Documentation of Tacit Indigenous Medicinal Knowledge (TIMK): Issues and perspective in present era

Piyali Das¹ & Prof. Juran Krishna Sarkhel²
¹M.U.C. Women’s College, Burdwan-713104
²Dept. of Library & Information Science, University of Kalyani, Kalyani-741235

Abstract: There is an increasing awareness throughout the world of Indigenous Medicinal Knowledge (IMK) and the significant role of traditional medicine in meeting the public health needs of developing countries. Documenting and protecting these medicines is becoming a greater priority. The importance of documenting the Tacit Indigenous Knowledge on medicinal plants as being a medium for: (i) preserving cultural heritage, (ii) basis of modern drug discovery (ii) preserving of biological diversity, etc.

Keywords: Indigenous knowledge, Tacit Indigenous Medicinal knowledge (TIMK), Ethnomedicine, documentation, Traditional medicine.

Introduction
From the very beginning of world man-plant relationship cannot be restricted to the limits of environmental science. From the first day of life Mankind dependent on plants to fulfill all of their basic needs, Food, shelter, health and fuel. Primitive man living closely associated with nature, mainly depended on it for his survival. Dependency on plants, made him to acquire the knowledge of economic and medicinal properties of plants by trial and error. In case of medicinal plants it has been estimated that almost 25% of plants species have some sort of medicinal use somewhere of the world [5]. In addition, the statistics of modern drug development shows those natural products are the major source of inspiration for recent drug development. As well as it is also noticed that some developing countries like India and China have led to greater importance in local health-care system, which have been considered as important alternatives to expensive treatment of advance medicine. WHO estimates that 4 billion people, i.e., 80% of the world’s population, depend on indigenous knowledge to meet their medicinal needs.

Indigenous knowledge
Indigenous knowledge (IK) some time calls also as “Traditional knowledge” (TK) or “Local Knowledge”. IK refers to the knowledge, innovations and practices of indigenous and local communities. Warren [10] defines IK as the local knowledge – knowledge that is unique to a given culture or society. It is developed from experience gained over centuries and is used at the local level by communities as the basis for decisions pertaining to the fulfillment of their day to day needs, and is transmitted orally from generation to generation. It pertains to experiential, locality-specific knowledge and practices of medicine, as well as healing, hunting, fishing, gathering, agriculture, combat, education and environmental conservation developed by indigenous people over the years.

We all know that human knowledge system usually combines both explicit and tacit knowledge. ‘Explicit knowledge’ represents recorded knowledge and available in various media like books, periodicals, letters, reports, memos, literature, audio-visual material, CDs films, videos etc. or electronic formats like data, software, websites, etc., which is formal and easy to communicate to others. It is also known as declarative knowledge. In contrast, ‘Tacit knowledge’ represents personal knowledge, which is confined in human mind and difficult to formalize or codify and also difficult to communicate to others. This tacit knowledge helps the end-user to gain explicit knowledge as and when any individual requires.

For the purpose of this paper ‘Tacit indigenous knowledge’ (TIK) has been used interchangeably with other co-terminous terms like traditional knowledge, community knowledge, folkloric
knowledge and local knowledge, to encompass the long-standing information, wisdom, traditions and practices of certain indigenous peoples or local communities. It is developed from experience gained over centuries and is used at the local level by communities as the basis for decisions pertaining to the fulfillment of their day to day needs, and is transmitted orally from generation to generation. It is stored in peoples’ memories and activities and is expressed through stories, songs, art, legends, folklore, proverbs, dances myths, cultural values, beliefs, rituals, community laws, local language and taxonomy, agricultural practices, equipment, materials, plant species, and animal breeds. In many cases, indigenous knowledge has been orally passed for generations from person to person. Explicit indigenous knowledge, i.e. recorded IK in any documentary form, e.g. use of traditional medicine as recorded in the ancient scriptures, does not fall within the purview of this paper [7].

Indigenous medicinal knowledge (IMK): overview

Advancement of human existence and culture has consciously or unconsciously been associated with and prejudiced by the surrounding environment, especially the vegetal world. Ethnic groups are repository knowledge of traditional medicine. Many tribal groups have been using several plant or animal product for medicinal preparations and these medicines are known as ethnomedicine. Consequently tribal peoples become the store-house of knowledge of many useful as well as harmful plants, build up knowledge and enrich through generations and passed on from one generation to other, without any written documents.

