

Study of Tribal Indigenous Knowledge to Keep the Balance in Eco System with Natural Resources

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ABSTRACT: Natural resources are better to keep the environmental balance if more natural resources are used in daily life such as home decoration, to prevent the diseases as the natural resources are easily decomposed to the environment when it becomes the waste material. To fulfill these purpose, we can follow the natural resource management knowledge from the tribal. Specially medicinal plant uses in tribal daily life, their technique to keep the wild life, woods, soil, landscape etc. by their different rituals. In our daily life we can replaced the plastic materials or any other non eco- friendly materials by bamboo or different grass/trees for basket, home decorative items, fences etc. Artificial colors, food items make serious health hazard but from the Tribal Knowledge these things replace by different natural resources. Down graded and vulnerable tribal communities make almost 10% of the enormous population. Tribals solved their many problems with their Indigenous Knowledge. The present study describes the importance of tribal Indigenous Knowledge to keep the balance of eco system. The study was solely based on secondary data. The information was gathered from different books, journals, internet and personal collection. Data were collected according to the requirement of fulfillment of objectives. Indigenous Knowledge is the local knowledge that is unique to a particular culture or society. It is also referred to as ‘folk knowledge’, people’s knowledge’, ‘and traditional knowledge’. This type of knowledge is usually passed from a generation to another generation, simply put indigenous knowledge is passed down from the elders to the younger ones and the mode of transfer is usually done by word of mouth and cultural rituals. It is shown that Sustainable Development Goals(2015) to reached by using Indigenous Knowledge. Tribal’s ritualistic festivals keeps the environmental balance, use of medicinal plants of Savara tribal to cure from various disease is very effective now a days. It is a very good economic policy to use the handicraft, which is made of the natural resources(bamboo).

KEYWORD: Indigenous Knowledge, Environmental Balance, Sustainable Development, Ethno medicinal practices, Natural Resources, Bamboo’s handicraft.

Introduction

Now a day these are the burning issues to protect the environment, to protect eco-system, to maintain the balance of the environment. For a better future aSustainable Development Goals(SDGS) or Global Goalshad been set up on 17th issues in 2015 by the United Nations General Assembly (UN-GA) and they committed to

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achieve the goals in 2030. To keep the environment balances several issues were taken among 17th SDGS. Those goals are clean water and sanitation, affordable & clean energy, climate action, life below water, life of land. To achieve these goals Tribal Indigenous Knowledge's are being played a big role. Tribal ritualistic festivals keep the environment balance through offer the worships to some animal, birds, trees, hills, water bodies etc. Through these activities/rituals they actually save environment, prevent climate changes. Use of medicinal plants of Savara tribal to cure from various disease is very effective now a days. Also, their cultivation process, fishing from different water bodies, use of organic fertilizer to enhance the fertility, weather prediction based on the natural animals' movement- with all of these Indigenous Knowledge we can live in an eco-friendly way. At the same time fair use of natural resources is also possible and balance of natural environment is maintained.

Objectives of the study –

- (a) To know how to Tribal Indigenous Knowledge help to keep the Environmental balance.
- (b) To know how to Tribal Indigenous Knowledge help to achieve the Sustainable Development Goals (SDGS 2015).
- (c) To know how to use natural resources in a natural way with the help of Tribal Indigenous Knowledge.
- (d) It will also explore about the uses of medicinal plant to cure from various disease, this concept is taken from Tribal Indigenous Knowledge.

Methodology-

Indigenous Knowledge is a conceptual and conventional method those are incorporated by the common knowledge which is earn by the experience of a community throughout the life such as cultivation, animal farming, cure from various diseases. It is verbally transferred and preserved generation to generation.

