastava, S. K., & Pandey, H. (2006) In the state of Kerala, the main aim of the locals is agriculture farming every household of Kerala has its own banana tree also known as the “varaipalam ella”. There main aim to conserve the nature in a healthier way is through agriculture farming. There traditional



practices in maintaining their farms have been initiated from a long time. Rubber farming is also one of the most important part of the Kerala tradition. A lot of farmers are using their best ways to use the barren land. People from the region of Palakkad have this tradition to cultivate the banana tree in at least one fourth of their ground. Other crops such as paddy millets and spices have been cultivated among the households.

Traditional practices in Karnataka

Vivek, Vivek. (2016). "Kattas" are erected during monsoon month in Karnataka as an ode to conserve the water. Kattas have almost become extinct even in rural areas. They're made out of plastic or fibre sheets while semi-permanent Kattas are constructed using steel sheets and concrete.

Madaka is one of the other traditional water harvesting system. Madaka is not manmade It is made in an area that has natural slopes, our ancestors would identify a bottleneck and construct an earthen wall there. This would mainly hold a large amount of rainwater that would otherwise go into the sea. Madakas do not require a constant water source. Nala bundh has the role of acting as a percolation pond under the areas of water coverage. Once the stored rainwater fully percolates, in the month of November or December, it would dry up. But in the process, the particular amount of water would augment the water table in the foothills and will help and benefit a large community residing below.

The Psychological Aspect of Traditional Ecological Knowledge

According to Geert Hofstede's value dimensions of culture, Saylor (2012) in (Leading With Cultural Intelligence, n.d., p. 54-60) has noted the following ; individualistic or collectivistic society, masculine or feminine society, power distance factor and uncertainty avoidant or tolerant nature of the society inculcates the concept of certain emotions like pride, joy, fear, respect, content, sadness, etc. This is further strengthened by their needs, as given by David McClelland (1961. 1987) in (David McClelland | Department of Psychology, n.d.), namely: need for achievement, need for power and need for affiliation. Furthermore, when these emotions are associated with a belief that is strong enough, the value dimensions of culture and the basic types of needs come into play. This acts as a motivating factor for an individual as a member of the society to either conserve or destruct their environment.

Inspiring someone is easy but influencing them to follow our ways is difficult. In order to do so, we make people comply with our thoughts and ideas. Passer & Smith, (2009) has designed compliance as the change in one's own behaviour upon being asked to do so by someone else, and it does not necessarily have to be someone in a position of power or authority.

A few of the most commonly used techniques to make one comply, these techniques are often used by social psychologists and advertisers. They are as follows:

Door-in-the-face technique

Baron et al.,(2009), Passer & Smith, (2009) defines this technique: the person making a request begins with a large request, this request will be rejected as planned. Consequently, once this big request is rejected, another request, which is the main proposal one had initially aimed for, is presented. Since the initial request was rejected by an individual, the individual is most likely to comply with the second request since it is less effortful and troublesome than the first request.



This technique can be employed to launch regional plantations drives, for example, one can be first asked to plant a tree since this request is most likely to be rejected, another simple request such as taking care of a plant by watering it daily can be made. This request is now a simpler one as compared to the initial one so people of a local community are more likely to accept this request.

Foot-in-the-door technique

Baron et al., (2009), Passer & Smith, (2009) says that in this technique, an individual first makes a small and simple request which is likely to be accepted by anyone. Once an individual complies with this small request, a larger request is made. Since an individual had already complied with a small request before, it is most likely that the same individual would comply with a larger request too. One of the primary reasons for this behaviour is that the individual might feel that since they had already complied with a smaller request before, they might as well go ahead with the bigger request too, for example, one might be first requested to water a plant, later a bigger request can be made such as planting a tree. This would help instil a sense of harmony with nature and teach people to preserve the natural beauty of their environment.

Lowballing

Baron et al., (2009), and Passer & Smith, (2009) says that this technique involves making one comply with something, however, the effort associated with the same behaviour increases. This works in the following ways: since an individual had complied with something, they are already involved in this task and have contributed to that cause, so it is likely that the individual would contribute more to it. For example, one can be initially asked to perform a task as simple as collecting seeds of regional plants and later increase the cost of that same behaviour by planting those seeds and adopting the plant. One is more likely to do this because one has already made a commitment and it is easier to rationalise the additional cost.

The "That's-Not-All" Technique

Baron et al., (2009) has defined that in this technique, an idea or practice is put forward first which is modest in nature and usually does not draw much attention but additional offers are also made. This technique aims to make the proposal as appealing as possible. It is successful because the individual seems to think that there are a lot of options provided to them and they feel they're in control of the situation. For example, the benefits of traditional practices can first be introduced, later, the advantages of practising the same can be put forward. Since the individual is provided with options, the individual tends to choose the option with more benefits in it.

Ingratiation

Baron et al., (2009) has defined that in this technique, one is asked to comply with an idea or practice, but this is done in ways that the individual prefers, like flattering the individual. This works because the target individual feels safe as the proposed idea is parallel with their line of thought. For example, people who prefer products made out of natural ingredients can be presented with the idea of traditional conservation practices. Since the area of interest of one who loves natural products is in the same direction as that of our proposed ideas, the individual is most likely to comply with it and follow them routinely in their day to day lives



Reciprocity

Baron et al., (2009) and Passer & Smith, (2009) say that reciprocity is also known as the norm of reciprocity. This technique states that an individual treats other in the same way as one wants to be treated by others. People are likely to comply if they believe that others had already done something desirable for them. This technique can be used to conserve nature such as one can present ideas in a physical form, that is gifting someone an indoor plant which helps in reducing the level of pollutants in the air. Since the individual receiving the present is aware of the benefits and thus believes that this was an act of kindness, one would try to reciprocate the same to others as they would expect the same behaviour from others again.

Conclusion:

Traditional Ecological Knowledge (TEK) is defined as a body of literature carefully developed and compiled by local communities in close interaction with their environment. It comprises of traditional beliefs, ecological practices, social institutions, and conservation systems devised by communities collectively. Sacred Indian texts ranging from Upanishads to the Samhitas contain comprehensive knowledge regarding alternative environmental practices and instilled a tradition of reverence in people's hearts towards conserving nature in its true essence. From the water conservation systems of Rajasthan to the traditional agricultural practices of the North-east, this sense of devoutness and respect for nature has become an intricate part of the Indian psyche which is undoubtedly evident in our folktales, art, literature, religion, rituals, and ecological practices prevalent in every region of this subcontinent. Living in a capitalist society which harbours very little respect for our ecosystems, employing these traditional practices at a larger scale while simultaneously modifying them to increase their efficiency, effectiveness, and affordability has become a need of the hour.

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