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# PROTECTING TRADITIONAL KNOWLEDGE, A CHECK TO BIOPIRACY

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## **Abstract**

Many people assume that India is home to a broad variety of cultures and customs. India stands out as a country with a richness of traditional Knowledge (TK) as a result. Traditional Knowledge has been used for centuries to offer tried-and-true cures for human illnesses. It is easier for outsiders to get patents on medical items that derive from conventional medical processes due to the efficacy of alternative medical practices and the general ignorance of patent offices. It is difficult for India to stop bio-piracy since traditional knowledge is not legally protected and because it is difficult to enforce intellectual property rights abroad.

In this research paper, we'll examine the safeguards India has put in place to preserve its biodiversity and traditional Knowledge. The paper also tries to draw attention to the danger that biopiracy poses and the unethical ways that industrialized countries have illegally profited on Indian Traditional Knowledge without compensating the indigenous Knowledge. The paper finishes with a few specific tips and proposals that might aid in defending Traditional Knowledge from the threat posed by Bio-piracy.

**Keywords:** Biodiversity, Traditional Knowledge, Protection of Traditional Knowledge, Conservation of Biodiversity, bio-piracy.

## **Introduction**

*Centuries of living close to nature, the Indigenous people all over the world possessed mountainous knowledge of their surrounding natural environment. This knowledge system is known as Traditional Knowledge. Knowledge such as Agriculture knowledge, Scientific knowledge, Technical knowledge, Ecological knowledge, Medicinal knowledge, and all sorts of*

Bio-diversity knowledge comes under the umbrella of Traditional Knowledge. Besides that, “Expression of Folklore” in the form of music, dance, song, handicraft designs, stories, artwork, biodiversity conservation, food techniques, tradition-based literary works, and innovations are also part of Traditional Knowledge. It is essentially culturally oriented or culturally based, and it is integral to the cultural identity of the social group in which it operates and is preserved.

*“When an elder dies, a library burns”* this old African proverb is most appropriate for the importance of Tradition Knowledge. It is preserved and transmitted in a traditional context from generation to generation. So, when the elders die, the full richness of tradition is diminished, as some of it has not been passed on and so is lost. Formal documents regarding the procedure of those pieces of knowledge may not be recorded scientifically or technologically yet it doesn’t diminish its value as an invention or scientific discovery or its value from the point of its benefits. Around 370 million tribal and indigenous people all over the world are the real custodian and holders of traditional knowledge. Up to 80% of the world’s population depends on traditional medicine for its primary health care.<sup>1</sup> This knowledge is indispensable for the lower division of society. It also prevents land and soil degradation, fisheries depletion<sup>2</sup>, biodiversity erosion<sup>3</sup>, and deforestation.

But in recent years Traditional Knowledge which is mainly based on biological sources is threatened by **Biopiracy** by big multinational companies and pharmaceutical companies. Biopiracy is a situation where indigenous knowledge (Traditional Knowledge) of nature which is originated by indigenous people, is used by others for profit, without permission from, and with little or no compensation or recognition to the indigenous people themselves. In simple words, it is theft of biological resources. Developed countries are exploiting genetic resources and indigenous communities’ traditional knowledge of developing countries in the name of patents on the inventions derived from those genetic resources. Those big medical companies use indigenous knowledge of medicinal plants for patenting without recognizing the fact that the knowledge is not new or invented by the patent applicant, and thereby the piracy deprives the indigenous community of the rights to commercial exploitation of the technology that they themselves had developed.

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<sup>1</sup> *Integrating Traditional Medicine in Health Care* by World Health Organisation Report

<sup>2</sup> Depletion occurs when more fish are caught than they are able to reproduce to repopulate.

<sup>3</sup> Biodiversity erosion (or biodiversity loss) encapsulates the notions of habitat and species loss, habitat degradation, and habitat fragmentation.

