

*Review and Analysis of*  
**Secondary Information Sources on the  
Processes and Procedures for the Documentation  
and Registration of Traditional Knowledge  
in Nepal**



IUCN Nepal  
September 2004



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The World Conservation Union

## Executive Summary

Nepal's wealth in biodiversity can be attributed to the extreme altitudinal and climatic variations found within a short distance. The country has 118 ecosystem types, 75 vegetation and 35 forest types, compared to only 0.1% of land area occupied by the country in global scale. Equally rich is the cultural diversity of the country. The 2001 Census has identified 103 different ethnic and caste groups within Nepal. These communities' traditional knowledge, skills and practices of protecting the biological resources and sustainable use of these has been catalytic in biodiversity conservation over the ages.

Nepal, a signatory of the Convention on Biodiversity (CBD), is committed to the conservation of biological diversity, sustainable use of natural resources and institutionalization of equitable sharing of benefits arising out of the biological resources and the traditional knowledge (TK) linked to the use of resources. Protection of indigenous knowledge associated with biological resources is, therefore, necessary to exercise provisions and obligations of CBD. It is important to document communities' TK for enhancing conservation efforts as well as for protecting them from erosion and misappropriation. Documentation of biological resources and associated TK is also essential with Nepal's entry into the World Trade Organization (WTO).

Several initiatives have been put forth by His Majesty's Government of Nepal (HMG/N) in order to implement the CBD obligations. A draft Bill and a draft policy on Access to Genetic Resources and Benefit Sharing (AGRBS) have been developed in addition to the formulation of Nepal Biodiversity Strategy. The Ministry of Forests and Soil Conservation (MFSC) conducted a pilot biodiversity documentation project in three selected Village Development Committees. Building upon this experience, IUCN – The World Conservation Union, Nepal in collaboration with MFSC initiated a project '*Building Capacity to Protect Biodiversity and Indigenous Rights through Documentation and Registration of Traditional Knowledge in Nepal.*' This is a step forward to implement the priority programmes of the Nepal Biodiversity Strategy. The project aims to strengthen the capacity of HMG/N and other local institutions to facilitate biodiversity conservation and the protection of TK through documentation and registration. The project's long-term objectives are to conserve biodiversity through the promotion of TK associated with biological resources, to protect and guarantee the rights of local and indigenous communities over TK by establishing a data bank through documentation and registration; and to standardize access and benefit-sharing regime in order to facilitate the equitable sharing of benefits out of access to and use of genetic resources and TK.

This document reviews and analyses the secondary sources on the processes and procedures of biodiversity and TK documentation in Nepal and elsewhere, mostly, in the countries of South Asia and Asia Pacific region. Special focus has been given to India, where documentation of biological resources and associated TK has taken place to a considerable extent.

The document reveals that few countries have started the TK documentation exercise. India has the most extensive experience in biodiversity and TK documentation. Sri Lanka, Philippines, Indonesia, Malaysia and Ecuador have also initiated the documentation work. In most countries, information related to biological resources exists in the form of resource inventory. Documentation about the biological resources and use associated with such resources by local people are

found only in ethno biological studies. In some countries, TK information has been codified and developed in computer databases at national level. Most existing databases and registries are found to have information on traditional medicine. Government organizations, non-government Organizations, research institutions and the scientific community are found to be involved in the documentation exercises.

Biodiversity registers, such as the Community Biodiversity Register (CBR), which are quite widespread in India as well as the TK databases such as the Traditional Knowledge Digital Library (TKDL) in India are convincing methods found for TK documentation. Formats used for documentation are found to be different depending upon the objectives of the documentation and the organization facilitating the exercise.

In the review, four cases of biodiversity and TK documentation from India, Ecuador and Nepal have been presented in detail. Analysis has focused mainly on the aspects of making documentation participatory and reliable; receiving benefits from documentation; risks and challenges associated with documentation; capacity building approaches; custodians of documented information; benefit sharing mechanisms; and role of customary laws. Based upon the analysis, an approach has been suggested for the TK documentation in Nepal.

The approach of documentation of biological resources and relevant TK in Nepal should focus mainly on actions that create awareness, recognition and appreciation of TK so that conservation accompanied by benefit sharing becomes the agenda for resource management. Fostering empowerment of local communities and creating an environment whereby they can benefit from their conservation and sustainable utilization practices is necessary for enhancing biodiversity conservation through documentation. Assessment of Intellectual Property (IP) of the communities over the knowledge they possess should be central of any documentation initiative. It is important that communities' 'Prior Informed Consent' be sought not as an obligation to document their TK but in terms of their understood origin. Community Biodiversity Register preparation should take the following systematic steps: national level consultation, site selection, district level consultation, capacity building of district level resource persons, local level consultations and awareness raising, capacity building of local level resource persons, biodiversity and TK data collection. The part of the register that documents traditional indigenous knowledge of local communities will be handed over to the knowledge holders and they themselves have to find ways to safeguard their knowledge.

Legal validity of the prepared Community Biodiversity Register is crucial. In regard to this, it is important that the Draft Bill on Access to Genetic Resources and Benefit Sharing be modified and enacted at the earliest. It is also important to initiate the process of sharing the benefits out of the use of resources and the knowledge associated in line with the Draft Bill.

## List of Acronyms and Abbreviations

AAAS	American Association for the Advancement of Sciences
AGRBS	Access to Genetic Resources and Benefit Sharing
AVP	Arya Vaidya Pharmacy
BCPP	Biodiversity Conservation Prioritization Project
BCPP-PBR	Biodiversity Conservation Prioritization Project-Participatory Biodiversity Register
BMC	Biodiversity Management Committee
BRPs	Block Resource Person
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CBR	Community Biodiversity Register
CES	Center for Ecological Studies
COP	Convention of Parties
CD-ROM	Compact Disk-Read Only Memory
CSIR	Center for Industrial and Scientific Research
DDC	District Development Committee
DDS	Deccan Development Society
DFO	District Forest Office
DRPs	District Resource Person
EDON	Ethnobotanical Database of Nepal
ESON	Ethnobotanical Society of Nepal
EU	European Union
FECOFUN	Federation of Community Forest Users of Nepal
FLODON	Flora Database of Nepal
FRIS	Farmers' Rights Information System
FRLHT	Foundation for Revitalization of Local Health Traditions
FSI	Fundación Sabiduría Indígena
FUDECI	Fundación Para el Desarrollo de Ciencias Fisicasy Naturales
GATT	Global Agreements on Tariffs and Trade
GEF	Global Environmental Facility
GIS	Geographical Information System
GOI	Government of India
GPS	Global Positioning System
HMG/N	His Majesty's Government of Nepal
IAAS	Institute of Agriculture and Animals Sciences
ICBG	International Cooperative Biodiversity Group
IGC	Inter-Governmental Committee
IIRR	International Institute of Rural Reconstruction
IISC	Indian Institute of Science
IK	Indigenous Knowledge
ILO	International Labor Organisation
IP	Intellectual Property
IPC	International Patent Classification System
IPDL	Intellectual Property Digital Libraries
IPGRI	International Plant Genetic Resource Institute
IPRs	Intellectual Property Rights
ITDG	Intermediate Technology Development Group
IUCN	The World Conservation Union
KBSAP	Karnataka State Biodiversity Strategy and Action Plan
KFRI	Kerala Forest Research Institute
KSSP	Kerala Shastra Sahitya Parishad
LiBIRD	Local Initiatives for Biodiversity Research and Development

MAPDON	Medicinal and Aromatic Plant Database of Nepal
MFSC	Ministry of Forest and Soil Conservation
MSSFR	M.S. Swaminathan Research Foundation
MTA	Material Transfer Agreements
NARC	Nepal Agriculture Research Council
NBAP	Nepal Biodiversity Action Plan
NBS	Nepal Biodiversity Strategy
NEPDISC	Nepalese Plant Database Information Service Centre
NGO	Non-Governmental Organization
NIF	National Innovation Foundations
NISCOM	National Institute of Science Communication
NPGR	National Plant Genetic Resources Laboratory
NRIUTK	National Register of Innovations and Unique Traditional Knowledge
NSF	National Science Foundation
NST	Nagarika Sewa Trust
PBR	Participatory Biodiversity Register
PBRP	People Biodiversity Register Project
PHIRCSDIK	The Philippine Resource Centre for Sustainable Development and Indigenous Knowledge
PRP	Panchayat Resource Person
R&D	Research and Development
RANWA	Research and Action in Natural Wealth Administration
RFSTE	Research Foundation of Science, Technology and Ecology
SIPO	State Intellectual Property Office
SRISTHI	Society for Research and Initiatives for Sustainable Technologies and Institutions
TBGRI	Tropical Botanical Garden Research Institute
TCM	Traditional Chinese Medicines
TEK.PAD	Traditional Ecological Knowledge Prior Art Database
TK	Traditional Knowledge
TKDL	Traditional Knowledge Digital Library
TKRC	Traditional Knowledge Resource Classification
TRIPs	Trade Related Agreements on Intellectual Property Rights
TSM	Traditional System of Medicine
TU	Tribhuvan University
UK	United Kingdom
UN	United Nations
UNOCIAE-C	Union de Organizaciones y Comunidades de Angochagua, La Esperanza, y, Caranqui
URDIP	Unit for Research and Development of Information Products
US \$	United States' Dollar
USAID	US Agency for International Development
USC-Canada	Unitarian Service Committee
USPTO	United States Patent and Trademark Office
VDC	Village Development Committee
VLA	Vruksh Laksha Andolan
WCMC	World Conservation Monitoring Centre
WHO	World Health Organization
Wimsa	Working Group of Indigenous Minorities in Southern Africa
WIPO	World Intellectual Property Office
WRP	Ward Resource Person
WTO	World Trade Organization
WWF	World Wildlife Fund

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# 1. INTRODUCTION

## 1.1 BACKGROUND

### 1.1.1 Biodiversity of Nepal

Nepal consists of seven physiographic zones, namely, the Terai, Siwalik, Mahabharat Lekh, Midlands, Himalaya, Inner Himalaya and Tibetan Marginal Mountains from South to North (Hagen 1998). Due to extreme altitudinal variations ranging from less than 100m to over 8,000m, climatic conditions vary widely within a short distance. Nine bioclimatic zones exist in the country (NBS 2002). These climatic factors contribute to the rich biodiversity in Nepal.

Nepal stands 25<sup>th</sup> in terms of biodiversity richness in the global ranking (NBAP 2000). Owing to the unique variation in the altitudinal and climatic conditions, the diversity at all levels: genetic, species and ecosystem, is quite high. The high biodiversity of the country is also attributed to Nepal falling within two biogeographic realms: the Indomalayan and the Palaearctic realms. So far, 118 ecosystem types, 75 vegetation and 35 forest types, have been identified in the country (NBS 2002).

At the species' level, the diversity in flora and fauna of Nepal is quite rich in comparison to only 0.01% of the land area occupied by the country on the global scale. In terms of floral diversity, various sources estimate that there are 2,000 lichen species, 1,822 fungi, 687 algae, 853 bryophytes, 380 pteridophytes, 27 gymnosperms and 5,856 species of angiosperms (NBS 2002).

The faunal diversity of Nepal is also very rich. The Nepal Biodiversity Strategy (NBS) 2002 reports that 5,052 species of insects (Thapa 1997), 640 species of Butterflies (Smith 1997), 182 species of Fishes (Shrestha 2001), 143 species of Amphibians and reptiles (Shah 1995), 852 species of Birds (Grimmet *et. al.* 2000) and 181 species of mammals (Suwal and Verheugt 1995) have been enumerated so far (NBS 2002).

With regard to the agro-biodiversity, of the more than 500 edible species found in the country, 200 are cultivated. About 21% of the total land area is used for agriculture. Due to a high degree of agro-ecological diversity, agricultural biodiversity is also high in the country. About 120 wild relatives of commonly cultivated food plants such as rice, maize, wheat and millet have been reported (Regmi 1995 cited in NBS, 2002). 172 families, 294 genera and 551 species/subspecies of agricultural crops are grown in the country. At genetic level, crops such as rice (*Oryza sativa*), rice bean (*Vigna unbellata*), eggplant (*Solanum melongena*), buckwheat (*Fagopyrum esculentum*, *F. tataricum*), soybean (*Glycine max*), foxtail millet (*Setaria italica*), citrus (*Citrus aurantium*, *C. limon*, *C. medica*) and mango (*Mangifera indica*) have high diversity. As for example, farmers in Nepal grow more than 95 local aromatic and fine rice landraces (NBS 2002).

In terms of livestock diversity in Nepal, at least 17 species of livestock: 5 Bovidae, 7 Aves, 2 Equidae (excluding mules), 1 pig (*Sus scrofa*), 1 rabbit (*Oryctolagus canuculus*) and 1 elephant (*Elaphas maximus*) are found (NBS 2002). According to another source there are twenty-five native breeds of livestock species have been identified in the country so far. They are *Lulu*, *Achhami*, *Siri*, Terai, *Pahadi*, *Khaila* and Yak in cattle; *Lime*, *Parkote* and *Gaddi* in buffaloes; Terai, *Khari/Hill*, *Sinhal* and *Chyangra* in goats; *Lampuchhre*, *Kage*, *Baruwal* and *Bhyanglung* in sheep; *Hurrah*, *Chwanche* and *Bampudke* in pigs, *Sakini*, *Ghanti Khuile* and *Puwankh Ulte (Dumse)* in poultry and *Jumli* in horse (Neopane 2002; Neopane and Shaha

2003). They have been mostly characterized on phenotypic level and only few have been characterized on chromosomal level.

Considering medicinal and aromatic plants diversity, it has been reported that the medicinal and aromatic plant database of Nepal covers 1,624 species of plants belonging to 938 genera and 218 families. These are found in either wild or cultivated state (Shrestha *et al.* 2001). Nearly 300 species of medicinal and aromatic plants are commonly used in Ayurvedic preparation (NAA 1995, Cited in Upadhyay 2003).

In addition to the biological diversity, the cultural diversity of Nepal is also impressive. Details on various communities and their distribution are given in Annex 7. According to the Census 2001, 103 ethnic groups/castes with distinct traditions and dialects have been identified (CBS 2001).

These diverse communities in Nepal have been protecting their biological resources over the ages. There is a long history of protection of forested areas by communities (NBS 2002). Communities' traditional knowledge, skills and practices on protecting and sustainable use of biological resources have contributed to conservation, which has also been beneficial for the communities. With the advent of democracy in the early 90s, decentralization and peoples' participation in development activities have increased. The Nepal Biodiversity Strategy, 2002 has considered the documentation and registration of biological resources and the indigenous knowledge of those communities so as to avoid misappropriation of the resources and to ensure equitable sharing of benefits with knowledge holding communities in the future (NBS 2002).