Rabindranath Tagore also realized that Indigenous Knowledge has enormous potential to keep and use of environment. Therefore, he established Brahmacharya Ashram school where the students were thought on Indigenous Knowledge. Rabindranath Tagore established an experimental school at Santiniketan on December 22, 1901 with five student (include his elder son) and an equal number of teachers. He originally named it Brahmacharya Ashram, in the tradition of ancient forest hermitages called Tapoban. In an attempt to help with rural reconstruction, Tagore also wanted to enlarge the school's relationship with the neighboring villages of the Santhal tribal community. There were teachers, who did not educate in conventional system but they were skilled in Indigenous Knowledge. As Rabindranath Tagore want such an education system where the students were skilled more practically in Indigenous system in lap of the nature. Currently Brahmacharya Ashram is called Visva-Bharati University.

Tribal Indigenous Knowledge has great potential to keep environmental balance, sustainable development in the field of cultivation, animal husbandry, preservation and use of medicinal trees, etc. Therefore, Ministry of Human Resource Development (MHRD) is obedient to include it into the New Education Policy (NEP) 2020 in the secondary level curriculum.

There are so many potential solutions to fulfil our daily needs by the eco-friendly way and to keep the environmental balances in Indigenous Knowledge. So we have to pay our attention to the tribal culture, language, technique of life and technique to use of medicinal trees, therefore, their Indigenous Knowledge could be reserved. In this vision government of west Bengal granted official status to the Kurukh language spoken by Ora on and Kisan tribes. The Oraon tribe in West Bengal speaks Kurukh, which was stated an endangered language by UNESCO.

Tribal Indigenous Knowledge along with their rights was considered by various commissions, researchers, United Nations, NEP 2020, even in our constitution at earlier.

Accept Tribal Rights by Constitution

1. Article 29(cultural and educational rights) - article no.29 of our constitution grants any section of citizens have right to preserve their own culture, language & script. It shows that Indigenous Knowledge is preserved indirectly.
2. Article 46 – in article 46 focus that “the state shall promote with special care the education and economic interest of the weaker section of the people, and in particular of the scheduled caste and scheduled tribes, and shall protect them from social injustice and all forms of exploitation.”¹ Here it shows that, Article 46 directly mentions that improvement of education and economic system of Scheduled Tribe.
3. 86th amendment – Education was considered as fundamental rights in 86th amendment in 2002.
4. Article 45 – Article 45 talks about the provision for free and compulsory education for children. It states that, “The State shall endeavour to provide, within a period of ten years from the commencement of this constitution, for free Here takes an initiative to educate in primary education for tribal children also. So that being the educated they can join to the mainstream of social and fostering their culture.

The provision made by the Amendment are described below

Article 21A – article 21A consider under the fundamental right. It provides education to a child who belongs to the age group from 6 to 14 years old. To implements state can enjoy some flexibility (by law or determine) but state was made mandatory to educated this age group.

Article 45 – article 45 describes the duty of state to provide Free and Compulsory Education to all children up to the age of 14 by 1960 as Directive Principle. There after it is needed to take care the child below the age of 6 years for their education and nutrition. The provision for Early Childhood Care and Education (ECCE) are incorporated into the amendment number 86th. It says to develop in term of the moral, social, nutrition, physical, mental development to this age group (below 6 age) than formal education.³

In this way Indian Constitution pay attention to keep tribal education, culture, social aspects explicitly or implicitly. Their Indigenous Knowledge was built up on their cultural aspects.

Patent Act 1970 Amendment 2002&2005: -2002 Amendment pays importance on the Traditional Knowledge- “Micro-organisms became patentable whereas inventions relating to traditional knowledge were included in the list of ‘what are not inventions.’”⁴

Amendments of Patent Act in 2005 are incorporating ‘what are not inventions’ lists are based on the usefulness of human beings. The Indigenous Knowledge is enlisted into “what are not invention” as tribal Indigenous Knowledge carries huge potential to usefulness of human beings.