## Significance of Traditional Knowledge

The term "traditional knowledge" refers to the information, customs, and beliefs that have been passed down orally from one generation to the next within a certain society. This kind of information is frequently connected to indigenous people and is seen as a crucial component of their culture and identity. Traditional knowledge has a number of important components, including:

➤ **Preservation of cultural heritage :**

Traditional knowledge is frequently firmly ingrained in the cultural legacy of a group and is seen as a crucial component of their identity. Communities are able to preserve their cultural traditions and pass them on to subsequent generations through keeping this information alive.

➤ **Sustainable use of natural Resources:**

The sustainable use of natural resources is a subject that traditional knowledge typically addresses through customs and beliefs.

By merging traditional knowledge into modern resource management practises, we can make sure that natural resources are utilised sustainably.

➤ **Contribution to Scientific knowledge:**

In a variety of disciplines, including health, agriculture, and ecology, traditional wisdom has added to our scientific understanding. Traditional wisdom serves as the foundation for many current agricultural and medical procedures.

➤ **Promotion of diversity and Inclusivity:**

Traditional knowledge encourages inclusion and diversity by recognising the contributions of other groups and cultures.

Greater understanding and respect for various cultures may be fostered by appreciating and recognising traditional knowledge.

## Reasons for Bio-Piracy or Misappropriation of Traditional Knowledge

Bio piracy or misappropriation of traditional knowledge can occur for various reasons, including:

- A. Commercial Interests:** Businesses may try to use traditional knowledge and biodiversity for their own financial advantage without paying proper recompense to the communities from whom they are acquired.

- B. Absence of legal protection** - Traditional knowledge and biodiversity are frequently not covered by intellectual property rules, making them open to exploitation.
- C. Inadequate benefit-sharing arrangements** - Benefit-sharing agreements may not be clearly defined or may be insufficient, which results in communities not being fairly compensated for their efforts.
- D. Information Gap**-Undervaluation and underappreciation of these resources may result from a lack of understanding or awareness of the importance and worth of traditional knowledge and biodiversity.
- E. Power Inequality:** When indigenous communities and outside parties have unequal power, biodiversity and traditional knowledge may be exploited without the communities' knowledge or permission.
- F. Poor Governance**-It may be challenging to stop and deal with biopiracy and the theft of traditional knowledge if there are weak governance and enforcement systems.
- G. Globalisation and Market growth** – Due to the growing demand for traditional knowledge and natural resources as a result of market growth and globalisation, there is more pressure to use these resources for profit.

### **Adverse effect of bio-piracy on bio- diversity**

The adverse effects of bio-piracy on biodiversity can be significant and long-lasting. Here are a few examples:

- A. Loss of Biodiversity**-Bio-piracy can result in overuse of natural resources and habitat damage, which can reduce biodiversity. Ecosystems and the animals that depend on them might be severely harmed by this.
- B. Disruption of traditional knowledge systems** - Traditional knowledge systems from indigenous people are frequently stolen as part of bio piracy. Their way of life might be disrupted, and they might lose important cultural and ecological information as a result.
- C. Disruption of traditional knowledge systems** -Biopiracy might cause genetic variety to be lost because businesses may only use genetic resources that are advantageous to their bottom line. Ecosystems may become less resilient as a result, making them more susceptible to pests, diseases, and climate change.
- D. An unfair distribution of benefits** - Bio piracy frequently leads to the exploitation of genetic resources and their accompanying traditional knowledge without the knowledge or benefit of the communities from whom they are taken. Unfair social and economic

conditions may result from this.

- E. Insufficient sustainability** - Biopiracy may lead to excessive exploitation of natural resources without any regard for long-term sustainability. This may lead to the exhaustion of resources and the disintegration of ecosystems, which might have detrimental effects on biodiversity and human well-being.<sup>4</sup>