### **1.1.2 Importance and Objectives of Biodiversity and Traditional Knowledge Documentation in Nepal**

The traditional social and cultural lifestyles of people in Nepal depend on use of available natural resources both for livelihood and commercial use. However, use practices and conservation efforts are poorly documented. It is, therefore, important to document such traditional knowledge (TK) not only for enhancing conservation efforts but also for protecting TK from erosion as well as misappropriation. The need and importance of the documentation may be summarized as follows:

- i. TK is disappearing rapidly; the reasons being urbanization, mass migration from rural to urban areas, market forces, modern agricultural practices replacing traditional ones, destruction of forests and natural habitats and so on. As a result, the TK holders are gradually losing their traditional practices;
- ii. The TK holders are at risk due to misappropriation of the biological resources and associated TK. There is a need to formally recognize the rights of local and indigenous communities in order to equitably share the benefits between knowledge holders and users of the TK;
- iii. The distribution of biological resources of Nepal is extended beyond its political boundary. Consequently, the knowledge associated is also distributed to a wider range beyond the political boundary;
- iv. Nepal has cultural shares with its neighboring countries. Several of its classical documents explaining the importance and use of varied biological resources are also

prevalent in these countries. For example, the *Ayurveda*, a classical ancient text, forms the basis of classical traditional health system and is being practiced in both Nepal and India. Mention may be made of *Kashyap Samhita* and *Sushrut Nighantu* which would elucidate the importance of regional cooperation. Knowledge about the existence of such documents and the practices based upon such classical literatures is necessary;

- v. Documentation of genetic resources is also necessitated by the fact that Nepal has entered into the WTO and it has obligations to document the genetic resources of the country; and
- vi. Documentation is necessary to assess, monitor and plan conservation and sustainable utilization of the country's biological resources. This is also required to standardize the framework for accessing genetic/biological resources and sharing benefits equitably from the utilization of the resources.

In order to meet the following objectives, documentation of biological resources and relevant TK is essential.

- To disseminate selected elements of the TK already in the public domain to wider audiences or to other groups such as other communities of TK holders for information sharing and public benefit;
- To preserve and promote non-codified TK of the knowledge-holding communities for the benefit of present and future generations and of the wider public;
- To prevent misappropriation of the biological resources and associated TK thereby protecting the right of traditional communities over the knowledge they possess-a defensive publication strategy;
- To facilitate access and benefit sharing mechanism between the users of the biological resources and associated TK and the knowledge-holding communities; and
- And above all, to assist communities to recognize and appreciate the significance of their TK system as viable strategy for the sustainable conservation and use of their biological and genetic resources and ensure the further development of traditional innovations and practices.

Nepal, a signatory of the Convention on Biodiversity (CBD), is committed to conservation and sustainable use of biological diversity and institutionalization of the process of equitable sharing of benefits arising out of the use of biological resources and associated TK. But community based TK of biological resources have neither been adequately recognized nor the rights over the benefits have been adequately guaranteed. Protection of indigenous knowledge associated with biological resources is, therefore, necessary to exercise provisions and obligations of CBD.

It is a well recognized fact that sustainable use of biological resources is instrumental in improving the standard of living of the people. Realizing the great potential of the unique and rich biological diversity, His Majesty's Government of Nepal (HMG/N) has formulated the Nepal Biodiversity Strategy in 2002 (NBS 2002). As a signatory to the CBD, Nepal in its first National Report to the Conference of Parties (COP) on CBD, has emphasized the importance of all life forms in the overall environmental conservation and their possible use

in socio-economic development of the country. Similarly, the second National Report acknowledges that biodiversity conservation is deeply rooted in Nepalese culture, and local people are involved traditionally in the conservation, management and utilization of biological resources. The report further acknowledges the importance of TK registration so that it could best be utilized for the conservation and sustainable use of biodiversity (MFSC 2002).

Ministry of Forest and Soil Conservation (MFSC/HMG/N) framed a draft Bill on Access to Genetic Resources and Benefit Sharing (AGRBS) in 2002. This Draft Bill proposes a *sui generis* system on documentation, registration and recognition of TK as rights of local and indigenous communities. A two-step mechanism has been proposed: the first step is the documentation of TK and biological resources by local communities with technical support from community based organizations (CBOs), non-government organizations (NGOs), local bodies and HMG/N. Second step is the establishment of a National Genetic Resources Authority by HMG/N - a competent authority that registers the documented biological resources and associated TK as well as regulates/facilitates access to the documented knowledge to ensure equitable benefit sharing. This registration provides legal validity to the documentation in terms of creation and definition of rights, duties and obligations relating to biological resources. While documentation can be carried out prior to the establishment of the Authority, the registration process will be dealt by the proposed Authority.

The MFSC/HMG in collaboration with IUCN Nepal and Unitarian Service Committee (USC) Nepal also conducted a pilot project to document biological resources and associated TK in three selected Village Development Committees (VDCs), representing low hill, the mid hill and the mountain region (Paudel *et al.* 2003). It was in line with the work of Local Initiatives for Biodiversity Research and Development (LiBIRD) and Nepal Agriculture Research Council (NARC) on agro-biodiversity. The International Plant Genetic Research Institute (IPGRI) supported the programme to achieve *in-situ* conservation of agro-biodiversity.

The current project '*Building Capacity to Protect Biodiversity and Indigenous Rights through Documentation and Registration of Traditional Knowledge in Nepal*' is a step toward implementing the priority programme of NBS. This project builds upon the experience gained from the pilot study undertaken by HMG/N. The project aims to strengthen the capacity of HMG/N and other local institutions to facilitate biodiversity conservation and the protection of TK through documentation and registration.

The project has the following long-term objectives:

- i. conservation of biodiversity through the promotion of TK associated with biological resources;
- ii. protection and guaranteeing the rights of local and indigenous communities over TK by establishing a data bank through documentation and registration; and
- iii. standardization of access and benefit-sharing regime in order to facilitate the equitable sharing of benefits out of access to and use of genetic resources and TK.

In order to achieve these objectives, the following specific action points have been envisaged.

- create partnership of different stakeholders active and interested in biodiversity-related TK;
- clarify and promote the roles of various actors-Community Based Organizations, Non-governmental Organizations, Government line agencies and the proposed Registration Authority--in the protection of indigenous rights;

- develop appropriate systems and processes for the documentation of TK related to the conservation and sustainable use of biodiversity;
- demonstrate how the proposed documentation system fits into the existing legal framework; and
- raise awareness and develop capacity of national and local government authorities, institutions, civil society groups and communities.

The project has been divided into three phases:

Phase I:      Learning phase

Activities in the learning phase aims to build a knowledge base required for the documentation and registration of biological resources and associated TK in Nepal. This also includes analysis of existing legal instruments and regulatory mechanisms on access and benefit sharing.

Phase II:      Testing and development phase

This phase will focus on development and testing of appropriate systems, processes and partnerships required for biodiversity and TK documentation. This phase will set the framework for the documentation and will recommend measures for developing appropriate systems at the local, the regional and the national levels.

Phase III:      Full implementation phase

This phase will include the identification, documentation and registration of TK across the entire country. Activities in this phase will build upon the inputs from the first and second phases. The third phase is, however, beyond the scope of the current project.

## **1.2 INTRODUCTION TO THE REVIEW WORK**

This document is an outcome of the review, analysis and interpretation of secondary sources of information related to documentation of biological resources and associated TK in Nepal and elsewhere, mostly, in the countries of South Asia and Asia Pacific region. This review work is a part of the learning phase, building a knowledge base from lessons and experience of various countries. Special focus has been given to India, where documentation of biological resources and associated TK has taken place to a considerable extent.

This review work highlights the following aspects:

- government/non-government agencies, institutions and groups involved in the documentation and registration process;
- formats, methods and database used for TK documentation;
- process/procedures and capacity development approaches adopted;
- benefits of the documentation, anticipated and achieved, other than from regulating access to and benefit from biological resources; and
- appropriate approaches for biodiversity and TK documentation in Nepal.

### **1.3 REVIEW METHODOLOGY**

Available relevant documents related to documentation and registration of biological resources and associated TK, both published and unpublished, web-based resources such as digital databases were thoroughly searched and collected. Emphasis was laid on the TK documentation efforts in countries of Asia-Pacific and South Asia including Nepal.

The materials compiled were examined for what potentially fits the Nepalese context. The review and analysis laid special emphasis on the Indian experiences of biodiversity and TK documentation. Cases from countries other than from the Asia and Pacific, which have set good examples on the global context, are also cited as per their relevance to Nepal. Documents were reviewed in order to capture learning on:

- defining knowledge/resource ownership;
- putting TK to enhanced and productive use including education value;
- making documentation participatory and reliable;
- benefits to local people from participating in the documentation process; mechanisms for communicating the benefits, the risks (real and perceived) and challenges to their participation and strategy to overcome them;
- making documentation comprehensive yet cost- and time-effective; and
- the database and networking between local and central levels, required to create a user-friendly and accessible system that maintains peoples' rights over the use of biological resources.

Correspondence with various institutions, organizations and people was carried out during the review period to solicit information on processes, procedures and best practices in TK documentation. List of organizations and people contacted is given in Annex 1.

### **1.4 STRUCTURE OF THE REPORT**

The report has been arranged in the following format:

- ❖ The first chapter provides a general background and introduction of the joint project on "Building Capacity to Protect Biodiversity and Indigenous Rights through Documentation and Registration of Traditional Knowledge in Nepal" between HMG/N's MFSC and IUCN Nepal.
- ❖ The second chapter attempts to cover several important issues relevant to TK documentation and its protection. It also tries to link TK documentation with several international conventions and agreements. It highlights the advantages offered by Intellectual Property Rights (IPR) issue on TK documentation and registration.
- ❖ The third chapter enquires the efforts of government and non-government organizations for TK documentation in various countries with available information from India, Sri Lanka, Malaysia, Philippines, Indonesia, Ecuador and Nepal.
- ❖ The fourth chapter is the review of various approaches used for documenting TK. Two main components, namely, the biodiversity register and data base, have been described. Methodology manual that have been developed by various organizations for facilitating the documentation exercise are also provided in the same chapter.

- ❖ The fifth chapter presents, four cases of TK documentation initiatives, two from India, one from Ecuador and one from Nepal. Analysis of these cases and other available information sources has been discussed.
- ❖ The sixth chapter suggests an appropriate approach for documenting biological resources and associated TK in Nepal. Logical steps are provided in order to prepare biodiversity documents. Special emphasis has been given to the Intellectual Property (IP) aspect of the TK holding communities while suggesting the documentation approach.

## 2 BASIC CONCEPTS: BIODIVERSITY AND TRADITIONAL KNOWLEDGE PROTECTION

### 2.1 BIODIVERSITY AND TRADITIONAL KNOWLEDGE

As envisaged in the Nepal Biodiversity Strategy (NBS), biodiversity is the total variety of life on the Earth; it encompasses the total number, variety and variability of life forms, levels and combinations existing within the living world. As such, biodiversity means the richness and variety of living beings from all sources including, *inter alia*, terrestrial, marine and freshwater ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (NBS 2002).

Traditional knowledge (TK), used synonymously with indigenous knowledge (IK) is the knowledge, skills and practices possessed by a group of people or community developed around specific physical, ecological and cultural conditions in a particular geographic area transferred from one generation to the next over a period of time. TK is the collective knowledge possessed by the community and is embedded in their practices, institutions, relationships and rituals. It encompasses knowledge of traditional communities<sup>1</sup> about the relationship between people, their habitat and nature. According to Hansen and VanFleet (2003), TK includes mental inventories of local biological resources, animal breeds, and local plant, crop and tree species. It may include such information as trees and plants that grow well together, and indicator plants, such as plants that show the soil salinity or that are known to flower at the beginning of the rains. It includes practices and technologies, such as seed treatment and storage methods and tools used for planting and harvesting. TK also encompasses belief systems that play a fundamental role in a people's livelihood, maintaining their health, and protecting and replenishing the environment. TK is dynamic in nature and may include experimentation in the integration of new plant or tree species into existing farming systems or a traditional healer's tests of new plant medicines (Hansen and VanFleet, 2003). The CBD definition of TK is outlined in the box below.

#### ***CBD Definition of TK***

*"the knowledge, innovations and practices of indigenous and local communities around the world. Developed from experience gained over the centuries and adapted to the local culture and environment, Traditional Knowledge is transmitted orally from generation to generation. It tends to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, local language, and agricultural practices, including the development of plant species and animal breeds. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry".*

*(Ref: Convention on Biological Diversity*

*Available at: <http://www.biodiv.org/programmes/socio-eco/traditional/default.asp>)*

Nepal's Draft Bill on Access to Genetic Resource and Benefit Sharing (AGRBS 2002) defines TK as the "body of knowledge, practices, skills, innovations and technology

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<sup>1</sup> Traditional communities for the purpose of this document refers not specifically to the ILO 169 categorization but also "local communities embodying traditional lifestyles", as explained in Article 8j of the Convention on Biological Diversity.

belonging to, within and among local and indigenous communities and individuals associated to utilization, conservation and commercialization of biological resources". For the purpose of this document, this very definition has been considered and used synonymously with IK.

## **2.2 WHY TRADITIONAL KNOWLEDGE PROTECTION**

In recent years, global concern and activities for the protection of TK is rising. A fundamental difference as explained by Antweiler (1995) between traditional and scientific knowledge is that science is searching for information of universal significance, which is not context-related ('immutable mobiles'). TK, by contrast, is a social product which is closely linked or even restricted to a cultural and environmental context ('mutable immobiles') (Cited in Kievelitz 1995). This means that TK is dynamic, developing as the collective experience of specific social groups in interaction with their environment. TK is created, preserved, shared and protected within traditional and local communities who know best how to protect, conserve and use it in a sustainable manner. According to a World Health Organization (WHO) study in 1993, 80% of the world population depends upon traditional medicine for primary health care and almost similar number depends upon food produced through TK of plants, animals and farming system (Ullah 2002).

TK-holding societies are found to inhabit in both the developing and the developed world. However, they are more likely to be found in culturally and biologically diverse areas where people practice traditional and subsistence-based lifestyle. In countries with significant cultural diversity, where the biodiversity is also relatively high, the role of traditional communities in protecting and maintaining the biological diversity is quite important. Therefore, the protection of traditional societies and the knowledge they possess demands high attention.

The reason and need to recognize, promote, and protect traditional and local knowledge is four-fold: a) equity considerations in terms of the fact that the system of appropriation and reward currently in place, is not adequately recognized and compensated; b) conservation concerns in terms of the role of TK in maintaining biological diversity generating value for the global community; the preservation of traditional practices and culture provides a framework to encourage conservation of biological diversity; c) the prevention of appropriation by unauthorized parties the components of TK, i.e., to avoid misappropriation of biological resources; promotion of its use and its importance in poverty reduction and development; human rights dimension to the protection of TK; and d) non-economic purposes, such as a moral recognition of the knowledge holder (Correa 2001; Crucible II Group 2001).

## **2.3 TK AND INTELLECTUAL PROPERTY ISSUES**

In the existing scenario of globalization, monopolization and development, there have been concerns regarding TK and the possible use of Intellectual Property Rights (IPRs) for the protection of TK. IPRs are the legal protections given to persons over their creative endeavours and usually to give exclusive rights over the use of the discovery for a certain period of time (TRIPs WTO Website, [http://www.wto.org/english/tratop\\_e/trips\\_e/trips\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/trips_e.htm)).

The existing framework of IP laws that are recognized internationally are mainly those that have been identified by the Trade-Related Intellectual Property Rights Agreement<sup>2</sup>

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<sup>2</sup> TRIPS Agreement: Agreement on Trade - Related Aspects of Intellectual Property Rights, Apr. 15, 1994, 33 I.L.M. 1197

(TRIPS) and are governed by the World Trade Organization (WTO)<sup>3</sup>. They are:

- a) patents;
- b) copyrights;
- c) trademarks;
- d) geographical indications;
- e) protection of undisclosed information;
- f) layout designs of integrated circuits; and
- g) industrial designs.

Details of the use of these different kinds of IPRs can be found in (TRIPS 1994).