National Innovation Foundation (NIF)

NIF is another revolutionary contribution from India to defend and promote Traditional Knowledge (TK). The main objective of NIF is to encourage and assist in the defence of TK. The department of Science and Technology, GOI, established NIF in year 2000 for averting biopiracy on the one hand and IPR (Intellectual Property Rights) protection of TK and Ancestral Knowledge on the other. NIF has also helped substantially in the last two decades from its establishment, protecting TK.⁵

NIF commenced some initiatives and their functions. Example

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1. Student Club for Augmenting Innovations (SCAI) – SCAI comprises of students from India's best management and technology institutes. They offer product development mentoring to innovators and TK holders at the grassroots.
2. Grassroots Technological Innovations Acquisitions Fund (GTIAF) – GTIAF Sanctioned in 2011 and operationalised in 2012. GTIAF acquires the rights of Technologies from innovation after compensating them for the same, with the purpose of disseminating and diffusing them at low cost and no cost for the greater advantage of the society.
3. Gandhian Inclusive Innovation Challenge Awards -Awards aim towards developing new solutions for three challenges – paddy transplanter, wood stove and tea leaf plucking machine.
4. Grassroots to Global (G2G)- NIF has proved that Indian innovators can match anyone in the world when it comes to solving problems creatively. They perform better than others in producing superior sustainable replacements by using local resources sparingly. The G2G model propagated by NIF is all set to change the way the world looks at creativity and innovations at grassroots.
5. Inverted model of innovation- The inverted model of innovation implies that children invent, engineers & designers fabricate and companies commercialise.
6. Innovation Exhibition at The President House and The Festival Of Innovation An Entrepreneurship (FINE) – Since 2010, the Parliament has been hosting an exhibition of innovations near its Mughal Garden to showcase the creativity and ingenuity of common people. Since 2015 NIF and Parliament organizing a festival of innovation which comprise of roundtable on various topics in relation to innovation in addition to the exhibition.⁶

Traditional Knowledge Digital Library

TKDL established in 2001 as a association between the Council of Scientific And Industrial Research (CSIR) and the Ministry of Health and Family Welfare (India). TKDL is an Indian digital knowledge repository of the traditional knowledge, especially about medicinal plants and formulations used in Indian system of medicine. The aims of the library is to protect the ancient and traditional knowledge of the country from exploitation through biopiracy and unethical patents, by documenting it electronically and classifying it as per international patent classification system.⁷

As of 2010, it had transliterated 148 books on Ayurveda, Unani, Siddha and Yoga in public domain, into 34 million pages of information, translated into five languages – English, German, French, Spanish and Japanese. Data on 80,000 formulations in Ayurveda, 1,000,000 in Unani and 12,000 in Siddha had already been put in the TKDL. Plus it has signed agreements with leading international patent office's such as European Patent Office (EPO). United Kingdom Trademark & Patent Office (UKPTO) and the United States Patent and Trademark Office to protect traditional knowledge from biopiracy, by giving patent examiners at international patent office's access to the TKDL database for patent search and examination.

Indigenous Knowledge and the UN

Recognizing the important of traditional knowledge, the right of indigenous peoples to promote, maintain and safeguard their traditional knowledge is enshrined in several international normative and policy instruments. The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). UNDRIP's 43 article state that, the rights recognized here in constitute the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world. Article 44 state that, all rights and freedoms recognized here in are equally guaranteed to male and female indigenous individuals. UNDRIP's 46 articles declare that "Indigenous peoples have the right to the full enjoyment, as a collective or as individuals, of all human rights and fundamental freedoms as recognized in the Charter of the United Nations, the universal Declaration of Human

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Rights and international human rights law.” The Declaration goes on to guarantee the rights of Indigenous peoples to enjoy and practice

Their cultures and customs, their religion, and their languages, and to develop and strengthen their economics and their social and political institutions. Indigenous peoples have the right to be free from discrimination, and the right to a nationality.

Different initiatives over the Indigenous Knowledge by the Indian Government directly or indirectly proves that it has enormous potential to maintain environment balances and maintain eco-system.

Now we will realize the importance of the Indigenous Knowledge in present scenario to keep environmental balance with natural resources—

“When an elder dies, a library burns” – this old African proverb may be the best way to understand Traditional Knowledge (TK).⁸

1. Importance Of Indigenous Knowledge To Achieve The Target Of Sustainable Development Goals 2015 (SDGS)

Tribal Indigenous Knowledges are

A. Bio- resource management

Forest management and its uses –

Ritualistic – Ritualistic activities and norms set which may protect forest resources, scared grooves, scared patches of land.