## **Tool for Prevention of Misappropriation of Traditional Knowledge**

### **A. The Protection of Traditional Knowledge (draft articles):**

The Committee received the most recent version of the Draught Treaty on 22 March 2019, and between 17 and 21 June 2019, it underwent revisions. In the Preamble, it is acknowledged that indigenous and local communities have the right to "maintain, control, protect, and develop their intellectual property over their cultural heritage, including their traditional knowledge;" recognized for new regulations and standards on the supply of suitable and acceptable measures for the preservation of existing information privileges, taking into consideration variances in different legal systems. This is done in order to develop "respect." It also recognises the independence, cultural identity, and moral principles of conventional knowledge holders. The components of misuse of traditional knowledge that are covered under the different interpretations of the Draught Treaty<sup>5</sup> include:

- "Access" or "usage;"
- Without "violation of national law in the provider country," "without free, prior, and informed consent or consent and participation and, where applicable, without mutually acceptable terms," "in violation of customary law and existing procedures regulating the entry or use of such traditional knowledge," or "abuse;" or "abuse" except in the case of "violation of national law in the provider country;" and
- For "economic, science, education and technology transfer."

While there are three alternatives to the objectives of the Draft Treaty, the first addresses three key issues needed to protect traditional knowledge The Draught Treaty specifically specifies that "this instrument's purpose is to provide adequate protection of intellectual property against:

- Misappropriated traditional knowledge;

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<sup>4</sup> Farzin Naz, "Prevention of Bio-Piracy under Indian Legal Regime for Better Conservation of Biodiversity" 1 ILPR, Volume 1 Issue 1 (2021)

<sup>5</sup> The reference to the "Draught Treaty" likely pertains to ongoing discussions and negotiations within international bodies or committees, and specific details of such a treaty may not be publicly available.

- Uncompensated traditional knowledge use; and
- Error granting of intellectual property rights over tradition.

The degree of protection (and its terms) supports the following ideas::

- Member States will respect the TK holders' customary laws and customs.;
- Member States [will/should] take national action to ensure that TK holders have an absolute and collective right to preserve, regulate, use, create, allow or prohibit access to and usage/use of their traditional knowledge; and receive an equitable and fair share of the benefits resulting from its use.
- "Member States [shall/will] take measures to ensure the integrity of traditional knowledge" or to safeguard the (moral and financial) rights of TK owners.

### **B. The Convention on Biological Diversity (CBD) and The Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization to the CBD (Nagoya Protocol)**

In accordance with the general obligation set out in Article 8(j) of the CBD, States are required to "value, protect, conserve, and encourage awareness" of indigenous populations as well as to "encourage their broader use with the permission and participation of the holders of that awareness." Additionally, States must "promote an equal distribution of benefits resulting from the usage of TK," according to the Convention on Biological Diversity.<sup>6</sup>

The Nagoya Protocol includes rules for access, benefit-sharing, and compliance that address traditional knowledge of genetic resources. In areas where indigenous and local communities have the chance to give access to genetic resources, it also addresses such issues. Taking into account the community's laws and processes as well as the customary usage and exchange, Contracting Parties should take the necessary steps to guarantee prior informed consent and a just and equitable distribution of benefits for these communities.

### **C. Traditional Knowledge Digital Library <sup>7</sup>**

Ayurveda, Unani, Siddha, Sowa Rigpa, and Yoga are some of the Indian medical systems with information that may be found in the public domain on TKDL. Sanskrit, Urdu, Arabic, Persian,

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<sup>6</sup> <https://www.cbd.int/>

<sup>7</sup> Council of Scientific & Industrial Research, Bio-piracy of Traditional Knowledge, available at: <https://www.tkdil.res.in/tkdil/LangDefault/Common/Home.asp> (Last visited on Dec. 2, 2022).

and Tamil literature that is now in circulation has been translated into digital form and is available in five different worldwide languages, including English, German, Spanish, French, and Japanese.

There are only a few subgroups related to medicinal plants available in the International Patent Classification (IPC), so the Traditional Knowledge Resource Classification (TKRC), an innovative structured classification system for systematic arrangement, dissemination, and retrieval, has been developed for roughly 5,000 subgroups. To make it easier for foreign patent examiners to use, the information must be categorised according to the International Patent Classification (IPC) section, class, category, community, and subgroup. The ISM and Yoga texts have been transcribed into the TKDL database, which contains over 3.6 lakh formulations and practises.

