CHAPTER: VII

Conclusion

This chapter deals with the conclusion part of the thesis. The chapter is bifurcated into three parts; one is observation; second one is recommendations and third one is further research studies. Observation part deals with the various points which were observed by the researcher while doing work in the field and on the basis of observation the second part is based i.e. recommendations; what is felt by the researcher for the betterment of the TKHs are recommended as suggestions. The further research studies open the new opportunities for the researchers in this field and it will boost the proper preservation and utilization of TK.

7.1. Observation:

India is known for its biodiversity. India is one of the leading exporters of plant based medicinal raw materials. The country has rich resources of traditional knowledge as well as good number of scientific and technical research institutions for evaluation, testing the traditional practices and traditional knowledge and ideas. A large number of people in India rely on plant based system for treatment of diseases and traditional knowledge. Traditional knowledge resources in India are enormous deep and diverse. Traditional knowledge is varied ranging from treatment of diseases, environment sustainability, climate change, resource management and food processing to water conservation and grain storage. Traditional knowledge resources are sometimes place specific and used to solve local problems.

It is true that a lot of TK is in oral form and there were no written documentary records. Acquiring it in recorded form is a great challenge. A lot of indigenous knowledge is still confined to local communities and tribes and require to be made known to the public at large after its thorough evaluation and researching its scientific basis. Traditional knowledge is being created at every moment, every day as it evolves as individuals and communities respond to the challenges posed by their social environment.
It has been found that the area predominately covers the rural as well as the tribal population and they are the custodians of traditional knowledge associated with their surrounding biological resources. Due to recent developmental activities and market inclination, a decline in traditional knowledge has been observed. The digitization of the traditional knowledge is a challenging issue. As the tacit knowledge associated with the experience of the people cannot be scanned and digitized.

The TKH used plant species collected or purchased from the local area for medicine in traditional healthcare system. About 95 plant species used by the TKHs studied as medicine for the cure and treatment. TKHs used these medicinal plants for the treatment of a number of diseases from cold cough to cancer. Every TKH has his own system, treatment principles, believes and medical ailments, though they have more or less similarity with each other.

People preferred to visit TKHs to diagnose their problem although they know some medicinal plants themselves as the effectiveness of the herb was connected to the knowledge of the exact nature of diseases. In case of traditional medicine given by the TKHs, the methods of use, the dosage and the duration differ from one herbalist to another and also from one locality to another. Traditional knowledge based medicine prescriptions also vary from person to person. For instance Turmeric is effective against various diseases but how much quantity one can take that is the main issue. As per Vaid Ram Nivas Padha, the medicines differ from patient to patient and the right prescription provides the better results.

In the field area surveyed, most of the traditional knowledge practitioners are beyond a certain age. If someone from the next generation in their family, friend is not adopting and continuing the practice, there is every apprehension that traditional knowledge and subsequent experiential knowledge acquired may be lost forever. It is therefore essential that this knowledge which by and large is in tacit form be adequately preserved through recordings of oral communications.

Traditional and local communities justly cherish traditional knowledge as part of their very cultural identities. Maintaining the distinct knowledge systems that give rise to Traditional Knowledge and its proper documentation in the form of traditional knowledge digital libraries (TKDL) can be vital for their future well-being and sustainable development and for their
intellectual and cultural vitality. It is vital to sustain not merely the knowledge but the social and physical environment of which it forms an integral part.

The problems with the traditional knowledge resources are that such resources are transferred orally from one generation to another generation within a family, most of these resources are known locally and some of practices remain confined to communities and tribes. The practitioners of traditional knowledge generally don’t want to completely disclose their system of operation. Most of the practitioners of traditional knowledge don’t know how to create a commercial value out of their ideas. Moreover, traditional knowledge practitioners have traditionally practiced this with the intention of welfare and well being of their local communities instead of making money out of it.