IMK or Indigenous knowledge of medicine or ethnomedicine is the area of anthropology that studies different societies’ notion of health and illness, including how people think and how people act about well being and healing. Medicine like language, song, and politics is a subset of culture which is situated locally [8]. Every society has its own cultural believe, own medical style about the body and illness causation together with societal norms concerning when, why and who to seek medical help comprise one’s “culture of medicine” or ethnomedicine.

Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being. Countries in Africa, Asia and Latin America use traditional medicine (TM) to help meet some of their primary health care needs. In Africa, up to 80% of the population uses traditional medicine for primary health care. In industrialized countries, adaptations of traditional medicine are termed “Complementary” or “Alternative” medicine (CAM). Traditional medicine (TM) describes a group of health care practices and products with a long history of use. It frequently refers to medical knowledge developed by indigenous cultures that incorporates plant, animal and mineral-based medicines, spiritual therapies and manual techniques designed to treat illness or maintain wellbeing [11].

According to the World Health Organization (WHO) the definition of traditional medicine may be summarized as the sum total of all the knowledge and practical, whether explicable or not, used in the diagnosis, prevention and elimination of physical, mental or social imbalance and relying exclusively on practical experience and observation handed down from generation to generation, whether verbally or in writing.

Importance of TIMK

Since the beginning of civilization, people have been using plants for medicines. Ethnobotany is the study of how people of a particular culture and region make use of indigenous plants. It studies the relationship between people and plants and includes various aspects of how plants are used as food, cosmetics, textiles, in gardening, and as medicine. In fact, many of the drugs today, have been derived from plant sources.

Ethnomedicine is based on ancient written source, of course, along with knowledge and practices that have been handed down orally over the centuries. It is also similar to traditional medicine or medical anthropology on that it studies the sensitivity of and context in which traditional medicines are used. The spiritual or religious aspect of health and sickness has been an integral component of the ethno medicinal practice for centuries.

Some importance of TIMK are as follows :-

- Uses of Ethnomedicine locally is the one and most suitable way to overcome the
health problem of tribal community as common particularly in those areas, which have little or no access to modern health services such as the interior villages because of their communication problems, economical problems etc. Moreover ethnomedical knowledge plays a vital role for tribal health care.

- Traditional medicine is not only a vital source of health care, but also an important source of income for many communities. Traditional medicine may even form an integral part of a community’s identity.

- TMK may also contribute to a community’s way of life and spiritual beliefs. For example, traditional African medicine is characterized by a holistic world-view that embraces people, animals, plants, and inanimate objects in an inseparable whole from which all beings derive their life force.

- For the purpose of development, improvement and quality control of modern medicine it is needed to acquire great knowledge about ethnomedicine. Because medicinal plants seem to be very important components of medicine from ancient times. Mankind has been continuously using the plants in one or the other way in the treatment of various ailments. In India, the sacred Vedas dating back between 3500 B.C and 800 B.C give many references of medicinal plants. One of the remotest works in traditional herbal medicine is “Virikshayurveda”, compiled even before the beginning of Christian era and formed the basis of medicinal studies in ancient India;

- It has been seen that self-treatment is usually the first therapeutic choice in both urban and rural areas which support the interest in the medical knowledge of laypeople. Unfortunately, it seems that cost of drug development increasing rapidly, thus it become difficult to prepare a noble drug at a lower cost. Through traditional or Ethnomedicinal knowledge we can overcome and some time control general diseases in lower cost at our home;

- Medicinal plants and knowledge of their use are a thread that links education and knowledge institutions, health and population issues, sustainable development, environmental and cultural issues, gender, and rural, urban and private sector strategies.

- WHO has acknowledged that “traditional, complementary, or alternative medicine has many positive features, and that traditional medicine and its practitioners play an important role in treating chronic illnesses, and improving the quality of life of those suffering from minor illness or from certain incurable diseases.

**Importance of documenting TIMK**

Indigenous peoples are the repository of unique knowledge of the natural resources on which they depend around the world. Researches show that the indigenous knowledge of medicinal plants by human being is decreasing in alarming rate. The main reasons that contribute in the loss of indigenous knowledge are rapid land degradation such as accelerated destruction of forests, people’s access to modern medicine and exposure to modern culture, and acculturation or adoption of modern culture. This shows that the passing down of customs from generation to generation is now in imminent danger of disappearance. The vast knowledge on traditional uses of plants is not fully documented and most of the knowledge is conveyed from generation to generation by word of mouth. Documenting IMK may help to preserve tacit indigenous medicinal knowledge. Today, the cultural survival of many indigenous communities is threatened, and some traditional systems of disseminating knowledge may already be lost. Modern lifestyles and the disruption of traditional ways of life may cause younger generations to lose interest in learning about traditional medicine. Traditional languages used to pass down information may no longer be as widely understood. Documenting IMK may help preserve this knowledge for future generations.

