

TRADITIONAL KNOWLEDGE BASE FOR SUSTAINABLE DEVELOPMENT: FUTURE ORIENTATION

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Abstract

Knowledge base should be oriented to develop skills and attitudes necessary to understand and appreciate the inter-relations among man and his biophysical surroundings. Its goal is to produce an active environmental oriented citizen, who is personally involved in decisions and practices regarding man's interaction with his environment. India has a rich tradition of intellectual inquiry and a textual heritage that goes back to several hundreds of years. India was magnificently advanced in knowledge, traditions and practices during the ancient time. The intellectual achievements of Indian thought are found across several fields of study in ancient Indian texts ranging from the Vedas and the Upanishads to a whole range of scriptural, philosophical, scientific, technical and artistic sources. Indian traditions, customs and religious beliefs enlighten us about the protection of the flora and fauna. They teach us one fundamental principles of ecology, especially that every living entity of the biosphere has its own important role in the flow of energy and cycle of nutrients which keep the world going. Environmentalists, therefore, have started realizing the significance of culture as a force for conservation and have focused on traditional knowledge systems.

Keywords

Future Orientation, Protection, Sustainability, Traditional Knowledge.

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Introduction

Education is the process or development through knowledge, skills, values, and training. It is expected that education can change and improve the quality of man's environment and in turn can modify man's behaviour with his environment. People's injudicious utilization of physical and biological resources for their effective living and functioning in a society resulted into environmental degradation. Environmental degradation ultimately changed into a survival threat for mankind. This threat can be removed by the environmental education. The basic aim of environmental education is to succeed in making individuals and communities understand the complex nature of the natural and the built environments resulting from the interaction of their biological, physical, social, economic and cultural aspects and acquire the knowledge, values, attitudes and practical skills to participate in a responsible and effective way in anticipating and solving social problems, and in the management of the quality of the environment. It may be possible by promoting our traditional knowledge.

Traditional Knowledge (TK)

Traditional Knowledge is essentially culture based, and it is integral to the cultural identity of the social group in which it operates and is preserved. It is an open-ended way to refer to tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information; and all other tradition-based innovations and creations resulting from intellectual activity. The definition of traditional knowledge used by the World Intellectual Property Office (WIPO) includes indigenous knowledge relating to categories such as agricultural knowledge, medicinal knowledge, biodiversity-related knowledge, and expressions of folklore in the form of music, dance, song, handicraft, designs, stories and artwork. "Tradition-based" refers to knowledge systems, creations, innovations and cultural expressions which have generally been transmitted from generation to generation; are generally regarded as pertaining to a particular people or its territory; and are constantly evolving in response to a changing environment. It tends to be developed in a way that is closely related to the immediate environment in which traditional communities dwell, and to respond to the changing situation of that community. Process leading to the creation of TK may not be formally documented in the way that much scientific and technological information is recorded. The apparent non-systematic manner of creation of traditional knowledge does not diminish its cultural value, or its value from the point of view of technical benefit. In recent years concern has been expressed in relation to the recognition of traditional knowledge as prior art. Patents have been granted for traditional knowledge-related inventions which did not fulfil the requirements of novelty and inventive step when compared with the relevant prior art. This prior art consisted of traditional knowledge that could not be identified by the patent-granting authority during the examination of the patent application. The term "prior art" generally refers to the entire body of knowledge which is available to the public before the filing date of an application for certain industrial property titles, principally patents, utility models and industrial designs. The identification of prior art constitutes a cornerstone for the substantive examination of applications for these titles, since requirements such as novelty and inventive step are established by comparing the claimed subject matter with the relevant prior art.

Traditional knowledge for nature in ancient India

There was no art without nature; no music without the live symbols seasons gave content to it. In the Vedic period before cutting a branch, an invocation was chanted, a prior forgiveness obtained-

‘SwadHITE ma ma hinsa. Aushade trayasva enam’

(O knife, do not cause any harm, O Lord of the plant, protect him)

The culture of conservation of nature dates back to the ancient Vedic Period. Our Vedas are full of hymns dedicated to the supremacy of various natural entities. The Rig-Vedic hymns refer to many gods and goddesses identified with sun, moon, thunder, lightening, snow, rain, water, rivers, trees etc. They have been glorified and worshipped as givers of health, wealth and prosperity. The rain-god Indra has the largest number of hymns attached to him. Sun worship is of vital importance in Vedic worship; the sun was worshipped in the form of gods like Surya, Martanda, and Usa etc. Today it has been proved that solar energy is the ultimate

source of energy that regulates the energy flow through the food-chain, drives various nutrient cycles and thus controls the ecosystem all over the earth, but it was probably well understood and realized by the ancient people as well. The Gayatri mantra of the Rig-Veda, which is chanted on every auspicious occasion, is full of praise for the sun. Ancient texts make explicit references as to how forests and other natural resources are to be treated. Sustainability in different forms has been an issue of development of thought since ancient times. For example, robust principles were designed in order to comprehend whether or not the intricate web of nature is sustaining itself. These principles roughly correspond with modern understanding of conservation, utilization, and regeneration.