Large scale urbanization, break down of joint family system, allurement of younger generation towards other lucrative work, lack of recognition of practitioners of traditional knowledge, extinction of plant species due to rapid deforestation and global warming, fast life and changing life styles, lack of awareness of patents and IPR among the custodians of traditional knowledge are the potent problems and challenges for adequate documentation and protection of traditional knowledge.

Traditional knowledge resources are fragmented and scattered among the members of communities of practice and may disappear if not properly transferred to descendents of communities. Most of this knowledge is in the tacit domain and remains confined to local communities and tribes. Sometimes it is not even known beyond ambit of community of practice. There are several other problems and challenges for adequate documentation and dissemination of traditional known resources. Whatever exists in the recorded form may be in languages such as Sanskrit, Urdu, Tamil, Pali, etc. Besides linguistic problems, wide spread illiteracy, cultural barriers and fears of biopiracy and idea robbery are other impediments.

7.2. **Recommendations:**

Communities practicing potential traditional knowledge based systems require to be incentivized for disclosing their ideas in the larger public interest and are made aware of the system of filing patents to protect their knowledge, ideas and practices. Scientific organizations can help
such communities to do this job. The use of traditional knowledge of Kanis community in Kerala by the National Tropical Botanical Research Institute, Thiruvanthapuram, Kerala to produces a stress-busting drug called ‘Jeevani’ is a good example of recognition and reward for disclosing traditional knowledge. Half of the royalties and license fees from the sale of ‘Jeevani’ are paid to Kanis.

For the digitization of this type of knowledge, it is suggested that a documentary of their day to day work should be prepared and that too with their permission and then that knowledge can be used and stored for generations to come. The written record of their own preparation of medicine, if available can be digitized and saved. The knowledge associated with the Traditional knowledge holders be scientifically authenticated and protected for Intellectual Property Rights. Some incentives can be given to traditional knowledge practitioners to report their knowledge for recording. It can be preserved if the holders of this kind of knowledge are prepared to divulge their knowledge and expertise through various means like video recordings, personnel training were made. Efforts are now necessary for capturing traditional knowledge from TKHs by creating videotapes of especially illiterate practitioners of traditional knowledge including show how kind of information. Such custodians of traditional knowledge be incentivized and motivated to divulge their ideas in the larger interest of the humanity by protecting their IPRs.

As traditional medicine is the first level of contact for rural people when they require medical care, it is imperative for governments to take immediate steps to introduce the use of traditional medicine to supplement primary health centers. To promote the potential role of traditional medicine, financial support should be provided. Inventory and documentation of various medicinal plants and herbs used to treat common diseases should be developed.

The first and foremost step would be the documentation of the ethno-medicinal uses of the plants throughout the country. The traditional knowledge could be translated into commercial products on industrial scale, and benefit sharing with all stakeholders. Documentation of such ethno-medicinal data on biological resources will be essential steps for bio prospecting. The medicinal plant resources of forest origin play a significant role in the day-to-day life of the tribal people of the remote villages in their traditional systems of ethno pharmacology.
Sources of Traditional Knowledge on Medicinal Plants in the Western Himalayan Region

Linkages between pharmaceutical companies and traditional knowledge practitioners can also help the pharmaceutical industries to test and develop new formulations. Some of the traditional knowledge and ideas can provide critical inputs in medicine and pharmaceutical research and develop much safer formulations for treatment of diseases and even may be helpful in finding solutions to some chronic diseases. Linkages between universities and grassroot innovators, synergy between local communities, research institutions, pharmaceutical companies and other industries is essential for putting traditional knowledge to greater use. There is a lot of room in a country like India for work on ancient wisdom from the perspective of modern science.

Scientists may look beyond their laboratories and establish linkages with traditional knowledge practitioners to utilize traditional knowledge for modern research. Some traditional knowledge practitioners have excellent knowledge of herbs collection, identification and use and exchange of ideas between traditional knowledge practitioners and scientists may lead to breakthroughs in some areas of modern research. Industries and scientific organizations; NGOs may help such communities to create economic value out of their traditional ideas.