The TKDL acts as a bridge between regional language formulations and the patent examiner on a worldwide scale because the archive can include information on both conventional and international words in a language and format that is understandable to patent examiners. It is anticipated that the problem of lack of access to traditional knowledge in the past would be solved.

➤ Advantages of TKDL on Bio-piracy

- I. According to estimates, several patents pertaining to the Indian medical system have been improperly issued by patent offices all over the world.
- II. From the Indian Traditional Knowledge International Patent Offices, over 15,000 patents were taken in 2003; this number rose to 35,567 in 2005 and 85,000 in 2008 (Refs. 12, 14). The TKDL Taskforce examined 4896 references to 90 medical plants available in the USPTO database and discovered that 7 medicinal plants of Indian provenance were referenced in 360 of the 762 patents on medicinal plants, accounting for 80% of all references.
- III. A significant number of patent applications have either been disallowed or withdrawn, cancelled, or declared null and void based on the third-party observations that the TKDL team filed. India receives free protection for about 0.250 million medicinal formulations thanks to innovative TKDL.
- IV. Patent examiners benefit from having quick access to the TKDL database since it enables them to quickly determine the novelty of patent applications.

- V. The process of contesting a granted patent typically takes 5-7 years and costs between \$0.2 million and \$0.6 million. For instance, it took 10 years in each of the first two cases and 13 years in the third to oppose the patents for neem (EP436257), Enola beans (US patent No. 5894079), and Monsanto soybeans (EP301749). This makes it obvious that TKDL will not only assist avoid the early patenting of traditional Indian medicine but will also save money and time.

## Case Laws

### Turmeric Case<sup>8</sup>

Indian cuisine uses turmeric rhizomes as a flavour spice. Additionally, it possesses qualities that make it a useful component of medications, cosmetics, and colours. For many years, it has been used as a remedy for treating wounds and rashes.

A US patent (#5, 401,504) on the use of turmeric in wound healing was awarded to Suman K. Das and Hari Har P. Cohly, two Indian expatriates working at the University of Mississippi Medical Centre, in 1995. The USPTO received a re-examination complaint from the Council of Scientific and Industrial Research (CSIR), India, New Delhi, contesting the invention on the basis of the previous art. According to the CSIR, the use of turmeric as a medicine dates back thousands of years and has been used to cure rashes and wounds. They were supported by historical evidence of accepted knowledge, which included a prehistoric Sanskrit manuscript and a 1953 report published in the Bulletin of the Indian Medical Association. The USPTO cancelled the patent after receiving an appeal from the patent holder and considering the CSIR's arguments. It was the first time a patent based on the customary knowledge of a developing country has been successfully challenged, making the Turmeric case a historical one. This patent was cancelled by the US Patent Office in 1997 because it was determined that the invention lacked innovation and had been known in India for centuries.

### The Neem Case<sup>9</sup>

The oil derived from neem seeds can be used to treat colds and flu; neem extracts are frequently employed against a variety of pests and fungi that attack food crops; neem extracts combined with soap can help treat malaria, skin conditions, and even meningitis. The US Company W.R.

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<sup>8</sup> Turmeric Case (Judgement) [1997] U.S. Patent No. 5401,504

<sup>9</sup> Neem Patent Case (Judgement) [2000] E.P.O. Patent No. 436257

Grace Company and the US Department of Agriculture received a patent (EPO patent No. 436257) from the European Patent Office (EPO) in 1994 for a method of controlling plant fungus using hydrophobic extracted Neem oil. A collection of foreign NGOs and lawyers for Indian farmers opposed the patent in court in 1995.

They provided proof that the fungicidal properties of neem seed extracts, which have been utilised for generations in Indian agriculture to safeguard crops, are not patentable. The EPO ruled in 1999 that none of the qualities of the current contention were novel or inventive because they had already been known to the public before the patent application. The European Patent Office (EPO) cancelled the Neem patent in May 2000. Due to the EPO's earlier choice to revoke the patent on the fungicidal qualities of the seeds obtained from the required seeds, the USDA and the chemical multinational W. R. Grace's request was denied in March 2006.