Ethno – Botanical – Knowledge of edible and medicinal plant varieties and methods of extracting such resources.

B. Natural resources management

Indigenous ways to manage (clearing/channelling and distributing) natural sprints, cascades etc, use of taboo and ritualistic restriction and controlling means to protect those resources.

C. Land resources management-land distribution pattern unique to the people.

(a scheduled tribe land holder can only sell his land to scheduled tribe person. If any person buy a land from a scheduled tribe by hiding facts, he can end up in jail time, and government will return back the land to original land owner at anytime if he approaches authority.)

Agriculture related- Astronomical observations to predict weather. Pest control mechanism, irrigation and storage of water, storage and preservation of seeds and food grains, specific knowledge and practices of raising and protecting garden crops. Folklore and proverbs related to all these activities and ritualistic practices etc.

D. Food and drinks–Hunting, fishing, gathering and preparing food items.Indigenous methods adopted in preparation of beverages specific to the studied communities etc.

E. Ethno medicine and observation and action of health and treatment seeking - use of herbs and other materials. Use of parts of animals and animal products and byproducts such as cow dung etc. in curative regimen.

F. Health Attention and Welfare in special cases – pregnancy, birth, puberty, death, purification, etc.

G. Calamitysupervision – Natural disaster management, Disease epidemic and animal and pest attack, Human Induced disaster management.

H. Indigenous Knowledge (IK) related skills, art and craft:

Non material skill- IK on music, dance, song of local importance, performing art.

Material aspect: - IK in use of local specific materials in various aspects like building houses, fencing, making and manufacturing essential items for everyday life and also for commercial purposes, weaving skill, social importance of local products etc.

Tribal's save all natural resources with help of their Indigenous Knowledge, and using the Indigenous Knowledge they prevent starvation, and maintain environmental balance.

The term "Sustainable Development" (SD) first came to vogue in the report of the world Commission on Environment and Development Our Common Future. Sustainable Development defined as development that "meets the needs of the present without compromising the ability of future generation to meet their own needs".⁹

A more comprehensive explanation is that it is a group of methods to create and sustain development which seeks to dismiss poverty, create equitable standards of living, gratify the basic needs of all peoples and establish sustainable political practices, while confirming that there are no irreversible damages to natural resources and nature. The Sustainable Development Goals (SDGs) or Global Goals are a collection of 17 interlinked global goals designed to be a blueprint to achieve a better and more sustainable future for all. The SDGs were set up in 2015 by the United Nations General Assembly (UN-GA) and are intended to be achieved by 2030.

The 17 SDGs are –

1. No poverty
2. Zero hunger
3. Good Health and well being
4. Quality Education
5. Gender Equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry innovation and infrastructure
10. Reduced inequality
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life of land
16. Peace, justice and strong institutions, and
17. Partnerships for the goals.

To achieve the target of Sustainable Development Goals 2015 (SDGS) Tribal Indigenous Knowledge to be used. The goal which are mostly achieve by the tribal Indigenous Knowledge are poverty mitigation, quality education, good health, drinking water, achieve gender equality, etc. Tribal Indigenous Knowledge which are more effective to achieve SDGS 2015 are –their cultivation process, uses of medicinal plants, fishing from different water bodies, collect honey from jangle, collect vegetable from jangle, way of land reform, use of organic fertiliser to enhance the fertility, use of lime stone and natural resources of potassium into the pond water, weather prediction based on the natural'sanimals' movement, etc. They offer the worship to some animal, birds, trees,hills, water bodies, etc. Through rituals they actually save the environment, Prevent the climate changes. That is also an important issue of SDGS 2015.