Conservation Principles

- It must be ensured that earth remains forested.
- It must be understood that humans can sustain only if the earth is protected.
- Even if vaguely, it also makes reference to ecology, economy and society concurrently.

Utilization and Regeneration Principles

- Human beings can use the resources from the earth for their sustenance,
- Resource use pattern must also help in resource regeneration,
- In the process of harvest no damage should be done to the earth,
- Humans are forewarned not against the use of nature for survival, but against the overuse and abuse.

Although not in modern terminology, the three segment of sustainability – ecology, economy and society seem to get addressed simultaneously.

Flora and Fauna in Traditional India

Trees have also been given huge importance the ancient Indian tradition. The four Vedas are full of references to various herbs, trees and flowers and their significance. Trees and plants were considered as animate beings and to harm them was regarded as a sacrilege. The Atharva-Ved glorifies the medicinal value of various herbs. In the ancient texts we come across references to trees like Kalpavriksha and Parijat with mythical powers. Lotus and trees like Vatvriksh, or flame of the forest Palas were given special attention. The worship of the pipal tree became a folk ritual, and the pipal was called the king of trees in ancient literature. In the course of time, many such plants and trees came to be associated with various gods and goddesses and were worshipped accordingly. There are some scientific reasons underlying those beliefs. The pipal tree continuously releases oxygen in the atmosphere, and therefore, such knowledge must have been put into a spiritual form by our ancestors. Similarly, trees such as Bael, Ashoka, Sandalwood and Coconut hold special significance in various religious rituals; so do Durya grass, Tulsi, the Banana, Lotus, Marigold, China rose, and the flowers of Milkweed.

Three major factors were responsible for the origin of the tree-cult in India: their wood, leaves, fruits, etc. were useful to humans; it was believed that trees were possessed by spirits who guided humans in their distress; and humans developed respect for trees which often provided them with an alternative for medicinal plants. Flora and fauna and their associations with human beings were depicted in epics like the Mahabharata, the Ramayana, and in Kalidas's compositions such as Meghdut, Abhigya-shakuntalam, etc. They provide colourful portrayal of trees, creepers, animals and birds conversing with people and sharing their joys and sorrows, which shows that people believed in harmony between man and nature. It is also marked in the scriptures that a tree could be adopted as son; Puranas describe this ritual as taruputavidhi. The Upanayan ceremony performed for the Pipal tree and the marriage ritual performed between the banyan tree and neem tree are also noteworthy. Watering the plants is considered as greatly rewarding in the religious literature.

According to Kautilya (321-300 BC), cutting trees or its branches is an offence and he prescribed various punishments for it sacred groves. The tradition of sacred groves was also common in the ancient period and is still practised by folk and tribal communities. A sacred grove consists of a bunch of old trees, generally at the outskirts of a village, which were left, untouched when the original settlers cleared the forest to establish the village. Such groves were regarded as the abodes of gods and goddesses or spirits and hence protected with

utmost care. The cutting of trees was prohibited in these areas and nobody dared to disobey the injunction, partly because of religious faith and partly due to the fear of facing the wrath of the gods, goddesses and spirits. In many sacred groves, villagers perform sacrifices and offerings to the gods during festivals and other occasions. This tradition of sacred groves could be matched with the contemporary notion of biosphere reserves. The great emperor Ashoka also emphasised to grow more medical herbs, plants and trees not only in his empire but in other neighbouring states also. He ordered for free plantation, especially fruit-bearing and shadowy trees along the roadside for the comfort of travellers.