Some efforts have been initiated for preservation of traditional knowledge resources but these efforts are not commensurate with the huge traditional knowledge resources actually existing in India. Local people have wealth of information on usage of plants in their respective areas. They can provide adequate leads for scientific validation of their traditional knowledge and develop suitable molecules for traditional knowledge based drugs. For this more comprehensive databases of worthwhile traditional knowledge are required to be created.

India has enormous potential for export of plant based raw materials for developing health care products and government should encourage this sector. The state of Himachal Pradesh has taken a good initiative in encouraging large scale plantation of medicinal plants in the state. This program may help the Himachal to become a major supplier of medicinal plant based raw material, boost the economy of the state and make this state still more greener and environmental friendly. Some of the other states like H. P. should also encourage plantation of medicinal plants suitable to their climatic conditions. This will particularly help small farmers and household women to enhance their family income as well as help the nation to develop into a major exporter of raw material and medicinal plant based products.
Some efforts have been initiated at different levels for the documentation and digitization of traditional knowledge resources. The Traditional Knowledge Digital Library (TKDL) is an excellent effort for digitization of existing traditional knowledge information resources. This library should continue to digitize other available resources and coordinate digitization work of other manuscripts of traditional knowledge available at other places and render consultancy and help to such institutions to do this work. There are several other efforts going on to create databases of traditional knowledge but what is lacking is synergy and coordination in such efforts and one organization may not be knowing what the other is doing. The library and information centers may act as connecting link between all these organizations for a smooth going.

A systematic and coordinated effort is desired at the national level to explore such resources and develop suitable databases of documents and consultants in the interest of the people of India. Public libraries independently or in the collaboration with other organizations can play a major role in collection and organization of information pertaining to their areas of operation and create a database of available information. Such databases can provide critical information inputs to scientific institutions to test the veracity of facts and facilitate further extension and modification of knowledge through modern research.

Local health traditions can be put into practice only by creating awareness among the public and its participation. Health education should be given to the people especially concerning the use of traditional herbal remedies. The education should be imparted regarding; the identification of various medicinal plants and their usage for the treatment of common diseases. Incorporation of these subjects in the regular school curriculum, prepares the young mind to face the challenges of life in the modern era. Practical guidelines should be provided to institutions, universities artists and independent researcher in order to collect document and archived the TK. Resource/Education centre should be developed on TK at regional level to collect the information from a region. The regional level offices should have contact at national level offices and international level offices for proper utilization of this knowledge. Establishment of community gardens and kitchen gardens should be encouraged to preserve the medicinal plants.
7.3. **Further research studies:**

Further research on modern scientific line is necessary to improvise the efficacy, safety and validation of the traditional knowledge. Greater efforts are required to protect traditional knowledge of the local people so as to prepare a comprehensive account of it, which will open new vistas in plant research and lead to healthy future. The proper validation of the traditional medicine by the pharmaceutical companies is required. The two different aspects of research in the field of TK are-TK research (means comprehensive and holistic collection of information held by TKHs) and research guided by TK (means western science guided by a TKH). Thus, the researcher suggests further research in the field:

a) In collaboration with the pharmaceutical agencies and TKHs analysis of traditional medicine can be taken out.

b) Bio-analysis of medicinal plants can be carried out to find the chemical agents reacting against a number of diseases.

c) Online databases can be created for location, identification and access to TKHs.

The greatest challenge in the new millennium is to preserve and promote the TK and folk medicines. The knowledge behind the traditional medicines requires recognition, respect and understanding in the light of modern medicines. The researcher concludes the research work done by her with the quote of WIPO (2009):

“One of the challenges posed by the modern age is to find ways of strengthening and nurturing the roots of traditional knowledge, even in times of social dislocation and change, so that the fruits of traditional knowledge can be enjoyed by future generations, and so that traditional communities can continue to thrive and develop in ways consistent with their own values and interests. At the same time, traditional knowledge holders stress that their traditional knowledge should not be used by others inappropriately, without their consent and arrangements for fair sharing of the benefits; more generally, it leads to calls for greater respect and recognition for the values, contributions and concerns of traditional knowledge holders.”