

Bharatiya Knowledge Systems (BKS) in Sustainable Development : Traditional Medicines Perspectives - Challenges and way forward.


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- ▶ BKS/IKS is a collective range of Knowledge that has exhibited in systematised ways of knowledge. It starts from the oldest composition of knowledge i e Vedic literature and extends to country's native and tribal folklore. Spectrum of BKS is therefore, huge.
- ▶ According to WIPO, traditional knowledge system of any country includes indigenous knowledge related to Agriculture, Biodiversity conservation, Medicinal knowledge and knowledge related to cultural expression etc.
- ▶ **This presentation is mainly focused on Bhartiya Knowledge System related to traditional medicine with reference to the question of sustainable development.**
- ▶ The presentation is divided in to three components A. Basic concepts about BKS B. Protection of Traditional knowledge, its challenges and C. the way forward towards sustainable development.

- ▶ Bhartiya Knowledge System related to traditional medicine may be broadly categorised in to two groups—
- ▶ 1. Recognized traditional knowledge viz, Ayurveda, Siddha, Unani, Yoga, Naturopathy and Homeopathy.
- ▶ 2. Un recognized traditional knowledge embedded in the cultural heritage of the ethnic people.
- ▶ This presentation is again focused on category 2
- ▶ North East India alone has more than 200 tribal groups each with its own language group and rich cultural heritage including the cultural heritage of traditional medicine. The country as a whole has more than 700 such tribal group. **Sustainable Development utilizing those un recognized knowledge system is a far reaching goal yet.**

A. Basic Concepts:

- ▶ Bharatiya Knowledge Systems comprise of Jnan, Vignan, and Jeevan Darshan that have evolved out of experience, observation, experimentation, and rigorous analysis. This tradition of validating and putting into practice has impacted our education, arts, administration, law, justice, **health**, manufacturing, and commerce.
- ▶ This knowledge or practices pass from generation to generation and form a part of the traditions or cultural and spiritual heritage of the Indigenous communities.
- ▶ Custodians of this Knowledge or practices are the Indigenous communities .

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- ▶ Traditional knowledge and modern science differ in its characteristics and views. Traditional knowledge systems follow holistic approach unlike the modern science (Iaccarino, 2003).
 - ▶ Modern science favors analytical and reductionist methods, whereas, the traditional knowledge is towards intuitive and holistic view.
 - ▶ **Key for traditional knowledge based sustainable development is rooted in translation of intuitive and holistic knowledge to a reductionist one.**

- ▶ **Traditional knowledge (TK), indigenous knowledge (IK), folk knowledge, and local knowledge** are generally considered as synonyms. But Indigenous knowledge is often considered as sub set of traditional knowledge.
- ▶ According to the World Intellectual Property Organization (WIPO) and the United Nations (UN), **traditional knowledge** and **traditional cultural expressions (TCE)** both are indigenous knowledge.
- ▶ The nature of Traditional Knowledge System (TKS) is therefore, diverse. It covers literary, artistic and scientific works; songs, dances, medical treatments and practices; and agricultural technologies and techniques and so on.
- ▶ Systematization and canonization of traditional Knowledge gave rise to the elite science (the Greater Tradition).
- ▶ This ancient knowledge and technology, which incorporates the wisdom that have been distilled through millennia of experimentation and trial and error in a real life situation, could be the resource for next generation sustainable development.

- ▶ The Indian epistemological tradition comprises six important sources of knowledge. They are: perception (pratyaksa), inference (anumana), verbal testimony (Sabda), comparison (upamana), presupposition (arthapatti) and non- apprehension (anupalabdhi).
- ▶ **Bhartiya Knowledge system related to traditional Medicine is characterised mostly by perception (pratyaksa), and verbal testimony (Sabda).**
- ▶ It is often said that Indigenous knowledge is holistic, and cannot be meaningfully separated from the lands and resources available in and around. Traditional knowledge in such cosmologies is inextricably bound to ancestors, and ancestral lands **and this creates problem in its protection and also in its commercialization in global perspectives.**
- ▶ In the age of globalization, traditional knowledge based sustainable development is therefore , a big challenge and this needs scientific intervention. Though it is said that Traditional Knowledge has fed,clothed and healed the world and will be able to do the same in a situation of Climate Change too.