There are several views over the applicability of existing IPR system for the protection of TK. Considering the fact that TK is of collective nature, socially created through interaction among humans and non humans, it might not always be possible to attribute TK right as an innovation to a single individual. The details regarding applicability of the existing IPR system to protect the TK of local communities has been nicely analyzed in Ragavan (2001). According to the author, few of the existing IPR could be applicable for protecting the community rights. Trademark for example can be attributed to a certain tribe while geographic indications could echo communal sense, as it is based on location and method of production and is immaterial whether the producer is an organized corporation or a single individual. According to the Author, trade secret is possibly the best form of protection for the traditional knowledge amongst the prevailing IP regimes. A trade secret can consist of any pattern, device, compilation, method, technique, or process that gives a competitive advantage. Trade secrets are also the best form of IP for protecting any kind of undisclosed information. Infringement like using information without permission of the community can be effectively prevented by suing for misappropriation of trade secrets, benefiting the community (Ragavan 2001).

#### **Examples of Patents Provided to Misappropriation of TK**

##### **Turmeric Case**

*In 1995 the US Patent Office granted a patent for turmeric, a substance used for cooking and healing in India. The Indian Council for Scientific and Industrial Research (CSIR) opposed the application, claiming "prior art." The CSIR presented documents from "ancient Sanskrit text and a paper published in 1953 in the Journal of the Indian Medical Association," proving that the healing properties of turmeric had been in use for thousands of years in India. The patent was ultimately rejected because of the challenges.*

##### **Neem Case**

*Similarly the patenting of neem was another long drawn fight for India. W.R. Grace, along with the US Department of Agriculture, filed for a patent for neem for as anti-fungal product with the EU Patent Office. This patent was eventually revoked after six years when, at a hearing in Munich, the manager of an Indian Agricultural company proved that he had been using the neem extract for the same purpose several years before the patent was filed. The corporate vice president of W.R. Grace earned India's resentment when he dismissed the Indians' knowledge of the plant's uses as "folk medicine."*

*Source: Raghavan 2001*

In cases where existing intellectual property regime could potentially apply to protect knowledge, the prohibitive cost for registering and defending such IPRs may curtail effective

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<sup>3</sup> WTO Agreement: Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 33 I.L.M. 1144

protection (Hansen and VanFleet 2003). Many inappropriate patents granted to the properties of plants such as turmeric and neem which have been known in countries in South Asia were only overturned in recent years after lengthy and expensive legal battle. In one of the examples, it has been cited that a Shaman from Amazon challenged a 1986 US patent on the use of a rainforest plant called ayahausca (*Banisteriopsis caapi*). His testimony detailed prior healing properties, yet patent regulators refused to accept his evidence and upheld the original patent (Leahy 2004).

Majority of the authors and advocates believe that a combination of various existing IPR systems could be effective in protecting the intellectual property (IP) of the TK holders. Alternatively, an effective *sui generis* model -- a model of its own kind that incorporates the international obligation yet addresses the needs of protection of collective nature of TK system needs to be devised. A more detailed review on the issues surrounding IP can be found in the review report dealing with the legal and policy framework for the documentation and registration of TK in Nepal (ProPublic 2004).

## **2.4 INTERNATIONAL CONVENTIONS/AGREEMENTS AND THEIR RELEVANCE TO TK PROTECTION**

Various international gatherings have considered the issue of TK and rights of the knowledge holders. The two most important ones are the Convention on Biodiversity (CBD) and Trade Related Aspects of the Intellectual Property Rights (TRIPS). Other important conventions that have relevance to the protection of biodiversity and associated TK are provided in Annex 3.

CBD has recognized the importance of TK and knowledge holders in conservation and sustainable utilization of biological resources. It has also recognized the need and importance of acknowledging the collective right of the communities. Its strength lies in ensuring the Prior Informed Consent (PIC) and equitable benefit sharing.

### **Article 8(j) of Convention on Biodiversity**

*"Each contracting Party shall, as far as possible and as appropriate:*

*Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge innovations and practices"*

TRIPs, on the other hand, tends to impose private IPR over the biological resources (ProPublic 2004). Although TRIPs Agreement accelerates exploitation of genetic resources, it does not require the patent holder to disclose the source of origin, get 'prior informed consent' from the genetic resource/knowledge holders, or ensure that there is an equitable sharing of benefit (Ullah 2002). Similarly, Article 27.3(b) concerning "patent rights for plants and animals other than microorganisms and essentially biological processes for the production of plants and animals other than non-biological and microbiological processes" is strongly being criticized for not being supportive of the CBD provision of national sovereignty over their biological resources.

**Article 27.3(b) of TRIPS Agreement:**

*"Members may also exclude from patentability:*

*plants and animals other than microorganisms, and essentially biological processes for the protection of plants and animals other than non-biological and microbiological processes. However, members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four year after the date of entry into force of the WTO agreement."*

A more detailed analysis on the conflicts over the IPR provisions of TRIPs agreement and the CBD is done in the review of legal and policy framework for documentation and registration of TK in Nepal (ProPublic 2004).

## **2.5 DOCUMENTATION: A MECHANISM TO PROTECT BIODIVERSITY AND TK**

Documentation of biological resources and associated TK is emerging as one of the mechanisms for protecting both the biological resources and associated TK. Such documentation encompasses recording and writing of the biological resources and associated knowledge that the traditional communities practice for the conservation, management and use of the resources. Documentation could take various forms and could be done by different means with the objective that the information remain in a codified form, thus transferring the knowledge from oral to written. In the past, TK documentation efforts were geared mainly towards preserving TK and disseminating information about the traditional practices for the benefit of mankind. In recent years, documentation has shifted its focus primarily on safeguarding the intellectual property (IP) of TK holders.

Approaches to documentation and methods followed vary in accordance with the objectives for documentation. According to the Intergovernmental Committee (IGC) on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of the World Intellectual Property Organization (WIPO), the objective of TK and genetic resources documentation needs to be clarified before starting documentation process. It has outlined that the objectives for TK documentation could be one or the combination of the following:

- prevent others from claiming IP rights such as patents over TK and associated biological resources;
- develop IP rights over TK and associated biological resources as a basis for a community industry;
- prevent others from misusing the TK and any associated biological/genetic resources
- avoid culturally offensive use of TK;
- license the use of TK and associated resources to commercial partners;
- disseminate selected elements of the TK to wider audiences or to other groups such as other communities of TK holders; and
- preserve TK for the benefit of future generations of the community.

*(Source: WIPO/GRTKF/IC/4/5, 2002)*

Various forms of TK documentation exist. These are in the forms of audio or visual tape recording, documentation of research result done by individual researcher, indigenous

knowledge journal or registries of community knowledge. The latter is becoming very popular. According to the Crucible Group<sup>4</sup>, registries can be used in the following purposes:

- To raise community consciousness about the content and value of indigenous and local communities and their knowledge;
- To work towards long term knowledge and natural resource conservation and promotion;
- To interfere with outside parties who might be willing to pay to obtain information that has been organized and centralized in the registry;
- To protect against bio piracy; and
- To form part of a legislated system of asserting IPR over knowledge.

(Crucible Group II 2001).

As mentioned by Hansen and VanFleet (2003), biodiversity registers could be established or managed, either locally, within the community, or externally, managed at national or international level by the government, NGOs, museums or libraries. Registries can also be public or private. Public registries place information in the public domain and serve as a form of prior art or *defensive disclosure*. A defensive disclosure, by describing information in a printed publication or other publicly accessible medium, helps to establish prior art capable of preventing patents based on that information. It also benefits the general public for the use of knowledge for common welfare. Private registries on the other hand do not place knowledge in the public domain and can be effective for cultural and historic preservation. It can be effective as a protection mechanism for TK only when a *sui generis* system is in place. Since the information is documented but is not in the public domain, it may not constitute prior art capable of preventing a patent based on the knowledge by an outsider. The knowledge in a private registry therefore cannot prevent the approval of a patent under most IP systems unless it is considered prior art through a *sui generis* mechanism. Also, the knowledge may need to be disclosed to the public if no *sui generis* protection mechanism exists that would prohibit its public disclosure during reexamination. The private registers however can become a tool for access and benefit sharing agreements (Hansen and VanFleet 2003). Analysis of the positive and negative aspects associated with the registers is carried in Chapter 5 of this report.

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<sup>4</sup> Crucible Group is a diverse gathering of individuals from countries of North and South and shares a common concern for the conservation and enhancement of plant genetic resources and alarms that the decisions/policies being taken could imperil the availability of these resources for the world food security and agricultural development. This group was originally formed in 1993 after the UN Conference on Environment and Development and before finalization of the General Agreement on Tariffs and Trade (GATT) Uruguay Round of Multilateral Trade Negotiations. Five years later, this group met once more. With more memberships, Crucible II was formed to advance the international agenda for plant genetic resources. Members of the Crucible Group II shares the same passion for plant genetic resources and an ever-growing alarm that one of the humanity's most vital resources is being threatened and squandered.

### **3 COUNTRIES AND INSTITUTIONS INVOLVED IN THE DOCUMENTATION OF BIODIVERSITY AND ASSOCIATED TK**

Many countries rich in biodiversity have raised concern about the importance of TK documentation. However, only few countries have actually started the TK documentation exercise. India has the most extensive experience in biodiversity and TK documentation. Countries such as Sri Lanka, Philippines, Indonesia, Malaysia and Ecuador have also undertaken the documentation work. Nevertheless, the available documents from these countries are very few.

In most of the countries, information related to biological resources exists just in the form of resource inventory. Documentation about the biological resources and use associated with such resources by local people are found only in ethnobiological studies. In some countries, the TK information has been codified and developed in computer databases at national level. Most existing databases and registries are found to have information on traditional medicine.

An attempt has been made in this chapter to identify the organizations and institutions involved in the documentation exercise in the various countries.

#### **3.1 INDIA**

Biodiversity Register process in India was initiated by a local NGO called Foundation for Revitalization of Local Health Traditions (FRLHT) in 1993 with a focus to revitalize traditional medicine in primary health care (Gadgil *et. al.* 2003). This activity was a regional level initiative undertaken in 10 different sites of 4 states in South India. The Center for Ecological Sciences (CES) of Indian Institute of Science (IISc), Bangalore later collaboratively popularized it as People's Biodiversity Registers (PBR) in 1996. During that period, People's Biodiversity Register (PBR) activities were done in 24 sites of 10 Indian states (Anuradha *et. al.* 2001).

Drawing on this experience, the most systematic attempt at preparation of PBR's was undertaken by a network coordinated through CES as a part of the Biodiversity Conservation Prioritization Programme (BCPP) sponsored by World Wide Fund for Nature (WWF) India, over 1996-98 (Gadgil *et al.* 1998 cited in Gadgil, 2002). This resulted in PBR development in 50 villages with NGOs and teachers, local people, local scientists and officials / members from the IISc team as main actors (Gadgil 2002; Anuradha *et. al.* 2001).

In 2001, CES extended the BCPP exercise to a series of more in-depth studies with the help of a grant from the Ministry of Environment and Forests, Government of India (GOI), to gain experience of chronicling biodiversity. Two coastal districts of Dakshina Kannada and Udupi of Karnataka State were selected as study areas. Teachers from an undergraduate science college in Karkala and workers of an NGO called Nagarika Seva Trust (NST) collaborated in the programme (Gadgil *et. al.* 2003).

TK documentation in India is found to have been promoted by the State level authority as well. During the preparation of Karnataka State Biodiversity Strategy and Action Plan (KBSAP), a component of the National Biodiversity Strategy and Action Plan Project of India over 2000-2002, 'School of Biodiversity Registers' were started involving schools from all the four broad ecological zones of Karnataka – coast; hilly regions, and northern black cotton soil and southern red soil regions of the Deccan plateau. This was based on an invitation to

a state-wide network of school teachers belonging to Bharatiya Gyan Vigyan Samithi movement, a district wide network belonging to Tumkur Vigyan Kendra and other teachers who had earlier interacted with CES. A total of 50 schools all over the state agreed to take part in the activities; 42 of them completed the project (Gadgil *et. al.* 2003).

The State Plan for Kerala<sup>5</sup> has also actively promoted documentation of local knowledge regarding biodiversity in the form of Peoples' Biodiversity Registers (PBRs). One pilot project under PBR Project in 1997 has been completed in Ernakulum district<sup>6</sup>. An NGO called Kerala Shastra Sahitya Parishad (KSSP), teachers, students and representatives from local communities conceptualized and implemented the project. Within 16 months, biodiversity registers of 86 Panchayats was completed with the state government fund under the 'People's Planning' campaign for decentralized governance (Source: PEP, <http://home.att.net/~spiderhunters/attachments/pecoreg.rtf> visited on 12 Sept 2003).

Kerala Forest Research Institute (KFRI) Under the Department of Science and Technology, Government of Kerala, is involved in preparing register for the Village Panchayat. KFRI register seeks to document peoples' knowledge on flora and fauna amidst which they live; their uses; the past history of the area and people's reaction to the changes. Similarly, Tropical Botanical Garden Research Institute (TBGRI)<sup>7</sup> is preparing Biodiversity Register in a Panchayat near where it is located concentrating separately on a Plant Register and Animal Register (Anuradha, *et. al.*, 2001).

Other pertinent organizations involved in documentation include decade old attempts at documenting grass-roots innovations by Society for Research and Initiative for Sustainable Technologies and Institutions (SRISHTI) and the more recent National Innovation Foundation (NIF). SRISTI has been actively involved since 1993 to strengthen the creativity of grassroots inventors and innovators and eco-entrepreneurs engaged in conserving biodiversity and developing eco-friendly solutions to local problems (<http://www.shristi.org>). Documentation by this NGO is mainly concerned at individual level to recognize contribution at local level. SHRISTI has collected and documented about 10,000 innovations (all types of innovations ranging from biodiversity to weather related) in its Honeybee Data base. NIF, at national level, was established in March 2000 by the Department of Science and Technology of India with the main goal of providing institutional support in scouting, spawning, sustaining and scaling up grassroots green innovations and helping their transition to self supporting activities (<http://www.nifindia.org/index.html>). This national level foundation is building a national register of innovation and mobilizes intellectual property protection, set up incubators for converting into viable business opportunities and help in dissemination across the country.

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<sup>5</sup> Under the Kerala Panchayat Raj Act, 1994, the state of Kerala is divided into a number of districts, each having a district panchayat; each district is divided into blocks, each having a Block Panchayat; each block has number of villages and at the level of either one village or number of villages, there is a Village Panchayat; each constituency of a village Panchayat is also referred to as a village or ward. All the people whose names are included in the electoral rolls of a village within a village panchayat constitute a Gram Sabha of the village; Gram Sabha is the smallest unit of decentralized governance recognized by law.

<sup>6</sup> ErnaKulum district has 15 blocks each of which has variable number of Panchayats and villages (wards). Overall, there are 86 Panchayats and 884 wards in the district.

<sup>7</sup> TBGRI and KFRI are autonomous institutions under the department of Science and Technology, Government of Kerala, India.

Deccan Development Society (DDS) is another NGO in the state of Andhra Pradesh involved in TK documentation. It has completed nearly 500 village registers by working in about 500 villages in 22 districts scattered all over Andhra Pradesh. At the initial phase in 1997, DDS initiated Community Biodiversity Register (CBR) exercise in 30 out of 75 villages where it works. In 1999, DDS forged a coalition called AP coalition in Defence of Diversity with about 140 civil society groups in the state of Andhra Pradesh. Since then, DDS works together with the coalition. By the end of 2003, the coalition hopes to complete 500 more CBRs in 500 more villages, amounting to one CBR per *Mandal*<sup>8</sup> in the State. The main focus of their activity is to document local cultivation practices (Satheesh 2002).