2. Valuable Uses of Herbs as Medicine in Tribal Community:

More herbs are used the tribal community by their Indigenous Knowledge. There are so manyethnomedicinal herbs present in their rituals and beliefs. Searching of these herbs is a difficult task but experienced and aged people (called Dheri or Shaman) are more efficient than the younger. Due to huge potentialTribal ethnomedicinal practices from tribal Indigenous Knowledge is paid of great significance into NEP 2020(National Education Policy).

According to NEP 2020 Ayurvedic treatment will play a major role in health care system of modern medical Education, many parts of the Ayurvedic treatments are based on the ethno medicinal practices. –

“Given that people exercise pluralistic choices in health care, our health care education system must be integrative meaning thereby that all students of allopathicmedical education must have a basic understanding of Ayurveda, Yoga, and Naturopathy, Unani, Siddha and Homeopathy (AYUSH) and vice versa.”¹⁰

India has a rich diversity of medicinal plants growing under different geographical and ecological condition; 1500 species out of about 15,000 privileged plants species in India have been testified to have medicinal uses. Indians speak a variety of language, which include 23 regional languages. There are many more local or tribal dialects spoken by Indians. India is

home to different ethnic groups comprising 5.4 crores of Indigenous peoples living in various territories, having diverse cultures, religious rites, and food traditional that separate them from each other. These people also have a healthy consciousness of tradition medicine especially herbal and folk medicine for various disease treatments.

‘Savara’ is a tribal community they live at Medinipur and north 24 parganas in west Bengal. They collects almost 25 medicinal plants and use to cure from various disease. Example –

Steam bark of Aswatta is used to cure rheumatism; Ankula's leaves applied drop bydrop twice for a week against conjunctivitis, Kamini's root applied to the viral fever. Kachu root bark is used to reducing the cholesterol of the body, Saloporni's (chatim tree) leaves is very effective against typhoid, Anantamul root are used against eczema, Dhatuki's leaves is very effective against irregular menstrual, Tuber of Khambalalu(kham alu/mati alu) is used against rheumatism.

“The medicine man or shaman is called as Deheri among the savara and lodha.”¹¹ Common people get the information about the medicinal plant and its use from Deheri or Shaman.

Karbi tribal of Assam, use of 14 species belonging 7 families in the treatment of 25 disease conditions. Traditional health care practices of the karbis included both local and oral applications and rituals to cure diseases. Use of fish to cure mental depression like symptoms locally referred as Nihu Kanchingtung is prevalent Stil today.

Fishing practices among different tribal in karbi Anglong district, use various fishing gears to catch fish. "Use of pesicidal plants in water bodies is common among different communities.

In recent times, some sections of people have been using syntheticchemicals to stupefy fishes, but the practices have serious irreversibledamage on aquatic fauna ecosystem."¹²

Above example indicate that tribal ethnomedicinal practices as Indigenous Knowledge is an essential part of our life even in present day.

3. Ritualistic Festivals are carrier ofIndigenous Knowledge:

Some rituals and festivals of tribal's are directly correlated with nature and natural resources. Which are not only rituals, festivals they play role as Indigenous Knowledge to solve various problem in live hood.

Example- Baram is the defensive divinity of the Lodhi tribal. It is a common festival among the Lodhi. Baram is existed in a grove of sal tree and neem tree.Baram looksin human form but is higher than normal man. His body is protectedwith long hair all over. His eyes are usually broad and open. He graspsa lengthy axe in his hand. If he became furious or feels distressed, tigers visit the village or elephant may rush into the locality. He also saves villagers from epidemic diseases and appears in dreams to the village persist to foretell the future of the village. Mainly worshipped on the last day of the month Chaitra (march – April) and also last day of pious (December – January). The senior women of the village purified the shrine with cow-dung paste and put white dot marks of rice paste on the front wall of the shrine. The Baram-than is a heap of mud under the shade of a common tree where there are at least twenty-four horses of seared clay arranged typically. These horses are believed to be the representative of the Baram god.Baram is united in their religious life and keeping village unity. The elements used in the Baram and their way of performance close to Hindu Caste society of the locality.