The Foundation for Revitalisation of Local Health Traditions (FRLHT) is a non-governmental organisation which was launched to save and build upon India's traditional medical legacy. One of the programmes that FRLHT has embarked on is that of conservation as well as sustainable use of medicinal plants especially in the area of primary health care. In the area of conservation, 30 medicinal plants conservation areas and 18 ethno botanical conservation parks are being set up in Karnataka, Kerala and Tamilnadu States of South India with the help of State forest departments, research institutes, universities non-governmental organisations and others. This is the first such conservation effort in the country that concentrates on plants rather than wild life and is perhaps the most comprehensive conservation effort in post-independent India. The foundation's thrust areas include establishing a computerised information network on medicinal plants and natural products; promoting the utilisation of traditional medicine in rural and urban areas; fostering understanding about the theoretical foundations and epistemology of traditional knowledge systems. The initiative in boosting the use of medicinal plants in primary health care involves promoting a nursery network to raise medicinal plants and encouraging the public to avail the economically and toxicity - free benefits of 'Green Health', or using plants that heal. This effort needs the commitment and support of the public as well as their willingness to turn to medicinal plants as the most practical primary health care self help system for a country like India (Manohar, 1995).

Respect for Wildlife in Traditional Knowledge

Wild animals and even domesticated ones were also given pride of place and respect in the ancient tradition. Many Hindu gods and goddesses have some particular animal or bird as their vehicles. These include lion, tiger, elephant, bull, horse, peacock, swan, owl, vulture, ox, mouse, etc. The association of wild animals with peoples' religious beliefs played a significant role in their preservation for so very long in India, until the colonial rule indulged in intensive hunting. The feeling of sacredness attached to wildlife protected it and contributed to maintaining an ecological balance. For instance, the snake's association with god Shiva and snake worship was a conscious effort by our saints to preserve the animal, who otherwise incites fear and persecution because of its perceived venomous nature. In fact, snakes are an important link in the food cycle and play a significant role in maintaining the ecological balance. Many artefacts and seals of the ancient Indus valley civilization depict animals like the bull (with or without a hump), the tiger, the elephant, the rhinoceros, the buffalo, the Gharial (crocodile), but often too mythical animals such as the unicorn. Although the precise significance of this animal symbolism remains a matter of debate, Harappa's clearly attached great importance to it. They also appear to have worshipped trees, as evidenced by several tablets, such as this one in which a tree is depicted raised over a platform. During the Vedic period, the cow was considered a very valuable animal; Aditi, the mother of the gods in the Rig-Veda, was often called 'the divine Cow'. In the Mahabharata, the whole earth is compared to a cow which humans, gods and demons, trees and mountains all milked to get what they desire out of her. Many of the Shastra prescribed the unnecessary killing of animals.

Later, the Mauryan ruler Ashoka also prohibited in his edicts hunting and cruelty to animals; his edict at Girnar in Gujarat also ordered medical treatment to them when necessary. Kautilya's Arthshastra also mentioned forests and animal sanctuaries, where animals were protected from poaching. Buddhism and Jainism, the two most popular heterodox sects of ancient times also advocated nature conservation. Buddhism believes in tolerance, love, compassion, forgiveness and non-violence to all. Jainism advocates complete non-violence or Ahimsa; it treats every creature on earth including the smallest insects or microbes as of equal importance and forbids their killing by all means. This perception went a long way towards preserving biodiversity. While

Jainism preaches complete non-violence, Buddhism follows the middle path and states that killing of animals or felling of trees should not be done until absolutely necessary. The Wildlife (protection) Act, 1972 also provide protection to listed species of flora and fauna and establish a network of ecologically important protected areas. Nowadays, at the Nagpanchami festival, drinking milk to the snakes and worshiped them. It is useful in the way of farming because a snake saves crops from the danger of rats.

Conclusion

Since ancient time, Indian culture has been very naturalistic. Considering the rivers as pious, worshiping trees, rocks, sun, moon, sky, respect for animals, singing praises of nature and deriving sustenance moral and material through interaction with nature has been our tradition. Thus human society, from the very ancient times has been aware of man-environment relationship. Environmentalists have started realizing the significance of traditional values as a force for conservation and have focused on traditional knowledge systems. Religious teachings and cultural traditions could be used in a positive sense for conservation of the environment and ecology. The growing impact of science, technology and industrialization on various aspects of environment has raised a new challenge for mankind. While making use of different resources one has to be oriented for tomorrow, failing that the co-existence of man and environment will be disturbed, leading to fatality. This calls for analysis of good virtues existed in our culture and way of life, which may be relevant to be synthesised with the modern way of life. Future is based on today, so today's life be governed by the judicious utilization of existing resources with emphasis on sustainability. Home, school and community together need to work on integrated manner to facilitate conducive environment to the growing child to develop value of co-existence.

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