Gene Campaign is another NGO that has undertaken work on documentation of IK of economically useful plants in tribal *Adivasi*<sup>9</sup> populations. Medicinal plants and knowledge of its use for human and veterinary care was documented. Three tribal groups have been considered; the *Mundas* and *Oraons* in South Bihar, the *Bhils* of Madhya Pradesh and the *Tharus* of the Terai Region. The objective of this documentation is to establish the rights of local communities for benefit sharing in the event of commercialization. Documentation was done with the involvement of educated tribal youths while elders in the village, medical practitioners and traditional healers were consulted in the collection and understanding of the information to be documented (Ref: <http://www.genecampaign.org>).

Similarly, Kalpavriksh based in Pune, Maharashtra and the Beej Bachao Aandolan (Save the Seeds Campaign), Tehri-Garhwal, Uttar Pradesh, in collaboration with the villagers in Jardhar of the Teri Garhwal district of Uttar Pradesh, initiated an exercise in 1995 to document the various bio-resources used by the community and conservation practices. The members of the Beej Bachao Aandolan - a network of local farmers who have been involved for a number of years now in reviving and spreading indigenous crop diversity, actively collaborated with the Kalpavriksh members (WTO 2000).

Another NGO that did a pioneering work on documentation of folk knowledge was Research and Action in Natural Wealth Administration (RANWA) based in Pune, Maharashtra. Recording of folk knowledge and practices of conservation of biodiversity was done beginning with Supegaon in Phansad wildlife sanctuary of Raigad district (Ref: <http://www.ranwa.org/aboutus.htm>).

The Research Foundation of Science, Technology and Ecology (RFSTE) of India initiated a movement in early 1999 called the Jaiv Panchayat (Living Community). According to the RFSTE, the Jaiv Panchayat movement aims to establish definitive sovereignty of local communities on their biodiversity resources. Activists from RFSTE and Navdanya, which is one of the programs of the foundation, have been interacting with local villagers in different parts of India (their strongest presence being in the state of Uttar Pradesh) to constitute informal community-level institutions called Jaiv Panchayats, comprising volunteers from a village. The members of the Jaiv Panchayat are entrusted with the task of inquiring and recording information on biological resources, and various uses of the same in the form of Community Biodiversity Registers (CBRs). The first Jaiv Panchayat to complete the register was in Agasthyamuni village Garhwal district, Uttar Pradesh, where in mid 1999, the CBR prepared with the involvement of the local people was completed. According to the report submitted by India to WTO in 2000 regarding the Indian experience on the protection of biodiversity and TK, it is estimated by the RFSTE that efforts towards Jaiv Panchayats were underway in 292 sites in the country (WTO 2000).

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<sup>8</sup> Mandal is the Smallest Administrative Unit in Andhra Pradesh State of India.

<sup>9</sup> *Adhivashi* refers to indigenous people

The Table 1 in Annex 4 provides a comprehensive picture of the documentation efforts undertaken by various institutions in India.

### **3.2 PHILLIPINES**

In the Philippines an initiative for protection of plant genetic resources has been undertaken by the Department of Agriculture of the Philippines. A continuous process of documenting and making an inventory of plant genetic resources and knowledge originating from indigenous and local communities is being undertaken as an initial step towards preventing the patenting of these traditional knowledge and practices by private individuals or groups (Marga 2002). The Department of Agriculture of Philippines launched the National Network on the Conservation and Sustainable Use of Plant and Genetic Resources to establish a national system for the collection, conservation, evaluation, and documentation of plant genetic resources important to the Philippines. Under the auspices of the Network, the National Plant Genetic Resources Laboratory (NPGRL) based at the Institute of Plant Breeding - University of the Philippines, Los Baños is mandated as the national repository of plant and genetic resources. Its data base consists of 45,000 species of plants, fruits, and vegetables, including perennial crops. At present, the NPGRL is continuously updating its inventory and keeping track of duplicate collections from other R & D institutions. Other local public R & D institutions keep separate biological and genetic collections for specific crops such as the Philippine Rice Research Institute for rice, the Sugar Regulatory Administration for sugar, Philippine Coconut Authority for coconut, and Fiber Development Authority for abaca.

The Philippine Resource Center for Sustainable Development and Indigenous Knowledge (PHIRCSDIK) has also been established in Philippines, the objectives of which, among others, are to gather data and facilitate the documentation of IK in the fields of agriculture, fishing, environment and natural resource management, animal health, human health as well as non-agricultural technologies, education and local organizations; to develop a system for storing and retrieving records of IK systems; and, to conduct research on the possibility of transferring IK and innovations from one ecological zone to similar zones elsewhere in the country (Tung 1993). Detailed information on the activities of PHIRCSDIK at present regarding the TK documentation could not be found during the process of review. However, in 1995, INDISCO - an ILO launched Interregional Programme to Support Self-Reliance of Indigenous and Tribal Communities through Cooperatives and other Self-Help Organizations, together with PHIRCSDIK undertook a study in the Philippines to collect and analyze information about the indigenous knowledge systems and practices of three of the major indigenous groups in the country: the Ifugaos of Cordillera (Luzon), the Atis of Panay (Visayas) and the Badjaos of Tawi-tawi (Mindanao)(ILO 1996) The documentalists were local people, preferably belonging to the indigenous communities being studied. (Ref: <http://www.nuffic.nl/ciran/ikdm/6-1/column.html>)

### **3.3 INDONESIA**

In Indonesia, the study/inventory of traditional knowledge relating to traditional medicine has been done by the Directorate of Community Participation, Directorate General of the Community health, Ministry of Health (Untoro 2001). It includes information with respect to traditional healers, methods of treatment, community perception and uses. The inventory has not been done for all ethnic groups in Indonesia. However, 32 big ethnic groups have been studied in the country. According to Untoro, Ministry of Health and Social Welfare of Indonesia in 1999 has also initiated the establishment of Information and documentation

Network on Traditional Medicine. The main idea is to develop a comprehensive traditional medicine database or information covering the method of treatment, traditional drugs and healers.

### **3.4 SRILANKA**

In Sri Lanka, efforts for biodiversity and TK documentation are ongoing under the auspices of the network of Ecological and Sustainable Farming Systems. In 2000/2001 the network established a National Farmers' Federation for the conservation of traditional seeds and agricultural resources. The farmers in this network have documented crop varieties, traditional agricultural rituals and traditional food preparations (HELVATAS 2001; *Cited in GRAIN and Kalpavriksh 2002*)

Similarly, IUCN Sri Lanka with the support from Global Environmental Facility (GEF) launched a project on medicinal plants, basically aimed at conserving globally and nationally significant medicinal plant species, and their habitats and promoting their sustainable use. One of the important elements of this project has been the ethnobotanical study. As ethnobotanical survey collects IPR-sensitive information relating to TK on the use of medicinal plants. special emphasis was given on safeguarding IPR relating to project activities. In terms of TK protection, transcription of ancient palm leaf writings (*Ola leaves*) into Sinhalese was done.

### **3.5 MALAYSIA**

Adequate information on TK documentation initiatives was not found at community level for Malaysia. However, the web based information outlines that the *Bidayuh* community of Sarawak in Malaysia plans to be the first ethnic group to document and protect their ethnobiology-related knowledge and practices under a pilot project being undertaken by the Sarawak Biodiversity Centre. (Ref. Managing Intellectual Property Dec 01 / Jan 02 Issue 115 p. 13, Available at [www.legalmediagroup.com/mip/default.asp?Page=1&SID=1249](http://www.legalmediagroup.com/mip/default.asp?Page=1&SID=1249), *Cited in GRAIN and Kalpavrikhs 2002*).

### **3.6 ECUADOR**

A group of individual local people and a grassroots organization called Union de Organizaciones y Comunidades Indigenas de Angochagua, La Esperanza, y Caranqui (UNOCIAE-C) in the *parroquia* (parish) of La Esperanza (located some 10 miles southeast of Ibarra, the capital of Imbabura province in northeast Ecuador) participated in a project that investigated and documented their knowledge of medicinal plants. Run by four elected *campesinos* (farmers) from the region, the UNOCIAE-C represents 18 communities, serving as a political voice and a link to other local organizations at regional, provincial and national levels. The project began in 1993 and a publication of a bilingual book in Quichua and Spanish were published in January 1994. A grassroots foundation, Fundación Sabiduría Indígena (Foundation of Indigenous Wisdom) or FSI based in La Esperanza has also been established which is dedicated to the conservation of indigenous peoples' knowledge and culture. The main objective of this foundation is to involve indigenous peoples in investigating and documenting their oral knowledge, history, and culture, primarily for indigenous peoples (Ref: <http://www.nuffic.nl/ciran/ikdm/3-2/articles/kothari.html>, Visited on 15 Aug, 2003). However, details of the functioning of this institution in present days could not be sought during review.

Similarly, a project entitled "From Traditional Knowledge to Trade Secrets" currently run by Ecociencia, an Ecuadorian Environmental NGO, seeks to manage TK in confidential databanks in order to negotiate access to the knowledge as a trade secret at a regional level (Harrison 2000). The project has already begun to create the GIS database system for knowledge management and has also published six paralegal manuals that seek to build community capacity for the organization, creation and management of strategies for the sustainable use of biological resources. The sixth manual specifically explores the issues around biodiversity and IPR, outlining existing IP mechanisms for knowledge protection and specifically highlighting the Registry as the best method for indigenous and local knowledge protection (Morales 1999; *Cited in Harrison 2000*).

Even though existence of some other organizations in Ecuador working for the IK/TK protection have been reported, details of such organizations and their efforts in TK documentation could not be found during this review work.

### **3.7 NEPAL**

Nepal consolidated conservation and management of her biological resources through the formulation of National Conservation Strategy as early as in 1987. Conservation of forest biodiversity was started through the establishment of National Parks and Conservation Areas since 1973. Documentation of biological resources and associated TK prevails in the form of hand written manuscripts (e.g. *Chandra Nighantu, Bir Nighantu*), as well as in the form of folklore, songs and in oral/verbal traditions among indigenous communities. In recent decades, documentation in written has appeared in various forms such as forest management plans, research publications on flora and fauna, agriculture and forestry; herbarium, library collections and agricultural collections.

After becoming party to the CBD in 1994, Nepal prepared its biodiversity strategy in 2002. In the same year, MFSC initiated a pilot phase biodiversity documentation and registration programme through a national stakeholders consultation workshop (Paudel 2002). After a year long pilot study in three representative agro-ecological sites, HMG- has developed and approved standard formats for documentation of biological resources and associated TK. (see details in chapter 5.4 and the formats in Annex 5).

Nepal Agricultural Research Council (NARC) is the other institution involved in documentation of TK of selected agricultural crops in Nepal. NARC, through its in-situ Agrobiodiversity Conservation Project, has prepared biodiversity registers for a few cereal and vegetable crops in three agro ecological sites of the country (Rana, et. al. 2000). NARC, Local Initiatives for Biodiversity Research and Development (Li-BIRD) and International Plant Genetic Research Institute (IPGRI) have been working in partnership to implement a project on "Strengthening the Scientific Basis of *in situ* conservation of Agricultural Biodiversity" in three districts of Nepal, namely, Jumla, Kaski and Bara (Rana et. al. 2000).

The World Wildlife Fund Nepal (WWF) has documented the traditional medicinal knowledge possessed by Amchi of Dolpa District. Detailed description of 100 medicinal plants and associated TK of Amchis has been documented (Lama et. al. 2001).

IUCN Nepal prepared a National Register of Medicinal Plants with the aim to assist HMG/N to initiate a process to register medicinal plants in order to establish the sovereign right of the country over its biological resources. It documented 149 medicinal plants their conservation status and traditional uses (IUCN 2000). The register has been further elaborated and revised to cover 187 species with illustrations (IUCN 2004).

Mahendra Sanskrit University has published a book on Healthcare by local herbal resources which documents 124 different herbal medicinal plants. The book gives information on the plants in general and the methods of preparation of medicines and their use. The document has been prepared with the aim of developing information material regarding medicinal plants (Adhikari 2055 BS).

Intermediate Technology Development Group (ITDG) has published a book on uses of medicinal plants with the aim to improve conservation and utilization of medicinal plants among local communities so that their health condition could be improved as well as the extinction of species could be prevented. A total of 80 herbs found in Nepal have been documented which includes their habitat, plant part used, method as well as quantity of use (ITDG 2058 BS).

Documentation of TK of the Darai tribe of Chitwan on the utilization of plants specifically with regard to food, medicine and pesticides has been done by the Natural History Society of Nepal. The aim of the study, as per the Society, was to conserve knowledge acquired by the tribal generations, facilitate information sharing and understand, conserve as well as utilize biodiversity. The study has also recorded economic uses of the plant as used by Darai tribe of Chitwan. Altogether 181 species of medicinal plants, 30 species used as indigenous vegetables and pickles, 14 species as fodder and several other species for miscellaneous uses have been documented (Dangol and Gurung 1995).

USC-Nepal is presently undertaking biodiversity registration program in five district of Nepal namely, Rasuwa, Humla, Banke, Sindhuli and Lalitpur. They are using the Biodiversity Registration format prescribed by MFSC (Refer to Annex 5).

At individual level, Dr. D. Dangol of IAAS, Rampur and Mr. S. Mahato of Chitwan, a local healer (locally known as *Gorau*), have started documenting the traditional medicinal knowledge practiced in Chitwan (Hele 2003).

M. Siwakoti and S. Siwakoti (2000) have documented 122 species of plants belonging to 114 genera and 57 families used as medicine by the Satar tribes of Jhapa and Morang districts of Nepal (Siwakoti and Siwakoti 2000).

Ethno-botanical Society of Nepal (ESON) in 2003 reviewed literatures on Ethno-botany in Nepal. It makes reference to altogether 593 publications on ethnobotany spread over 25 ethnic groups residing in 54 different district of Nepal. It has been reported that Tharus residing in the southern plains of terai are the most studied ethnic groups in Nepal. Most of them are focused on inventory preparation (ESON 2003).

Beside these ethnobotanical studies, several classical literatures amounting to nearly 4000 copies of handwritten manuscripts written on leaf, bark and handmade papers in Sanskrit, Pali, Newari, Nepali, Tibetan and other local languages are known to exist in Nepal. These manuscripts are concerned with plants, flowers, food, animals, cosmetics, minerals, tantric, basic principles, life conducts, diseases, yoga, rituals, environment, astrology, crystals, Ayurveda philosophy and more. Most of these manuscripts have not been published yet. Other ancient texts include Sushrut Nighantu, Kashyap Samhita, Tadaranda, Aurveda Saukhyam etc. Some of these ancient texts have been exploited by other countries both legally or illegally. (Koirala 2002 as well as pers. comm. 2003).

Sources of the literatures and documents related to biodiversity and associated TK are provided in Annex 2.

## **4 APPROACHES ADOPTED FOR DOCUMENTATION OF BIOLOGICAL RESOURCES AND ASSOCIATED TK**

Documentation of biodiversity and associated TK has taken various forms. Some of the common forms are Biodiversity Registers and Databases. Several organizations, national and international, have also developed methodology manuals for TK documentation.