Traditional Knowledge and its Protection

- ▶ Pre condition for any traditional knowledge based sustainability is protection of traditional knowledge.
- ▶ But the current IPR system cannot protect traditional knowledge for three reasons
- ▶ First, the current system seeks to privatize ownership and is designed to be held by individuals or corporations, whereas traditional knowledge has collective ownership.
- ▶ Second, this protection is time-bound, whereas traditional knowledge is held in perpetuity from generation to generation.
- ▶ Third, it adopts a restricted interpretation of invention which should satisfy the criteria of novelty and be capable of industrial application, whereas traditional innovation is incremental, informal and occurs over time.
- ▶ A sui generis, or alternative law, is therefore necessary to protect traditional knowledge

- ▶ The Convention Biological Diversity (CBD) imposes general obligations relevant to the conservation, sustainable use, sharing of information , and equitable sharing of benefits derived from biodiversity
- ▶ Recently amended patent law of India contains provisions for mandatory disclosure of source and geographical origin of the biological material used in the invention while applying for patents in India.
- ▶ Provisions have also been incorporated to include non- disclosure or wrongful disclosure of the same as grounds for opposition and for revocation of the patents, if granted.

- ▶ Documentation of traditional knowledge is also acknowledged as a means for its protection and Traditional Knowledge Digital Library (TKDL) is already on. But even then the absolute protection is not possible.
- ▶ A sui generis system separate from the existing IPR system should be designed to protect the traditional knowledge of the local and indigenous communities of India
- ▶ (SPEECH OF HON'BLE MR. JUSTICE VIJENDER JAIN, CHIEF JUSTICE, PUNJAB AND HARYANA HIGH COURT, CHANDIGARH IN A SEMINAR OF ASIA PACIFIC JURIST ASSOCIATION (APJA) ON “SAFEGUARDING THE TRADITIONAL KNOWLEDGE IN INDIA” ON 28.04.2008 IN DELHI.)

- ▶ At WIPO, negotiations on IP forms of protection have been taking place within the Intergovernmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore since 2011.
- ▶ While WIPO administers many international IP-related treaties, none of them specifically **addresses the issue of traditional knowledge** (although some do provide protection for the analogous areas of traditional cultural expressions and performances of them).
- ▶ **Developing an international IP regime to protect traditional knowledge is the challenge.**
- ▶ **In view of the difficulties of mediating the relationship between established IP rights and traditional knowledge systems, international negotiations at WIPO are focusing on developing a customized or *sui generis* system of protection for traditional knowledge.**

- ▶ National treatment of TK is unlikely to help in protecting, because it is only applicable where such national laws exist.
- ▶ Traditional knowledge of an indigenous community in Peru will be protected in Kenya and *vice versa*, because these countries have laws governing the protection of traditional knowledge.
- ▶ But it does not apply in countries where legislation to protect such knowledge is not in place.
- ▶ An International Treaty for the said protection is yet to be in force.


Reaching a balanced international agreement on such complex issues is difficult but not impossible

An international agreement to protect traditional knowledge would enable indigenous and local communities to control, manage, preserve and utilize their traditional knowledge assets in greater perspectives. Because....

It would also open up access to a mind of knowledge which currently is held almost exclusively by those communities and this is needed for innovation and development.

This is the only key to utilize traditional Knowledge for sustainable development. This opening up of access to a mind of knowledge needs legal protection first.

Developing a balanced, robust and flexible international IP framework to protect traditional knowledge is, therefore, much needed.

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- ▶ Till we have a sui generis system separate from the existing IPR for protection of traditional knowledge, CBD guideline could help but implementation part of the same is not up to the mark and needs immediate attention. CBD says there are three basic objectives ----
 - ▶ Conservation of biological diversity
 - ▶ Sustainable use of the components of biodiversity
 - ▶ Fair and equitable sharing of benefits arising out of the utilization genetic resources and bio-resources

 - ▶ This third objective of CBD could play significant role in utilization of traditional knowledge for sustainable development.