Worship than (place) of Baram deity serve the religious need of the people no doubt, but it also serves the defence of their environment. These places are considered holy and propitious as it is believed that some supernatural spirits rendezvous these places. So that common people generally avoid these places, except on religious occasions and never cut wood and collect tree branches from those localities. Thus, a vast tract of land is protected from annihilation. The existence of totemic believe also plays a significant role in maintaining the bio – diversity Fish centric festival is organised by Karbi's tribal of assam. It is known that fishes are very useful to cure some health issues such as cough, anaemia, diarrhoea, infirmities etc. The flesh of Labieo pangusia is used as tonic and bile of the fish is used as a cure for stomach ache. Use of fish to cure mental depression like symptoms locally referred as Nihu Kanchingtung is prevalent until present day.

It is the instance to take the benefitfrom our own natural resources by the Indigenous Knowledge which is preserved by the tribal people's rituals, culture, festivals from generation to generation. now a days it is very significant to use the natural resources by the Indigenous Knowledge. As everywhere it has been founded that all most food items are composed of artificial chemicals.Thesechemicals are pushed to the livesinto the life-threateningcomplicacies, also this incorporate evil effects to the eco system. In this prospectit is very momentous to incorporate the Indigenous Knowledge into the curriculum of secondary level by NEP 2020.

4. Utilization of Bamboos For The Way of Eco-Friendly Living:

Karbi's tribal of assam enjoy rich treasure of knowledge on crafts. This Indigenous Knowledge is passed orally from generation to generation and so on but with high possibility of dilution at eachlevel of transfer. Bamboo is valuable plant resource and has the potential for improving rural economic.

Karbi's usable things those are made of bamboo, those things are

Hengru- This is a cylindrical sieve of flat bottom used for separating rice beer from fermented malt.

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Chohu – made from jintak or bamboo splits and used as cushion for earthen pots. This craft is made to mark the beginning of the religious festival Chojun or invoking of Arnam Kethe, the highest god of the karbis. Hor kangthir or holy rice beer for the occasion is stockpiled in earthen pot.

Mucham – This craft is loosely woven with bamboo splits. Religious ritual Chojun, on the occasion to store some meat of the sacrificed pig in mucham.

Lumphalk (spoon)- For everyday use spoons are usually made from bamboo. It is specially made along with the other two crafts chohu and mucham.

Hak- These are cylinder-shaped basket of various sizes but falling into two groups-with or without akeng or foot. Booth categories are mainly used for carrying jhum products nevertheless it is also used for other resolutions.

Ingatong :- These are large foot less hak often used for carrying paddy from the jhum field to mandu or shack.

Beleng :- This is a large flat circular mat with the periphery stitched with cane splits. Beleng is mainly used for winnowing particularly rice and paddy among other items.

Other bamboo things are – Nopak abe (knife handle), Khangra, Batheis, Langthe, Vo-um, Khangra etc.

Conclusion

Indigenous Knowledge or local environmental knowledge is that knowledge that, people have gained through inheritance from their ancestors. Over centuries, Indigenous people around the world have developed their own locality-specific knowledge and practice, which is an important part of the lives of the people. Traditional Knowledge of tribal/Indigenous people can provide leads for sustainable use and management of natural resources. It is therefore, important that the national and international community starts recognizing indigenous people's and their knowledge as valuable allies in the fight against climate change and sustainable development challenges and in maintaining global biodiversity, using medicinal plants to cure from various disease by Indigenous Peoples (savara, lodha), handicraft is used to earn money which is spend their livelihood. It is shown that from the beginning of civilization to still days tribal's rituals, medicinal practices, livelihood etc. have basically an orientation towards nature. For their nature friendly livelihood orientations simultaneously they used different natural resources and help to keep the natural resources. Therefore the Tribal Indigenous Knowledge have to be spread to the every human beings and different consciousness programme to be taken by government and non- government organization. Implementation of Tribal Indigenous Knowledge in society can serve to the human as well as keep the environment balances and improve the eco-systems.

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