### **4.1 BIODIVERSITY REGISTERS**

Biodiversity registers which are quite widespread in India have taken the forms of PBR and CBR. The term itself is found to have refined from Community Registers to CBR to PBR. In present days, however, all of these terms are used interchangeably even though it tends to be CBR if the documentation unit is a particular ethnic community.

Formats used for documentation are found to be different depending upon the objectives of the documentation and the organization facilitating the exercise. Some of the formats used for documentation are provided in Annex 5. Relevant issues on PBR relating to its modality of the usage, legal provisions, and its facilitation to the Biodiversity Act have been separately covered in the form of a field report that was prepared after the field visit to South India from 8 to 22 October 2003. The report also shares some of the experiences gained by Nepal on its exercise during the Biodiversity Registration work done so far. Details on the legal and policy related issues in Nepal for TK documentation have been complemented in the form of a separate study that was commissioned by IUCN-Nepal under the title “Legal and Policy Review for Documentation and Registration of Traditional Knowledge in Nepal” (ProPublic, 2004). However, issues arising during operationalising TK documentation and registration have been dealt in this document itself. Some details about the biodiversity register approach for TK documentation is described in the next chapter.

### **4.2 DATABASE**

Digital data base is another approach used for documentation. Such data base have been developed independently by various academic and research institutions as well as NGOs. These data base have been developed either from the existing codified information based upon ancient texts and classical literatures or from the information provided by traditional communities which are/were in existence since a long time in the documentation unit. Most existing databases and registries have the traditional medicine domain. In some countries, digital databases are being developed at national level for creating a national database system on biodiversity and associated TK. Besides, there are few electronic databases that have global coverage.

The following sections describe available TK databases created in various countries.

#### **4.2.1 Traditional Knowledge Digital Library (TKDL), India**

National Institute of Science Communication (NISCOM) of the Council for Science and Industrial Research (CSIR) of India has developed a Traditional Knowledge Database Library (TKDL) as their national database. The TKDL aims to eliminate language and format barriers on the existing TK available in Ayurveda in the public domain of India. The Indian government expects that TKDL will be able to effectively achieve the defensive protection of Indian TK and facilitate faster invalidation procedures for those TK based patents that do not fulfill the requirements of patentability from prior art perspectives. The database is based on

fifteen well-known Ayurvedic books, which are being referred at undergraduate and postgraduate level courses of Ayurveda and are also well-known to Ayurvedic practitioners. It provides translation of 35,000 verses from 14 Ayurvedic Manuscripts covering about 2,147 plants in local languages (Utkarsh, Pers.Com. 2003).

The retrieval of TK, which is already in the public domain is facilitated by using classification tools such as the Traditional Knowledge Resource Classification (TKRC) recognized recently through International Patent Classification System (IPC) and making the information available in English, French, German, Spanish and Japanese. It is aimed that in future, it would be available in 20 foreign languages and all Indian languages (WIPO/GRTKF/IC/3/6 2002).

In order to create the digital database, *Slokas*<sup>10</sup> from Ayurvedic texts are converted into structured language using TKRC. The TKRC classification has been evolved for about 5,000 subgroups as against present single group of the IPC for TK. The codes for each *Sloka* are fed into a data entry screen and also saved on the database. These are then decoded in easy to read and understand form in different languages. The web version of TKDL would include a web-based search interface. This would provide for a full text search and retrieval of TK 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 also carry information on practitioners, hospitals and dispensaries. There are several search features incorporated in the format. 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 (Ref:[www.infinityfoundation.com](http://www.infinityfoundation.com), visited on 17 Aug 2003)

#### **4.2.2 Health Heritage Database of Ayurveda, India**

The "Health Heritage Test Database" developed in India contains non-patent and patent literature on fifty medicinal plants endemic to South Asia and their traditional uses in the codified knowledge systems of traditional medicine in South Asia. The database focuses on the Ayurveda system of traditional medicine (It was found that out of 50 species endemic to South Asia, 13 species are reported to be found and used by local people in Nepal). The database provides information on biological activity, chemical constituents, medicinal properties, other industrial uses and taxonomic information up to the level of species and varieties. It also includes the vernacular names of the medicinal plants in 22 South Asian languages. The database was compiled by the 'Unit for Research and Development of Information Products' (URDIP), a member institution of the Indian Council of Scientific and Industrial Research (CSIR). The TK documentation data on the "Health Heritage" in CD-ROM form developed by URDIP was extracted by the Intellectual Property Digital Libraries (IPDL) Team and the TK Division of WIPO and compiled into an online database. Database search can be done either from simple search page or main search page and structured search page for advanced searches (WIPO/GRTKF/IC/3/6 2002)

#### **4.2.3 Farmers' Rights Information System (FRIS), India**

The Farmers' Rights Information System (FRIS) database developed by M.S. Swaminathan Research Foundation (MSSRF) in India is an attempt to protect the IP of the tribal people by launching the information in public domain. This multimedia database deals with agro-

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<sup>10</sup> Sloka means prose written in rhyme

biodiversity and related IPR issues and covers the intellectual contributions of tribal communities towards conservation and use of biodiversity. This database contains data on anthropological and ethnobotanical information, data on gene bank accession, rare and endangered plants and rice varieties of Orissa State. (WIPO/GRTKF/IC/3/6 2002; <http://144.16.65.194/hpg/envis/doc97html/biodgsa503.html>, visited on 16 Aug 2003)

#### **4.2.4 Ayuta Index, India**

Ayuta index is a collaborative effort made by URDIP, Tilak Maharashtra Vidyapeeth and the CSIR Technology Advisory Point Web Information Service in India. Ayuta is a database in CD-ROM, which incorporates TK from Sanskrit classics as well as modern information on medicinal plants used in Ayurveda (<http://www.urdip.res.in/news.htm> visited on 5 Nov 2003).

#### **4.2.5 FRLHT database, India**

FRLHT, the India based NGO has developed multidisciplinary computerized databases that ranges from information obtained from ancient classical texts to the TK remaining with the traditional local communities. The databases provide information on identity, distribution, threat and conservation status of plants, information on trade data, agro-technology and traditional knowledge of medicinal plants. Some of such databases are Bibliography Database on medicinal plant references, database on plants of *Charak Samhita*<sup>11</sup> and traditional system of medicine (TSM) doctor database. Besides, FRLHT has also developed a software for digitizing folk health traditions. TSM doctor database, for example documents information for households on home remedies, health practices/customs, diets, first aid etc. that are referenced from classical and regional texts. These databases can serve the information needs of sectors like traditional medicinal knowledge, forestry, conservation science, agriculture, medical research, pharmaceuticals and trade. Details of all different types of databases are available at the FRLHT homepage.

#### **4.2.6 Nepalese Plant Database Information Service Center, Nepal**

The Ethnobotanical Society of Nepal (ESON) in collaboration with Central Department of Botany, Tribhuvan University (TU) has developed a computerized database called Nepalese Plant Database Information Service Centre (NEPDISC). It manages data on flowering and non-flowering plants of Nepal. The database is mainly designed to provide information to amateurs and professionals requiring information on plants of Nepal. All information in the NEPDISC is based on published literatures. It comprises three major botanical database packages viz Flora Database of Nepal (FLODON), Medicinal and Aromatic Plant Database of Nepal (MAPDON) and the Ethnobotanical Database of Nepal (EDON). FLODON comprises information on approximately 6000 species of flowering plants, MAPDON with more than 1,700 species of medicinal and aromatic plants while EDON is under construction. The ESON itself is the custodian of the database while nominal fee has to be paid to ESON by those who want to access the database.

While the FLODON gives information on nomenclature, herbarium data, plant specimen data, habitat and distribution, plant collectors and digital images of plant, MAPDON provides information on the ethnobotanical and use of plants, habitat and distribution, voucher specimen and herbarium apart from its nomenclature, description, digital image, bibliography, conservation status chemical constituent and pharmacological action.

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<sup>11</sup> Charak Samhita is one of the ancient literatures written by Charak that describes medicinal qualities and functions of 100,000 herbal plants that today's science is doing research on.

#### **4.2.7 China Traditional Chinese Medicine (TCM) Patents Database**

The "China Traditional Chinese Medicine (TCM) Patent Database" (Chinese version) compiled by the State Intellectual Property Office (SIPO) of the People's Republic of China contains 12,124 deeply indexed records of TCM patent literature with 32,603 TCM formulas. Its English Demo Version contains 1,761 records of TCM patent literature in English with 4,177 TCM formulae. The 12,124 records in Chinese language cover the time period from April 1985 to June 2001, whereas the 1,761 records in English Demo Version cover the period from 1993 to 1994. The database focuses on bibliographic type data related to TCM. The China TCM Patent Database is linked to the WIPO Portal from SIPO server.

The China TCM Patent database is available online and allows for three different methods of searching. First, the "Quick Search" facility provides a simple search interface with a text search for the entire contents of the database. Second, the "Advanced Search" facility provides for nested Boolean searches and field searches. Third, a "Formula Search" facility allows for two different types of searches according to TCM formulas. The first type is a "Formula Logic Search" which provides logic combination and Boolean searches of TCM formulas. The second type is a "Formula Similarity Search" which provides TCM formula similarities as its search results and is particularly popular with patent examiners at SIPO.

User has to first login to enter the CTM site

(Ref: <http://211.152.13.119/englishversion/help/help.html>, Visited on 12 Nov 2003)

#### **4.2.8 Honeybee Database, India**

The Honeybee network supported by Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI) in India documents innovations on traditional practices & collects outstanding examples of contemporary knowledge to form a 13,000 strong database (Honey Bee data base of Grassroot Innovation) part of which has been converted as multimedia database. As a follow-up, SRISTI has set up the Grassroots Innovation Augmentation Network in Gujarat State in collaboration with the Gujrat State Government to develop innovations into products and then into enterprises. SRISTI's work has further culminated in the launch of the National Innovation Foundation (NIF), a grass-root eco-innovation multimedia database at national level.

#### **4.2.9 National Innovation Foundation (NIF) Database, India**

The National Innovation Foundation in India develops and maintains the National Register of Innovations and Unique Traditional Knowledge (NRIUTK) and manages database, electronic networking, web based management of value chain for grassroots innovations and manages National Grassroots Innovation and TK Management Information System. It was established in 2000 by the Government of India. The Honey Bee database of 13,000 innovations, collected and documented by SRISTI, is part of the National Register of Innovations to be managed and supported by NIF. (Ref: [www.nifindia.org](http://www.nifindia.org), visited on 12 Nov 2003).

#### **4.2.10 Biozulua database, Venezuela**

Biozulua database of Venezuela contains records of native medicine, ancestral technology and traditional knowledge related to food and agriculture from various ethnicities and local and indigenous communities in Venezuela, indigenous communities of Amazon. Biozulua concerns primarily TK related to biological resources. The field researchers gathered the information and database was compiled by the Fundación Para el Desarrollo de Ciencias

Fisicas y Naturales (FUDECI), a national science foundation of Venezuela. Besides the traditional knowledge information, the database encompasses the taxonomic identification of each collected specimen of documented biological resources, including names in native languages and/or Creole. It also incorporates scientific literature and analysis about the resources, their components and/or extracts (WIPO/GRTKF/IC/3/6 2002).

Users of the BioZulua database can undertake their search by species, geographic location, ethnic group or even by ailment. The database also includes video footage of shamans collecting and preparing medicinal plants, as well as images of how patients respond to treatment. It provides genetic profiles of every plant entry and the global positioning system coordinates of where exactly it grows. The content of this database is mainly to deal with the IP issue of the knowledge holders when it comes to access and benefit sharing (Johnson, 2002).

### **4.3 GLOBAL TK DATABASE LINKS**

#### **4.3.1 T.E.K.\* P.A.D. (Traditional Ecological Knowledge Prior Art Database)**

This project of the American Association for the Advancement of Sciences (AAAS) and Human Rights Program is an index and search engine of existing Internet-based, public domain documentation concerning indigenous knowledge and plant species uses. TEK\*PAD brings together and archives in a single location, various types of public domain data necessary to establish prior art. Data includes taxonomic and other species data, ethnobotanical uses, scientific and medical articles and abstracts, as well as patent applications themselves. It is meant to be used by those researching traditional ecological knowledge, including scientists, health professionals, and those involved in the patent application process itself. TEK\*PAD currently contains over 40,000 entries already in the public domain documenting traditional uses of natural resources. The website cross-references plant names, medicinal applications of these plants, and prior art, and links to United States Patent and Trademark Office (USPTO) and European Patent Office databases.

#### **4.3.2 TradiMeD**

TradiMed database, based on various Chinese, Korean and Japanese medical classics, is the combined result of the traditional medicine know-how and the modern science, which promotes understanding of traditional medical treatments from the point of view of the modern science. From old medical classics, such as Dong-Eui-Bo-Gam and Sang-Han Ron, to the most recent chemical data from NAPRALERT, Chapman Hall Chemical Dictionary, many sources of comprehensive information were used for database establishment and continuous upgrade. It is being developed by the Natural Product Research Institute, Korea and is a government supported project since 1992 (Ref.: [www.tradimed.com/](http://www.tradimed.com/)).

#### **4.3.3 IK Database of The World Bank**

The World Bank has established a web-based database in which information about various types of TK/IK published in papers, publications etc. have been compiled. This web-based database does not specifically document biological resources related information. Knowledge and technology documented in various countries under different domains such as agriculture, nutrition, environment, social protection etc could be entered to search information already in public domain. This website however is not inclusive of all the

information that has already been documented and basically focuses on the Countries of Sub-Saharan Africa.

(Ref: <http://www4.worldbank.org/afr/ikdb> )

#### 4.4 METHODOLOGY MANUALS FOR RECORDING TK/IK

Various organizations have developed methodology manuals to explain how TK can be documented. The objectives of TK documentation as envisaged by these manuals differ, and accordingly, the methods and contents have been proposed.

International Institute of Rural Reconstruction (IIRR) in 1996 has developed a manual with an aim to provide with the information and tools to integrate IK into development work so as to facilitate the use and conservation of indigenous knowledge for the benefit of people and their communities. This manual suggests guidelines on how to protect the IP concern of the knowledge holders while documenting their knowledge. The manual considers not only the knowledge on biological resources but also those related to technology, education, communication as well as practices and beliefs of traditional communities. The document also provides some criteria for validation of IK (IIRR. 1996).

Similarly, **Prof. Madhav Gadgil of CES/IISC** in India has developed an outline of a methodology manual for the preparation of Peoples Biodiversity Registers. (Gadgil *et. al.*, 2003). The manual has been developed with the objective to outline the activities required for creating a Biodiversity Information System in the form of PBR at the Gram Panchayat Level, the lowest functional unit of decentralized Government in India. Such PBR is believed necessary in order to plan for conservation, sustainable utilization and restoration of biological diversity as well as ensuring that benefits flowing from biodiversity and related TK percolate down to the people at the grass-root. The document is compatible with the recently approved Indian National Biodiversity Act, 2002 and is a very good resource material for the scientific and literate circle.

The **American Association for Advancement of Sciences (AAAS)** has developed a handbook with an aim of providing the TK holders options and issues in protecting their IP and biodiversity. This handbook apart from other things also suggests the information to be included while documenting the TK. Such information should include name or descriptive title of the process or product, who is claiming the process or product, summary of the process, resulting product or results of process, variations on the product as well as the record of any known or demonstrated result of the process or product.