Documenting tacit indigenous medicinal knowledge (TIMK) may also improve the use of Ethnomedicine. Documentation can be a vital step in facilitating research on TM safety and efficacy. In addition, documentation may assist with clinical practice and teaching. Given the important role traditional medicine plays in providing health care, documenting TMK may help improve public health.
Preserve cultural heritage

In order to conserve traditional medicine knowledge, it is necessary that inventories of plants with therapeutic value are carried out, and the knowledge related to their use documented in systemic studies. These studies can have other values too for society besides conserving traditional knowledge, for they can help to identify plants with market potential that can generate incomes for local communities. Hence, documentation of cultural heritages as a whole of the country in particular is one of the ways in preserving the indigenous knowledge of the people on medicinal plants before it is lost irretrievably.

Use of plant for modern drug discovery

The use of plants for health purpose started long time ago, probably at the first moment when a human being got ailing. Some 3000 years B.P, humankind was well aware of the medicinal properties of some plants growing around him [9]. The use of plants to cure diseases and relieve physical sufferings has started from the earliest time of mankind’s history [4]. Cotton [2], in his book explained that the use of plants as medicine by traditional people has laid basis for the discovery of modern medicine. Slish et al. (1999) studied Traditionally used vasoactive medicinal plants and based on their result have suggested that ethno-directed collection is more efficient means of drug discovery than random plant screens. So looking for new medicinal compounds from natural sources, especially plants, makes a great deal of sense and leads to savings of both time and money. Historically, botanicals have been our most fruitful arena in the search for new medicine. Searching new drug from traditionally used medicinal plants can therefore be the shortest path to success.

Preserving of biological diversity

The loss of biological and cultural diversity is unprecedented global crisis [12]. According to the 1997 International Union for Conservation of Nature (IUCN) Red List of Threatened Plants compiled by the World Conservation Union, worldwide 13.8% of vascular plants are imperiled. In addition, much of earth's biodiversity is clustered in tropical regions. Indigenous peoples populate many of these “hotspots” of diversity. At the current rate of worldwide ecological destruction that includes extinction rate one hundred to a thousand times faster than before the arrival of Homo sapiens we may be forever losing potentially lifesaving new medicines. The loss of biological diversity is closely connected to the loss of cultural diversity, particularly in traditional and indigenous communities. The increased demand for medicinal plants by the majority of the people in developing countries has been met by indiscriminate harvesting of spontaneous flora including those in forests [3]. This has resulted into extinction of certain plant species and others becoming endangered. Furthermore, the widespread use of TM, the tremendous expansion of international herbal products markets and the great commercial profits from TMs and plants have brought serious problems of global biodiversity loss. Enormous quantities of raw materials of medicinal plants are required by the pharmaceutical herbal production needs. As a consequence, many plants have been over collected and become endangered species.

Defensive protection of indigenous knowledge

Documenting TMK may also be useful for defensive protection of traditional medicine. Defensive protection prevents third parties from improperly obtaining IP rights over TMK. Documentation is necessary to obtain certain types of IP protection, which may help TMK holders to market traditional medical based products and services. The most prominent example of defensive protection has been the Traditional Knowledge Digital Library (TKDL) established by the government of India. Hence, it is noted that TKDL is concerned only with the documented / recorded knowledge, i.e., explicit knowledge of those traditional medicines, which have been disclosed in writing in ancient scriptures.

Promoting commercialization of TMK

Documentation may also encourage commercialization of TMK. Documentation may also facilitate investment and innovations related to traditional medicine. TMK can be useful for bioprospecting, and may facilitate basic research on the healing properties of medicinal plants. For example, in South Africa, the Research Group for Traditional Medicines has established a database to improve research on TM. The Group aims to provide a scientific infrastructure for the use of TMK, improve communication between conventional and traditional practitioners, promote the use of TM and build human resources.
Conclusion

Documentation of TIMK has broader importance. Documenting traditional knowledge is complex, and potential challenges should be resolved prior to any documentation. Failure to address these issues in advance may result in loss of IP protection, misappropriation of resources, legal challenges to ownership and failure to adequately utilize TMK. TMK holders have limited control over TMK which is publicly available. While this information may have initially been released for altruistic purposes, third parties are able to commercialize TM in ways TMK holders may find objectionable. For example, a foreign manufacturer might choose to market a traditional herbal medicine for traditionally contraindicated symptoms. In addition to safety concerns, such marketing efforts may negatively affect the reputation of the traditional medicines or groups involved.

References