SALIENT FEATURES OF BIODIVERSITY ACT 2002

- ▶ To regulate access to biological resources of the country equitable share in benefits arising out of the use of biological resources
- ▶ To conserve and sustainable use of biological diversity
- ▶ Setting up of National Biodiversity Authority (NBA), State Biodiversity Board (SBB) and Biodiversity Management Committee's. (BMC's)
- ▶ BMCs here are the key organizations to play role in traditional knowledge based sustainable development

- ▶ To respect and protect knowledge of local communities traditional knowledge related to biodiversity
- ▶ To secure sharing of benefits with local people as conservers of biological resources and holders of knowledge and information relating to the use of biological resources
- ▶ Conservation and development of areas of importance from the standpoint of biological diversity by declaring them as biological diversity heritage sites

- Protection and rehabilitation of threatened species
- Involvement of institutions of State Government in the broad scheme of the implementation of the Biological Diversity Act through constitution of committees
- Protect India's rich biodiversity and associated knowledge against their use by foreign individuals and organizations without sharing benefits arising out of such use and check Bio-piracy
- Provisions for notifying heritage sites by State Government in consultation with local body

National Biodiversity Authority (NBA)

As mandate of the Biological Diversity Act, 2002 (Sub-Section (1) (4) of Section 8), the Central Government has established a body called the National Biodiversity Authority, on 1st October, 2003.

The main functions of the Authority are :

- ▶ To lay down procedures and guidelines to govern the activities provided under Section 3, 4, and 6. (**Permission to foreigners/NRI's foreign companies**)
- ▶ For obtaining any biological resource (Section -3)
- ▶ For transferring the results of any research (Section -4).
- ▶ Certain collaborative research projects exempted (Section 5)

State Biodiversity Boards (SBB)

- All matters relating to access by Indians for commercial purposes will be under the purview of the State Biodiversity Boards (SBB)
- The Indian industry will be required to provide prior intimation to the concerned SBB about the use of biological resource
- The State Board will have the power to restrict any such activity, which violates the objectives of conservation, sustainable use and equitable sharing of benefits

Biodiversity Management Committees (BMCs)

- ✦ Institutions of local state government will be required to set up biodiversity management Committees in their respective areas for conservation, sustainable use, documentation of biodiversity and chronicling of knowledge relating to biodiversity.
- ✦ NBA and SBBs are required to **consult the concerned BMCs** on matters related to use of biological resources and associated knowledge within their jurisdiction

People's Biodiversity Register (PBR)

- The Register shall contain comprehensive information on availability and knowledge of local biological resources, their medicinal or any other use or any other traditional knowledge associated with them
- The main function of BMC is to prepare Peoples' Biodiversity Registers (PBR) in consultation with the local people.


- The documentation of PBR by the BMCs includes information on bio-resources and associated knowledge gathered from individuals
- Establishment of comprehensive PBRs would not only help to inventories and document the local biological and genetic resources, but also to conserve and sustainably use the bio-cultural diversity for rewarding income generation

(**Gadgil 2006**).

- ▶ The way forward.....
- ▶ A sui generis International system should be designed to protect the traditional knowledge of the member countries
- ▶ PBR for each and every Block level BMC should be operationally ready as per recommendation of CBD so as to make benefit sharing functional. Sustainable development based on indigenous knowledge is directly linked to proper functioning of benefit sharing.
- ▶ Comprehensive reverse pharmacological research on traditional medicine is needed with value addition to prove the robustness of the claim so as to make it appropriate for IPR
- ▶ Safety measure and clinical trial issue of herbal medicine needs revisit.

- ▶ In our country Traditional medicines are governed by Drug and Cosmetics Act of 1940, Drug and Cosmetics rules of 1945. This was amended in 1959. In 1993 a committee revised the guideline and suggested that same safety measure as directed by DCG, India for allopathic medicines should be followed for Traditional Medicine.
- ▶ Here exist the gap and we need to focus on that. Clinical trial for traditional medicine (both traditional formulation and isolated biomolecules) should be such robust so as to be accepted by the International scientific Communities though since long these have already been acting on a large section of population.
- ▶ Probably because of this, invention of new drugs from our country is not significant. Traditional knowledge based patents and their commercialization is also less in comparison to the traditional knowledge system that we have. Our focus should be on this.

- ▶ We have traditional knowledge associated with plants like *Catharanthus roseus*, Taxus, Willow etc. But Vinblastine (Canada) and Vincristine (Canada 1961), Aspirin (Germany 1897) and Taxol (US-2003) were invented in some other countries.
- ▶ Neem (*Azadiracta indica*) is our traditional plant but Nimbin, Nimbolin and 26 other bioactive molecules have been isolated from Neem plant in some other country.
- ▶ Vincristine was derived based on traditional knowledge of Madagascar associated with *Catharanthus roseus*. But the country was denied from royalty of Vincristine probably their National laws could not protect that traditional knowledge and International Law is not in force.

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- ▶ Bharaitya Knowledge System is our wealth . We need to convert it to Global resource with scientific intervention by protecting it under the legal and technical framework for sustainable development.



Namaskar