Similarly, the **World Bank Group** has described the typologies related with indigenous knowledge. Various sectors, area of knowledge, particular segment of society bearing knowledge, and the manifestation of knowledge have been categorized. It also provides an overview of actions required to improve the available information on indigenous knowledge. These actions mainly concentrate on recording and documenting, testing and validation and on disseminating information about indigenous knowledge practices. The website also describes about increase in awareness of the importance of IK and enhance its application on development activities; intensify global networking for the exchange of indigenous knowledge; and, sharing responsibilities in the exchange of indigenous knowledge. It does not, however, clearly outline the issue of IP protection of the knowledge holders (Ref <http://www.worldbank.org/afr/ik/ik-web2.htm>, visited on 13 Sept 2003)

The Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of the WIPO has developed a toolkit for IP management

during TK documentation. This toolkit considers an integrated approach to positive and defensive protection strategies. Past documentation activities have focused on preservation and dissemination of the TK and associated resources while more recently there has been increasing focus on the IP aspect of the documentation. The aim of developing the toolkit therefore is to determine whether and in what cases, IP rights are the appropriate legal and practical mechanisms to achieve the objectives concerning TK of the knowledge holders and genetic resources. The toolkit illustrates the diverse IP issues that arise at each stage of documentation:

- Before documentation - creating awareness and setting objectives;
- During documentation process - practical management of IP issues; and
- After documentation - options for the acquisition, exercise and enforcement of IP rights and other protection mechanisms.

The toolkit is meant for the communities who are planning documentation of their knowledge in their own initiative and tries to demonstrate how IP implications can be managed. The following aspects have been considered in the toolkit:

- different forms of TK documentation and their potential uses;
- potential negative consequences of TK documentation and how to avoid them;
- the range of possible ways of interacting with IP system, for positive and defensive protection;
- the practicalities of documentation, the paramount role of the community and the need for consultation and awareness;
- limitation on documentation, and what it cannot achieve; and
- need to clarify what purpose any particular documentation project aims to achieve.

## 5 PROCESSES AND PROCEDURES ADOPTED FOR TK DOCUMENTATION

This chapter analyses critical issues to be considered while undertaking the documentation exercise. The chapter is divided into two parts: the first part (sub-section 5.1 to 5.4) describes cases of TK documentation and the second part (sub-section 5.5) analyzes positive and negative aspects of various methodologies adopted. A total of four cases of documentation have been considered as following:

- i. Peoples' Biodiversity Register (PBR) Project in Kerala State of India
- ii. Biodiversity Conservation Prioritization Project (BCPP)-PBR Programme in Karnataka State of India
- iii. TK Documentation in Ecuador
- iv. Pilot Phase Documentation Program in Nepal

### 5.1 PBR PROJECT IN KERALA, INDIA

Under the PBR Project in Kerala State, a pilot project was carried out in 86 *Panchayats* of Ernakulum district. The information is based upon the document published in 2001 by the International Institute of Environment and Development on "Experience with Biodiversity Policy formulation" (Anuradha *et. al.* 2001).

#### 5.1.1 Preparing for Documentation

At the initial phase of the project, sensitization and capacity building programs at district and village levels were done through trainings, workshops and lectures to create basic awareness on the importance for documenting PBR. The resource persons of such programs included, *inter alia*, experts in environment and natural resource management, NGOs that had developed PBRs in Karnataka and members of the Kerala State Planning Board who had initiated the Peoples' Campaign in India.

#### 5.1.2 Constituting the Project Team

Project Resource Persons were identified which included three District Resource Persons (DRPs) for coordinating the entire exercise at district level; one Block Resource Person (BRPs) for each block; one *Panchayat* Resource Person (PRP) for each *Panchayat*; and Ward Resource Persons (WRPs) at the level of each village. The BRPs and PRPs were mostly college and school teachers. WRPs were mainly teachers, students, youth and other volunteers from the village. An advisory committee of 15 members who were experts in different fields was formed to assist in the execution of the project. A project monitoring committee was also formed at the district level which constituted the District *Panchayat* secretary, a member from the district *Panchayat*, a representative from the Kerala State Biodiversity Committee and a few natural and social scientists.

Information regarding biological resources was collected from the key informants. They were 'knowledgeable persons' aged around 60 years on the premise that wisdom regarding flora and fauna in a place was directly proportional to the age of a particular person. They were mainly ordinary people who because of their lifestyle were custodians of certain information regarding the flora and fauna of a place. The manner in which the entire process of documentation took place was to invite people from a particular area to meet over certain dates and undertake documentation.

### **5.1.3 Information documented**

The information collection focused on: grain crops, oilseeds, cash crops, tuber crops, fruit trees, vegetables, pulses, medicinal plants, spices and oil producing plants, grass varieties, wild relatives of domesticated plants, garden/decorative plants, fumigants, chewing plants, plant products collected from forests, timber trees, domesticated animals, birds, animals of medicinal importance, fish, crop destroying animals, pests and weeds. Information was collected on the local name of the resource the varieties used and purposes for which they were used; the availability and distribution patterns of the resource and any changes therein; and names of the individuals that provided the information. A sample PBR documentation format used in Ernakulum is provided in Annex 5. Taxonomists later provided scientific names of the species documented. TK was also documented that consolidated traditional practices pertaining to, *inter alia*, farming, architecture, pottery, health and crude drug collection. The PBR thus prepared consists of an introduction, background information on *Panchayat*, a summary of its biodiversity, TK, detailed biodiversity data sheets and a bibliography.

### **5.1.4 Making documentation participatory and reliable**

For the local resource persons at ward level, the motivation for participation was the sense of involvement in documentation for the benefit of a pioneering project that had potentially beneficial implications for the entire district in terms of biodiversity and TK conservation. They could not be retained on a salary basis because of the budgetary constraints of the project. In some cases, the people from whom information was being sought wanted to keep the information secret. In such cases, recording was done either in terms of the expertise possessed by the individual/ community or names of the community having such expertise.

### **5.1.5 Benefits from documentation**

The logic behind the preparation of registers was to record the valuable information that local people have about the biodiversity in order to: a) ensure that this information does not disappear; b) renew recognition of the fact that the knowledge and information of local people is of immense value for the community and outside world; c) improve control over access to such resources and related information by 'outside interests'; and d) enhance capacity to contest IP claims over products or processes developed using their knowledge, information and resources. One of the effects of the process has been to generate faith in the value of TK in many local communities.

### **5.1.6 Custodians of PBR**

The ownership of the PBR thus prepared rests with the respective local Panchayats.

## **5.2 BIODIVERSITY CONSERVATION PRIORITIZATION PROJECT (BCPP)-PBR PROGRAMME IN KARNATAKA, INDIA**

The Biodiversity Conservation Prioritization Project (BCPP) was a nationwide attempt in varied biotic and social conditions to prioritize areas and prepare strategies for conservation. One of the exercises of the BCPP was the BCPP-PBR, which aimed to document and understand the complex relationship of the village society with the surrounding nature and to develop strategies for monitoring biodiversity resources. The scope of the PBR was envisaged as a document containing information on the entire resource catchment of the

village, irrespective of distance from the village or the frequency or intensity of use. The information provided is also extracted from the document published in 2001 by the International Institute of Environment and Development on "Experience with Biodiversity Policy formulation" (Anuradha *et. al.* 2001).

The objective of the programme was to create a network of decentralised country-wide Data base on, *inter alia*:

- species, their user groups, uses and other values (eg. cultural or nuisance values);
- the status of biodiversity resources (eg. localities and levels);
- factors affecting biodiversity (eg. harvests and trade from natural populations, changes in agricultural practices, or industrial effluents);
- local knowledge widely shared and publicly disclosed of the properties and uses of biodiversity resources;
- local knowledge that is only partially disclosed, e.g. claims of particular individuals to specific remedies; and
- involvement of local communities/individuals in sustainable use and conservation, and local peoples' perceptions on participatory management.

### **5.2.1 Resource persons**

BCPP-PBR process was aimed to widen participation in developing the register, as previous attempts at making registers in the State of Karnataka had concentrated on school science teachers. The main actors of PBR preparation process were the NGOs and teachers who did the documentation in the form of registers and local people who provided information. The programme also had a component of validating the information recorded. Local scientists and officials/ members from IISc team helped in facilitating and validating the information.

### **5.2.2 Preparing for documentation**

This programme was initiated through a workshop held at the IISc, Bangalore in March 1996 involving potential collaborators from the states of Himachal Pradesh, Rajasthan, Bihar, Assam, Orissa, Karnataka, Maharashtra and the Union Territory of Andaman and Nicobar Islands. Discussions at this workshop permitted a crystallization of the methodology and drafting of a methodology manual. There followed a series of training programmes and workshops that facilitated the fieldwork spread over 56 sites (BCPP working sites) throughout India employing a common methodology.

### **5.2.3 Information documented**

The method of creation of PBRs envisaged three main components:

- Landscape elements: patches within a landscape homogenous in appearance and distinct from surrounding patches, such as forest, plantations, lakes, habitation areas, roads, etc.;
- User groups: comprising a group of people who use biodiversity in similar fashion and are distinct from each other;
- Resource use, conservation and management: information pertaining to species used, economic details, past and present initiatives of conservation, external and internal market pressures etc.

Village landscape maps were used to relate user identify biodiversity quality and record conflicts over biological resources. Greater emphasis was given on aspects such as the economic potential of resources, possible adverse effects of existing economic transactions, and ways in which these can be minimized. The final step in the documentation was the preparation of an action plan for conservation and sustainable use.

#### **5.2.4 Making documentation participatory and reliable**

From the experience of biodiversity and TK documentation in this state of India, it has been pointed out that the participation of local village communities solely depends upon the ability of the investigator to elicit confidence of the communities. Sensitivity of the investigator was identified as a critical factor to avoid documenting knowledge, which by its very nature is secret and sensitive.

#### **5.2.5 Benefits from documentation**

For the communities, it generated renewed enthusiasm in the conservation and management. However, it has been stated that investigators need to distinguish between knowledge that can be placed in the public domain and that which, if documented without the legal implications, can actually prove to be counter productive to the community. As explained by Anuradha *et. al.* 2001, one of the most significant outcomes of the registers was the revival of interest in what has been termed 'Practical Ecological Knowledge" of communities and the serious thought given to measures to consolidate such knowledge and promote the conservation and sustainable use of biological resources. The practical implication of the register movement has been local awakening and organization.

#### **5.2.6 Custodians of PBR**

In Karnataka, completed PBRs have been kept in the village Panchayat and their custodians are the President and the secretary of the Panchayat. However, the general feeling is that control of access should be decentralized, with an institutional mechanism within the village to determine who can have access and on what terms. It has been pointed out that the law should recognize the village as a unit with physical and IP rights over the PBR and suggested that *Panchayat Raj* Act should be amended to this effect.

### **5.3 TK DOCUMENTATION IN ECUADOR**

A project that documented TK of medicinal plants was implemented in La Esperanza in Northern Ecuador. It was a research project the objective of which was to document traditional medicinal knowledge among the communities of La Esperanza. The information on the processes and procedures adopted by the project, as explained in the following paragraphs has been extracted from an Article written by the researcher and was published in the Indigenous Knowledge and Development Monitor 3(2) (Available at: <http://www.nuffic.nl/ciran/ikdm/3-2/contents.html>, visited 21 September 2003).

#### **5.3.1 Preparing for documentation**

The project started with clarifying the project objectives at an annual gathering of the community leaders. Union de Organizaciones y Comunidades de Angochagua, La Esperanza, y, Caranqui (UNOCIAE-C), a grassroots organization based in La Esperanza, assisted in the implementation of the project. UNOCIAE sent formal invitations to each

community of La Esperanza to participate in the documentation programme. Interested communities were asked to select two participants on the basis of literacy and gender balance. A short bilingual questionnaire was developed to obtain required information on medicinal plants.

### **5.3.2 Information documented**

The information was sought with respect to the local names of plants in Quinchua and Spanish, description of plant, local plant habitat, corresponding illness, symptoms and causes of illness, methods for preparing the remedy, administration and other non-medicinal uses. These topics were identified in a group session, on the basis of suggestions made by the local coordinators and the project implementer (a researcher). Based on this questionnaire was developed. In addition, certain questions were included which were intended to identify the key members of the community or the family who were regularly consulted because of their knowledge of medicinal plants.

### **5.3.3 Making documentation participatory and reliable/Documentation process**

A small amount of remuneration was offered to each participant. The remuneration was seen as necessary by the UNOCIAE-C members in order to attract participants and compensate them for their time and efforts, the budgeting for which was done by the UNOCIAE-C.

In order to build capacity of local resource persons, training session was conducted for the benefit of community participants, those unfamiliar with the contents of the questionnaire. All participants in the project documented one another's knowledge about medicinal plants by pairing up in twos. The participants were free to interview anyone they wished, preferably in their own community and to complete the questionnaires in the language they preferred. All the participants met once a week to discuss their experiences and to review the completed questionnaires. As far as possible, all important project decisions were taken collectively. These included addressing individual concerns, planning the direction of the project, dealing with financial matters and setting a target number of questionnaires to be completed per week.

The information obtained by means of the questionnaires was categorized according to the individual plants. The validity and consistency of the information was confirmed during group sessions attended by all the participants. Those plant remedies on which there was some general consensus within the group were rewritten by the smaller group, on the basis of the responses to the questionnaires and the suggestions from the participants. Remedies for which no confirmation could be obtained were laid aside for further investigation.

### **5.3.4 Benefits of documentation**

A bilingual book in Quinchua and Spanish '*Nucanchic panpa janpicuna: Plantas medicinales del campo* (Our knowledge of medicinal plants) was published, out of the information collected which documents the knowledge of medicinal plants originating from six of the La Esperanza communities (Kothari 1995).

Out of the proceeds of the book on traditional knowledge of La Esperanza, a local foundation of Indigenous Wisdom (Fundacion Sabiduria Indigena, or FSI) was established. All proceeds from the sale of the books go to the communities.

## **5.4 PILOT PHASE DOCUMENTATION PROGRAMME, NEPAL**

The pilot phase documentation programme in Nepal was carried out with the objective to contribute towards the conservation and sustainable utilization of biodiversity through the development and demonstration of a workable methodology on the documentation and registration of biological resources and associated TK.

### **5.4.1 Preparation for documentation**

The project started by developing a standard format with inputs from stakeholders in a consultation workshop. Representative settlements in three agro-ecological sites, one in lower mid-hill, one in higher mid-hill agroecosite and one in high altitude, were selected using available information, field visits and consultation with district line agencies and NGOs in concerned districts. In order to build capacity of the resource persons involved, training was organized to a group constituting a senior forest officer, a field officer, a forest ranger, a junior agriculture technician, two local enumerators (a local school teacher and a literate farmer leader) at each site. Two local NGO staff members were used in Kaski district. After pre-testing the developed format, a local level interaction workshop was organized in each district of the selected sites. Using participatory methods, settlement sites were delineated and key local resource persons identified. Village level workshops were organized at each village sites to aware local people and get their participation.

### **5.4.2 Information documented**

With these preparations, a detailed list of biological resources that existed in and around the study site was prepared with the help of a guided checklist. The list was then hung in a public place so that locals could read and add on. As many village people as possible were invited to participate in this exercise so that the maximum number of resources could be noted down. Unique TK, skills, practices, processes and products related to biodiversity were listed through similar group discussions. Consultation was done with the key informants that included farmers, *Kabirajs*, *Baidhyas*, agriculture and forestry personnel. These lists were then verified with local experts/key individuals wherever possible. Along with the list, collection of samples of agricultural and forestry resources and their products was done for species/variety identification and description. Herbarium was prepared for some biological resources while others were photographed. After collecting the information, documentation in the prepared format was done with group discussion that constituted adequate and relevant farmers representatives, local healers, agriculture and forestry professionals and those involved in data collection. The entry of the collected information into computerized data is under progress (Paudel 2002).