### **The Basmati Case**<sup>10</sup>

Before the United Kingdom Trade Mark Registry, Rice Tec, Man. Inc. submitted an application to register the "Texmati" trademark. It was successfully resisted by the Agricultural and Processed Food Export Development Authority (APEDA). The US Patent 5,663,484 granted to Rice Tec by the US Patent Office on 2 September 1997 was one of the documents cited by Rice Tec as evidence supporting the granting of the aforementioned trademark, and this is how this patent came to be the centre of dispute. This US utility patent was remarkable in that it claimed that the rice plant's characteristics were the same as those of ordinary Basmati rice lines from India and that its regional range included North, Central, or South America or the Caribbean Islands. On September 2, 1997, Rice Tec received the patent from the USPTO. The patent had 20 claims that included a unique rice plant as well as a number of rice lines, plants and grains, seed deposits, and a technique for choosing a rice plant for breeding and reproduction. For rice grains with traits resembling those of Indian Basmati rice lines, it made claims 15 through 17. If properly used, these reasons 15–17 may have prevented Indian exports to the US.

Regarding points 15–17, information from the IARI (Indian Agricultural Research Institute) Report was used. The Hyderabad Rice Research Directorate's 1978 germplasm selection supported the discovery. experts from the CFTRI (Central Food Technological Research Institute) evaluated the various grain qualities, and the assertions made by CFTRI experts about

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<sup>10</sup> India-US Basmati Rice dispute, [2001], U.S. Patent No 5663484 A.

grain characteristics were used to refute the allegations 15–17.

On April 28, 2000, a motion for the re-examination of this invention was finally made. After finishing the proposal for re-examination, RiceTec made the decision to strike claims 4 and 15–17. Biopiracy of traditional knowledge is not just a problem in India.

## Conclusion

In conclusion, Bio-piracy is a major issue in India because it involves the utilisation of traditional knowledge relating to biodiversity for financial gain without acknowledging or compensating the communities who created and maintained it. The rights of indigenous groups are violated by this practice, as is the fair use of natural resources. India has made measures to address this problem with programs like the Traditional Knowledge Digital Library, but more has to be done to safeguard traditional knowledge and make sure that communities are acknowledged and paid for their contributions. The international community must also cooperate to create a legal framework that safeguards traditional knowledge and forbids the theft of biodiversity. Considering all that has been seen, it is possible to recommend the following actions to safeguard indigenous peoples' traditional Knowledge and stop bio-piracy:

- To strengthen the TK base, TKDL should become more effective and work with an increasing number of NGOs. Indigenous groups should be encouraged to participate in the fight against Bio-piracy, and they should be given free legal representation if they choose to contest a case involving a breach of their traditional Knowledge.
- Particular criteria should be established so local indigenous populations can utilize their resources with the greatest possible profit.
- The Biological Diversity Act 2002 must include provisions allowing anyone to initiate lawsuits in the High Court alleging bio-piracy, unlawful use of biological resources, unauthorized use of indigenous people's inventions, and violations of Biological Diversity norms. By filing a lawsuit for an injunction, the unlawful use may be stopped rather than only appealing to the High Court after it has already occurred.
- The conservation of natural resources, related traditional Knowledge, and the rights of the community that holds them must all be a priority for state governments in their plans and programs.
- The government should identify local traditional knowledge practices, and it should take action to include unsuitable techniques in research programs so that indigenous people

who are the holders of TK may profit from them. Between the government, researchers, and indigenous people, it will foster trust and respect.

- A more definite form of law is thus required since the Acts need more clarity in certain areas that must be addressed to preserve indigenous people's rights to protect indigenous Knowledge.
- Few judges or attorneys specialize in traditional Knowledge as a field of law. Therefore, special tribunals should be set up to resolve disputes involving traditional Knowledge quickly. Experts should be included in the team to speed up the process and ensure that large business entities do not get patents via unethical methods.

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