Recently two important notes have appeared in *Current Science,* India's leading science journal, regarding bio-piracy of Traditional Knowledge Systems. Here are the extracts:

1. TKDL- A safeguard for Indian traditional knowledge

India has woken up to the task of protecting her traditional knowledge from patent bio-piracy. The trigger was the successful revoking by the Council of Scientific and Industrial Research (CSIR) of patents filed on turmeric, neem and basmati. This success set the tarmac from which the new initiative called the 'Traditional Knowledge Digital Library (TKDL)' is getting ready for flight. The first phase of TKDL on ayurveda is marked for completion in October this year. For bringing out a TKDL on ayurveda, a Memorandum of Understanding was signed on 6 June 2001 between the National Institute of Science Communication (NISCOM), New Delhi and the Department of Indian Systems of Medicine and Homeopathy (ISM&H), Ministry of Health and Family Welfare.

When compiled, TKDL would have documented the traditional knowledge available in the public domain in a digitized format. Starting with the existing literature in ayurveda, it would later cover unani, siddha, naturopathy, homeopathy and folklore medicine. In the first phase, a 'Traditional Knowledge Resource Classification (TKRC)' is being prepared for 2147 medicinal plants. The content of TKDL would initially consist of about 35,000 'slokas' (verses) from ayurveda. These slokas gleaned from 14 ancient texts and recognized books would be digitally transcribed into a readable form and made available both in Indian and foreign languages. The methodology adopted in setting up TKDL is explained below. TKDL would help patent examiners the world over to have a ready reference to Indian traditional knowledge, while granting patents in such domains. The project cost for TKDL is about Rs.1.18 crore. TKDL is an effort that brings together the Department of ISM&H, CSIR and the Ministry of Commerce and Industry. :

At the inauguration of TKDL in New-Delhi on 26 March 2002, the Minister of Health and Family Welfare, C. P. Thakur emphasized that TKDL would play 'a crucial role not only in documenting our precious heritage in the area of traditional health-care systems, but also in preventing bio-piracy and un- - scrupulous patenting of indigenous herbal medicinal formulations'. He stated that in the prevailing era of globalization, only the efficient would survive. Therefore we need to protect ourselves from theft of traditional knowledge. The TKDL, he added, could also serve as a useful reference point for research workers. The awareness that such a library would create might help the cause of preventing extinction of rare species. Awareness generated could be helpful in the propagation of such species in conjunction with farmers, Thakur felt.

R. A. Mashelkar, Director General of CSIR, while speaking on this occasion pointed out that the global market for herbal/traditional medicines is US $ 60 billion, with an annual growth rate of 5- 15%. In this, China's share is about US $ 7-8 billion and India's US $ 400- 500 million. He also referred to a TKDL Task Force study of the US Patent and Trade Mark Office (USPTO) database conducted in March 2000. The study showed that out of 4896 references on 90 medicinal plants mentioned in the USPTO database, 80% of these references was on seven medicinal plants of Indian origin:

Kumari, 'Mustaka, Tamraparna, Garjara, Atasi, Jambira, Kharbuja. The findings revealed that out of the 762 patents on medicinal plants studied, 360 of them could be characterized as traditional.

There has been international acceptance of TKDL, Recently, the World Intellectual Property Organization (WIPO) constituted a group of members from USPTO, China, Japan, European Patent Office and India for discussing the findings of the TKDL Task Force. The group presented their views at the International Patent Classification (IPC) Union meeting in February this year. The outcome is to create a new sub-class for TKRC in IPC and link TKRC with ayurveda. India's TKDL database has also been selected for a pilot study by 170 member states of WIPO. India presently is not a member of the IPC Union.

When completed, TKDL would help patent examiners for easy retrieval of traditional knowledge-related information, thus avoiding the possibility of granting patents to unoriginal inventions. Further, a review process of patents already granted in light of the TKDL database would help in cancellation of some patents.

Methodology used for TKDL

Slokas from ayurvedic texts are first identified. Each sloka is read and converted into structured language using Traditional Knowledge Resource Classification (TKRC). TKRC is innovative in itself. The TKRC classification has been evolved for about 5000 subgroups as against one group in file International Patent Classification (IPC) for traditional knowledge. The TKDL portal would be based on XML standards and

would be platform-independent. The codes for each sloka are fed into a data entry screen and also saved on the database. Computer-savvy ayurveda experts carry out the data entry. These are then decoded in different languages. The ayurvedic formulations can be presently decoded in English, French, German, Hindi, Japanese and Spanish. In future, it would be available in 20 foreign languages and all Indian languages. The decoded format of the formulation is easy to read and understand, even by the layman.

The web version of TKDL would include a web-based search interface. This would provide for a full text search and retrieval of traditional knowledge information on IPC and keywords in multiple languages. TKRC would be an integral part of TKDL, and would provide a background on ayurvedic concepts, definitions and scientific basis of Indian systems of medicine. In addition, it would carry information on practitioners, hospitals and dispensaries. There are several search features incorporated in the format.

According to V. K. Gupta, Director of National Institute of Science Communication, the TKDL software developed in-house does not do transliteration but it does smart translation. Once abstracted, data from the slokas are converted into several languages using Unicode meta data methodology. The software developed can perform smart translation of botanical names and ayurvedic descriptions from traditional terminology into modern terminology. Examples of this are 'Kumari' to 'Aloe Vera', or 'Mussorika' to 'small pox', etc.

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Extracts from:

2. 'l'he recording of traditional knowledge: Will it prevent 'bio-piracy'?

Sangeeta Udgaonkar

Traditional knowledge is not protected within the patent system as it stands today. The turmeric case highlights the problems faced by India in preventing bio-piracy. The recording of traditional knowledge seeks to reduce the possibility of bio-piracy, but looks to future legislation to effectively protect the rights of the people. Some important structural changes based on a sound legal footing are proposed, which can be easily incorporated within the present databases, and would go a long way in preventing bio-piracy and protecting the interests of the knowledge-holders footing.

The recording of traditional knowledge is taking place today. It is imperative that the method of recompense be in place before the information being recorded is made public. Failure to do this would be doing a grave injustice to those who developed this knowledge through generations.

Traditional knowledge is in demand as a source of information of the possible properties of biological material. It is valuable knowledge. We should place its value high, not devalue it completely by giving it away free. Unless we do so, no one else will acknowledge that it has any value at all. Intellectual property rights, including patent rights, are rights over knowledge. We have that knowledge. Let us not give up our rights. In dealing with patents we are dealing with a law designed for businessmen. Let us also have a business-like approach to the problem. By designing the structure of the traditional knowledge database appropriately, it is possible to make the knowledge available to all and at the same time retain the control necessary for benefit sharing to be operationalized.. This would go far in ensuring that cases of 'bio-piracy' are prevented in the future.

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