### **5.4.3 Post Documentation Exercise**

After completion of the pilot study, a national level workshop was organized to share the findings and experience from the pilot study. The workshop then finalized and recommended a standard format for preparing CBR (Paudel 2002). Thus developed format has now been approved by the government and is being used by various organizations / NGOs. Details of the findings are available in Paudel *et. al.* (2003) and the format is given as in Annex 5. The study suggested formation of a multidisciplinary team of enumerators, proper naming and identification of the bio-resources being documented, importance of specimen collection and display as means for successful completion of the documentation process.

## 5.5 DISCUSSION AND ANALYSIS

This part of the document analyzes the approaches and processes followed for TK documentation mainly from the cases presented in previous section and from other available information. The analysis is focused on the following seven issues:

- making documentation participatory and reliable;
- benefits of documentation;
- risks and challenges associated with documentation;
- capacity building approaches;
- custodians of documented information;
- benefit sharing mechanisms; and
- role of customary laws.

### 5.5.1 Making Documentation Participatory and Reliable

The success of biological resources related TK documentation rests upon the active and willing participation of local people in the community. In order to increase communities' participation in any research and study dealing with traditional communities, Fernandez (1994) recommends that researchers clearly outline the purpose of their research and explain how the project will serve the community. The community should, therefore, be explained the objective of the project as well as the intended and perceived positive and negative consequences of TK documentation (Fernandez 1994, Cited in Grenier 1998). In the PBR documentation exercise undertaken in Kerala, awareness generation among the village communities about the need for documentation has been considered as one of the important aspect before starting documentation. Similar exercise in Ecuador has helped increase community's interest in documentation exercise. On the other hand, documentation works carried out in the Karnataka state of India under BCPP, awareness generation for villagers has not been adequately done. Training programmes have mainly focused at scientific communities, national resource persons and the field officials undertaking the documentation exercise. Based on the experience of PBR preparation in India a prerequisite realized for TK documentation to be participatory and reliable is that the documentation is facilitated only when concerned communities themselves are motivated enough to be willing and interested to undertake the documentation exercise. In Nepal, community participation was usually high although certain difficulties were realized when the time of documentation coincided with the crop cultivation period.

The toolkit being developed by WIPO for managing IP while documenting TK considers setting of objective for documenting as a first key step while preparing for TK documentation. Behind the specific objective of the documentation exercise will be a set of interests and concerns on the part of the community. In order to make documentation participatory and reliable, the project should be designed to deal with these sets of communities' priorities. As outlined in the "Draft Outline of an Intellectual Property Management Toolkit for Documentation of Traditional Knowledge", documentation is not necessarily done for putting TK in the public domain; if the community or the knowledge holder want to keep their knowledge secret, the documented TK can still be kept confidential or restricted for others apart from the knowledge holders (WIPO/GRTKF/4/5, 2002). This fact has to be explained properly to the communities before actually starting the documentation process. It is also important to understand the needs and expectations of the communities and to ensure that decisions are made with full awareness of their consequences. As in the case of PBR, preparation in Kerala, many of the traditional healers refused to show the plants. In such

cases, only the fact of their expertise was recorded. The use of certain medicinal plants was often found only with the specialized knowledge of certain people in the community, which they may not want to share with others within the community. In such cases, the records in the register state the name of the individual/s that have specialized knowledge alongside the nature of ailment it seeks to treat. Such recording, obviously, increases their participation and the reliability of information collected can be ensured. This is also important in terms of making documentation cost and time effective.

Similarly, the need for consultation with all concerned stakeholders, in particular with the knowledge holders and custodians of biological resources is an integral part of planning a documentation exercise (WIPO/GRTKF/4/5, 2002). Considering the knowledge holders as the primary stakeholders, it is important that the discussion with the community is essential for increasing participation and reliability of the documented information. It is often argued that that community biodiversity registers can be effective provided the farmers as well as the community based organizations (CBOs) are well aware of the value and benefits of the documented data in shorter and in longer terms (Rijal *et. al.* 2003, Unpublished Document). The cases from Kerala and Karnataka of India presented earlier have also considered consultation of stakeholders as an important initial step in the PBR preparation process. The mobilization of grassroots' organization as done in India and Ecuador have also proved to be convincing in terms of increasing participation of the local communities.

P. V. Satish of the Deccan Development Society (DDS), a grassroots' NGO working with about 5,000 women from the marginalized communities in the semi arid Deccan region of Andhra Pradesh in India argues that information from knowledgeable individuals will not be extractive in terms of generating information and protecting the IP of the community as a whole. The CBR created by the knowledgeable individuals deprives the entire community from sitting together and sharing/analyzing their knowledge. In CBR preparation carried out by DDS, the entire process is carried out with the entire community together and not individually. This, however, may not be applicable when the community under consideration is spread over a large area. On the other hand, information collected from old persons as knowledgeable individuals as in case of PRB preparation in Kerala is limited and excludes role of other important players such as plant collectors.

The approach and process used for the documentation is also important to make the exercise participatory and reliable. Documentation exercises undertaken in Kerala have been done in close interaction with the *Panchayat* administration. Their processes rely to a large extent on the knowledge and information of "Knowledgeable Persons" in the community while close participation of teachers, universities, community representatives and other institutions is present in the actual documentation. In the documentation efforts of KFRI and TBGRI as explained in the previous chapter, information is collected at household level as well as by ward-level meetings. Both of these institutions have documented the information in more details than the one in Ernakulam district.

It is important that the format for documentation be simple and easy to use for getting reliable and accurate information. Documentation format depends upon the objective for undertaking the documentation exercise and the scope of documentation. M.S. Swaminathan Research Foundation (MSSRF) has adopted an easy to use format with specific areas for documentation focusing at investigating the TK documentation in sustainable use and poverty eradication aspects. Its records range from socio-economic status of the people, agrobiodiversity, people's traditional knowledge, natural resources and ecosystem diversity (Pers. Comm., Dr. N. Anil Kumar, MSSRF). The format used for data collection in the Ernakulam has 23 different groups, each group having several records with

specific details of the biological resources (Pers. Comm, KSSP). A sample of this format is provided in Annex 5. This format however is more complicated for use, especially in situation when majority of the local people are uneducated. In Nepal, a standard TK documentation format has been developed by the MFSC/HMGN with experience from the pilot testing TK documentation exercise. This format has been developed in a simple structure (refer to Annex 5.) and was used by the national level and district level people who actually did the documentation during the pilot phase program at three different study sites. However, this format needs a guiding manual to make it more understandable to the local resource persons, if the local community or members of the community are involved in undertaking documentation. Besides, various aspects of communities' knowledge about conservation, management and associated customary laws are to be included in the documentation format. Nepal Agriculture Research Council (NARC) has been using still another type of format in its study sites focusing on documenting TK specific to selected agricultural crops.

### 5.5.2 Benefits of Documentation

It is argued that registries of biodiversity and associated TK are a defensive publication that will be able to establish a prior art. Knowledge which may have been formerly maintained orally will now be documented as a proof of prior existence and patent claims. The output of the documentation exercises undertaken in India has been the PBRs that have records of the local biological resources and associated TK. It also gives information as to who possesses the particular knowledge and that serves as a proof of prior art.

In addition to the benefit in terms of defensive publication strategy, benefit from TK documentation could be in terms of sharing information among the community or wider public for the benefit of the community. It is found that documentation in India originally started as a mechanism to share information that will otherwise get eroded if unprotected. Some institutions still follow the same motto while documenting knowledge of the local communities. In the documentation exercise initiated by the Gene Campaign, the documented knowledge has been made into manuals for the tribal people who now use it as a practical healing guide (Sahai 2002).

#### **Benefit from TK documentation approach in India**

The PBR movement in Karnataka has been local awakening. A good example was illustrated by the villagers near Sringeri in Karnataka who stopped the cheap sale of moss to a vendor who refused to divulge the purpose for which he used it, the markets where he sold it and his earnings. Although the villagers lost a customer and the small earnings they got from him, they had the satisfaction of preventing the vendor from making huge gains at their cost.

*Source: Anuradha, et. al. 2001*

The experience with PBR documentation in the Indian state of Karnataka has demonstrated the benefits of the documentation process as one that generated faith and caused an awakening and organization among community members. According to Navadanya, a programme initiated by the Research Foundation of Science, Technology and Ecology (RFSTE) India to conserve agricultural diversity, documentation of the resources and knowledge of communities at the local, regional, and national levels serve two main purposes. It contributed to the rejuvenation of the ecological basis of agriculture while served as the basis for asserting farmers' prior intellectual innovations to set limits on IPR monopolies in agriculture on the other.

([http://www.navdanya.org/movement/navdanya\\_movement.htm](http://www.navdanya.org/movement/navdanya_movement.htm)). However, considering the widespread documentation work being undertaken in India at local level, mechanism to integrate information on PBR at local level to district and national level is yet to be devised.

The registry of TK and biological resources have been prepared with a varieties of objectives. One proposal for the use of the registry is for IP protection with the formation of regional *Knowledge Cartel* in Latin America. With this objective the project entitled "From Traditional Knowledge to Trade Secret" has been started in Ecuador that (as explained earlier) seeks to manage traditional knowledge in confidential databanks (Harrison, 2000).

Claims to IP are better established when IK exists with the local peoples in a written form than when it is available solely through the oral medium. In a written form, even though the outsider's access to IK is simplified, its appropriation becomes more complex especially if the information in print is clearly associated with the local and indigenous people.

IK documentation empowers IK holders to participate in the Knowledge-economy. IPGRI has developed an IK Journal concept in which farmers can document their knowledge on a specific topic on audio tape or any media, in their own language which can then be listed in the scientific journals. Any scientist accessing these tapes can cite the source in their paper. Information given in such papers is deemed to be the interpretations of the tapes content. On the farmers side such audio tapes will be kept in the community's library and easily accessed. It is also possible to track the usage of the knowledge as the tapes are cited. The approach is to empower the knowledge holders and to recognize their contribution at the national and scientific level. According to the Consultative Group on International Agriculture Research (CGIAR) of IPGRI, the use of the IK Journal approach is a sign that action is being taken to address the knowledge holder's rights. With rights being recognized, the equitable sharing of profits will follow in same manner as scientific knowledge and the possible unity of knowledge systems. The documented knowledge will allow communities to build on their knowledge. (Ref: <http://www.ipgri.cgiar.org/regions/apo/ik.html>)

### **5.5.3 Risks and Challenges Associated with Documentation**

The TK documentation should have a proper legal mechanism at national, regional and international levels. With the BCCP-PBR project in Karnataka, there was a realization that until the legal framework is clarified; care should be taken not to document knowledge that was hitherto held secretly, thus not imposing any risk by placing it in public domain (Anuradha *et. al.* 2001). Similar views were proposed by other organizations that have been involved in registry preparation. The registers prepared by the Gene campaign are being held unpublished until the legal mechanism to protect it will be in place (Sahai 2002).

In India, the National Biodiversity Act, 2002 is considered as the legal document to protect PBRs. The Act envisages that biodiversity registers need to be prepared at local level and the local level biodiversity Monitoring Committees (BMC) should have the overall responsibility of biodiversity conservation including among others documentation of biological resources and TK. Each Village Panchayat President will be the member of such BMCs.

In the context of defensive publication of the TK, several issues of concern are associated regarding the effectiveness of registry of TK documentation. In order to fully support the defensive publication mechanism, registry endeavors would have to carefully consider what they would like to define as 'protectable' subject matter so as to comply with some country's

legislation such as US legislative provision.<sup>12</sup> (Harrison 2000). In the case of PBR in India, irrespective of the particular knowledge deemed by the community, everything is being documented as falling within the scope of protection.

However, in order for a published knowledge to be searched as a part of establishing prior art, some form of legislation must be enacted. As Harrison in '*Community Biodiversity Registers as a Mechanism for the Protection of Indigenous and Local Knowledge*' points out the registry merely publishes knowledge outside of the patent system to subsequently defeat patents, which are proved copied or were based on the registered knowledge. But the effectiveness of the registry comes in question, if there is no legal framework for the patent office to search for TK in this registry. One of the central challenges for the PBRs to be an effective mechanism for the knowledge protection is that legislation amendments will have to be enacted in order to require the extension of searches to such biodiversity registers (Harrison 2000). The TKDL, the digital database that is being prepared at national level in India is being developed in a way that it complies with the International Patent Classification (IPC) so that the information on prior art is available to the patent examiners before any patent is provided.

Another challenge associated with TK documentation in general and registers is particular is that the information that has remained in secret within specific communities would be open for public after documentation. But as suggested in the WIPO toolkit, documentation need not necessarily be same as putting TK in the public domain; if the community or the knowledge holder want to keep their knowledge secret, the documented TK can still be kept confidential or restricted for others apart from the knowledge holders (WIPO/GRTKF/4/5 2002). For this, defensive mechanism is required in the process and documentation format itself. Documentation formats could have two parts: the first part having information about biological resources with just indication of associated TK for specific species (part B of the format in Annex 5B); and the second part having the TK in detail to the extent communities like to put them in the written form (see part C of the format in Annex 5B). The former could be put in the public domain while the latter may remain within the community themselves. Benefits to the local communities could be accrued if trade secrets are established with the information they have.

The issue of prior informed consent (PIC) is very important to be considered while talking about the risks and challenges of TK documentation. While preparing the community for documentation, they should be warned of the pros and cons of documentation and let them decide if they want their knowledge to be documented at all, and if yes, then to what extent. A number of countries like Brazil, Costa Rica, India, Peru, Philippines, Andean Community (Bolivia, Colombia, Ecuador, Peru and Venezuela), some African initiatives (based on model Organization of African Unity Law) are either providing or proposing to provide protection to TK through a combination of various systems including *sui generis* system. These legislations contain provisions for PIC as well as some restrictions on applying for IPRs based on biological resources and associated TK without PIC (DOC/GOI 2002).

The National Innovation Foundation (NIF) of India has developed a PIC form, which has to be filled before anyone enters his/her knowledge in the national register (refer to Annex 6). It will specify the conditions under which the knowledge provided to NIF can be shared with third parties, with or without restriction on commercial or non-commercial basis. The PIC

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<sup>12</sup> According to US legislation, some kind of parameters for protectable subject matter would have to be developed in order for searches to include the Registry for patent examination.

form also provides an option for suggesting benefit-sharing arrangement, should that technology or TK be commercialized (Ref: [www.nifindia.org](http://www.nifindia.org)).

Various international conferences have also considered PIC a requisite for patent claim or to enter into benefit sharing agreement between two parties. The Cusco Declaration on *Access to Genetic Resources, Traditional Knowledge and Intellectual Property Rights of Like-minded Megadiverse Countries* considers the need to present, prior to the issuance of patent, a PIC agreement with the country of origin of genetic resources and proof of the legal provenance of genetic resources and/or TK that are used in or are a part of an invention. The Johannesburg declaration on *Bio piracy, Biodiversity and Community Rights*, on the other hand, proposes that access to biological/genetic resource and knowledge should only be permitted with PIC of the local/indigenous communities over their resources and knowledge.

Another challenge of the documentation exercise is the sustainability of the approach adopted. It is important that the documentation exercise provides benefit to the local community and a longer term perspective should be planned for TK protection. As in case of documentation exercise in India, the PBRs are being prepared in a massive scale but in most of the cases, the next steps regarding the use of the prepared registries need further exercises.

The information to be collected for documentation depends upon the objective of undertaking the documentation exercise. Risks can be minimized if the documentation format is based upon the objective for documentation. If documentation is being done with an objective to share information on biodiversity and TK to a wider public or to protect TK from being eroded, detailed documentation of the traditional technology is necessary. Similarly, if the documentation is done to establish a positive protection strategy, the register format should be self-explanatory in the sense that detailed information on biological resources and associated traditional technology is available in the documentation. On the other hand, if the documentation aims to establish a defensive publication strategy or to promote value addition and research, a level of secrecy and filtering in the information documented is necessary.

#### **5.5.4 Capacity Building Approaches**

Appropriate trainings to the facilitators and local resource persons before the actual documentation process are found to be the generally adopted strategy to prepare the community for documentation.

Gadgil (2002), in his methodology manual for PBR preparation in India suggests that capacity building is a continuous process extending in all phases of biodiversity register preparation. According to Gadgil, capacity building is required in three different areas:

- i. building taxonomic capacity of the scientific and technical experts through resource materials and training programs;
- ii. building capacity of technical/scientific experts and field investigators for landscape ecology so as to increase capacity to collect information on the framework of distribution of different species and their assemblages in different ecological habitats through resource materials and training programmes; and,
- iii. building capacity for resource management as the ultimate objective of PBR process is to promote biodiversity resource management. This includes developing resource material for building human capacity for sustainable harvests, storage, preliminary processing, local value addition and efficient marketing of biodiversity resources (Gadgil 2002).

In order not to constrain the documentation process due to illiteracy including those of women, literacy classes along with simple accounting classes are necessary (Rijal *et. al.* 2003, an unpublished paper). However, in most of the documentation exercises reviewed so far, such a capacity building measure have not been considered. According to Rijal, enhancing capacity of the CBOs is also important for documenting biological resources related knowledge as these institutions play pivotal role in mobilizing communities as well as strengthening their capacity for documentation.

### **5.5.5 Custodians of Documented Information**

Experiences of biodiversity registers in India indicate that the registers should be kept with village Panchayat as a controlling authority. The State Governments in India support biodiversity and TK documentation. However, Village Panchayats are designated as the owner of the PBRs that have helped the local communities feel ownership over the local biological resources and TK.

In the documentation effort undertaken by the Kalpavriksh of Pune and the Beej Bachao Aandolan of Tehri Garhwal of Uttar Pradesh, India, it was decided that a copy of the register prepared would be kept in the village and another copy would be kept by Kalpavriksh by the mutual agreement between Kalpavriksh and concerned Village Panchayat. It was also decided that the information in the register could be used and distributed only with the prior consent and knowledge of the villagers (WTO 2000). Similarly, the Biodiversity Registers prepared by the Gene Campaign remain with the community and they are the custodians of the documented information. However, copy of the register is also available with the Gene Campaign.

According to G. Utkarsh of FRLHT, much of the TK can be better protected both from erosion and bio piracy through publicity and not through secrecy. The registers can be better protected by publicizing their claims to unique knowledge. It can be best used for rewarding innovative tradition and practices of sustainable use. Publications of summary, if not the details about the register could become a better evidence of prior informed knowledge than the register itself. Such publicity is also deemed helpful in restoring social faith in the traditions and promotes sustainable use and conservation of biodiversity (Utkarsh 2002). However, it is important to consider the fact that, in case the information published is misappropriated, then the cost involved for defending the right could be so high that developing countries might not be in a position to fight for revoking the claim. Therefore, it is important that the format for documentation and the coverage of TK to be documented should be decided upon before embarking on the documentation exercise. Appropriate networking of the documentation at local, district and national level is necessary.

The documentation exercise undertaken in Nepal has envisaged local communities as the owner of the documented information. However, the mechanism by which the information is safeguarded and the benefits to the local communities is under serious consideration. The draft AGRBS Bill 2002 of Nepal envisages that the prepared document needs to be registered at National Genetic Resource Conservation Authority. The ownership issue of the prepared registers would be dealt with through subsequent regulations.

### 5.5.6 Benefit Sharing Mechanisms

Use of TK for commercial purposes and sharing of the benefits accruing out of its use have been a widely debated topic in the present world. The use of peoples' knowledge and experiences of medicinal properties of various genetic resources have immensely contributed to most of the plant based pharmaceuticals in use today. Of the approximately 120 pharmaceutical products derived from plants in 1985, 75% were discovered through the study of their traditional medical use (Farnworth 1985, cited in Kate and Laird 2000). Grifo *et. al.* (1997) demonstrate that the base compound in most of the top 150 plant derived prescription drugs and their commercial use correlate with traditional medical use (cited in Kate and Laird, 2000). According to Kate and Laird (2000), around half of the pharmaceutical companies that were interviewed make use of traditional knowledge. For example, a leading pharmaceutical company Monsanto has obtained materials collected on the basis of the knowledge of the Aguaruna in Peru as part of International Cooperative Biodiversity Group (ICBG) collaboration with Washington University and institutes in Peru.

Examples of benefit sharing out of the use of TK are very scarce. However, according to Kate and Laird (2000), 80% of all companies that use ethnobotanical knowledge rely solely on literatures and databases as their primary source for information. This means that documentation of biodiversity into Participatory/Community Biodiversity Register and giving the access authority to the knowledge holders has significant implications for benefit sharing. Cases of TK use are mostly found in the development of medicinal products development. Few examples of benefit sharing out of TK use are presented in the box below.

#### **Benefit Sharing Agreement in India**

Benefit sharing agreement between the Tropical Botanical Garden and Research Institute (TBGRI) at Thiruvanthapuram, Kerala and the Kani Tribe who now lead a primarily settled life in the forests of the Agasthyamalai hills of the Western Ghats in Thiruvananthapuram district of Kerala, concerns the development of a pharmaceutical drug using knowledge and information obtained from the Kanis about a plant locally termed *Aarogyapachcha*.

After learning from the Kanis that the fruit of the plant had anti-fatigue properties, TBGRI discovered after detailed examination and test of the plant that the leaves of the plant had certain medicinal properties. A herbal composition named *Jeevani*, is now manufactured out of the leaves of this plant and three other plants by TBGRI. The process for manufacturing this was licenced to an ayurvedic pharmaceutical company called Arya Vaidya Pharmacy (AVP). The governing council of TBGRI then resolved that 50% of the license fee and 50% of the royalties obtained by TBGRI from AVP would be shared with the Kani community.

A trust fund called Kerala Kani Samudaya Kshema Trust has been registered by the Kanis. In March 1999, a cheque for about Rs. 604,000 (\$12,070) (50 per cent of the license fee and the royalty accrued up to that time) was handed over to the Trust, marking the beginning of benefits to be accrued from sharing knowledge and resources.

#### **Benefit Sharing in South Africa**

A group of South African hunter-gatherers, San community, is to receive six per cent of all royalties received by South Africa's leading research organization, South African Council for Scientific and Industrial Research (CSIR), from a potential anti-obesity drug derived from the local hoodia plant.

Under the deal, the CSIR will also pay the San community eight per cent of all milestone payments received from Phytopharm, its UK-based licensee for the drug. The money will be used for the "general upliftment, development and training of the San community".

The income will be paid to a "San Hoodia Benefit Sharing Trust", made up of a nonvoting observer appointed by South Africa's Department of Science and Technology, a CSIR representative, and three representatives appointed by the San Council.

The trust will also include three representatives appointed by the Working Group of Indigenous Minorities in Southern Africa (Wimsa), an organisation that advocates and lobbies for San rights; as well as a member of Wimsa and a professional appointed by the San Council.

The milestone payments to the San are expected to amount to between US\$1 million and US\$1.5 million over the next four years, with the first payment of about US\$32,000 backdated to March 2002. The San will only receive royalty payments once the drug goes to market, which is not expected before 2008.

The release of the details of the agreement represents the end of a controversy that erupted two years ago when it emerged that CSIR scientists had isolated and patented the active ingredient in the hoodia plant, which the San people have used for centuries to stave off hunger and thirst.

CSIR sold the development rights for the active ingredient of the appetite-suppressing hoodia plant, known as p57, to Phytopharm, which in turn sold the rights to Pfizer. At the time, it was unclear how — if at all — the San people would benefit from the CSIR's dealings with pharmaceutical companies.

*Source: Tamar Kahn, Northern Cape, South Africa*

<http://www.scidev.net/frame3.asp?id=2603200312114127&t=N&authors=Tamar%20Kahn&posted=26%20Mar%202003&c=1&r=1>

#### **Benefit Sharing in Ecuador**

In Ecuador, the Inter-American Development Bank and several NGOs have launched a project entitled "The Transformation of Traditional Knowledge into Trade Secrets." The goal of the project is to catalogue traditional knowledge and then maintain the database at regional centres, access to which will be safeguarded. Each participating community will have its own file in the database and will not be able to access files of any other community. The collected knowledge will be reviewed, and that knowledge which is not common to multiple communities may be negotiated as trade secrets through Material Transfer Agreements (MTA) [See section "Contracts – The Basics"]. The benefits from many MTAs are to be split between the Government of Ecuador and the communities that deposited the knowledge in the database. Payments to communities will then be used to finance public projects previously identified by each community.

*Source: Hansen and VanFleet 2003.*

Even though some benefit sharing examples exist, all of such cases have not been able to run smoothly. For example, in the benefit-sharing example between Kani and TBGRI in India, the Kanis from a number of areas of the Kerala state are yet to become part of the trust that has been established. Moreover, it has been documented that there have been some disputes in the supply of raw materials for producing Jeevani and benefit sharing arrangement between the three main stakeholders: Kani tribal group, TBGRI and AVP. In another case of documentation in La Esperanza in Ecuador, presented in previous chapter, the FSI, foundation that was established with the sale of the book has not been able to run as expected due to the lack of funds. It is, therefore, necessary that appropriate model needs to be developed for benefit sharing that differs on case to case basis.

Similarly, while talking about benefit sharing at international level, the role and stake of developed and developing countries have been found to vary considerably. In some of the

agreements that have been concluded between developing country right holders and developed country corporations, royalties promised range from 0.1% to 3-4%. On the other hand, the royalty proposed to a developed country right holder by a developed country corporation was as high as 10%. This brings to the negotiating power of the local communities who are right holders but do not have the capacity to get their fair share from powerful corporations (Kaushik 2002). The ability of an institution involved in access agreements to enter into legally binding benefit sharing commitments is strongly influenced by the legal and policy framework prevailing in the country where the institution is based.

Benefit sharing agreement must precede approval of IPR applications, even if PIC was not sought before physical access to material or knowledge. Besides, it can be interpreted in more ways than mere cash compensation is not enough to ensure the equity in benefit sharing. While intellectual benefits relating to knowledge could be as royalty, or awards, or in kind as felicitation, benefits relating to physical access to material include resource usages or regulation rights. The monetary benefits could include: a). upfront or initial payments for collecting samples; b). milestone payments, when the product development or marketing starts appearing feasible; c). long-term share or royalty, public fund directly contributed by the industry for sharing with other communities who do not participate in the contract (Utkarsh 2002).

According to Sahai of Gene Campaign, benefit sharing arrangements in monetary terms could be in various forms such as data base access- communities should be the beneficiaries of revenues collected from database containing TK; bioprospecting and research fee to go to the community funds; milestone payments- prospector paying a fee for every milestone reached during the research if TK is used for the research and the fee going to the communities' funds; and gene bank access fee while the access fees will go for the communities who have contributed for the bulk of the material (Sahai 2002).

### **Types of Benefit Sharing**

Talking about benefit-sharing mechanism, the International Cooperative Biodiversity Groups (ICBG), launched in 1992 with funding from the US National Institute of Health (NIH), the National Science Foundation (NSF) and the US Agency for International Development (USAID), has launched projects in ten countries in various continents including Asia. The ICBG employs an experimental, multi-disciplinary, relatively large-scale approach to drug discovery with advance payment approach for benefit sharing and has three main goals: to improve health through the discovery of new drugs from natural sources; to conserve biodiversity, while developing local capacity to manage natural resources; and to promote sustainable economic development (targeted mainly at capacity-building in drug discovery and biodiversity conservation in the source countries themselves). From the outset it was envisioned that future royalties from lucrative new drugs could promote new, equitable, and ecologically sustainable economic development in source countries. It was recognized from its project in rain forest area that finding a new chemical compound and developing it into a new, marketable drug is an uncertain, lengthy and expensive process. This means that future royalties must not be the only economic incentive. Source-country capacity building was seen as a more immediate and sustainable economic development process

*Source: Green et. al. 1999*

### 5.5.7 Role of Customary Laws

Customary laws play an important role in protecting, maintaining and preserving TK in many communities. Such laws may be based on principles of collective rights, free flow of knowledge and/or reciprocity. In terms of IP protection, seeking to extend existing modern systems of IP protection to such communities might undermine their existing customary systems of protection. (Commission on Intellectual Property Rights 2002). The WIPO IGC considers that continued application of customary laws is another complimentary mechanism to IP protection by which TK can be preserved (WIPO/GRTKF/IC/4/5 2002).

In case of benefit sharing example between TBGRI and Kani tribe of Kerala in India, there has been an issue of Customary Law breaking. The Kanis are no longer a single cohesive unit or community and there is no uniformity in the Kanis perceptions of benefit-sharing arrangement proposed by TBGRI. TBGRI primarily interacted with the Kanis from one village Panchayat area who have been supportive of TBGRI's idea. However, Kanis of other areas have expressed their misgivings about the arrangement, especially in relation to the fact that they did not follow the customary requirement of seeking permission from the medical practitioners among the Kanis before using the plant. TBGRI has been criticized to some extent due to this issue.

Several other examples of customary laws important in biodiversity conservation could be cited. The Cholanaikkan tribals of Kerala have elaborated social procedures to conserve and share natural resources. They have elaborate rituals to demarcate the ranges from which individual families can collect various resources. From the common lands, resources can be extracted by the users according to strict rules, which give the right to a particular honeycomb or tree to the first person who spots it and reserves it. The person or the party who has first sighted beehive and have accordingly marked the tree alone the right to collect honey at that time and also in subsequent years from the same tree. This rule is customarily never transgressed. Likewise, the Cholanaikkan have well defined principles that allow the members to gather and extract minor forest produce within their respective regions. There is no restriction on gathering edible tubers, roots, leaves and fruits for self-consumption. One is free to move in the entire forest region and to collect edibles as and when required. However, there are rigid norms regarding the collection of minor forest produce. If the territory of another Cholanaikkan group is trespassed to collect minor forest produce, it is considered as an offence (Sahai 2002).

## **6. SUGGESTED APPROACHES FOR TK DOCUMENTATION IN NEPAL**

In the context of Nepal, approach for documenting biological resources and associated TK should focus mainly on actions that create awareness, recognition and appreciation of TK so that conservation accompanied by benefit sharing becomes the agenda for resource management. Fostering empowerment of local communities and creating an environment whereby they can benefit from their conservation and sustainable utilization practices is necessary for enhancing biodiversity conservation through documentation. The documentation should facilitate better management of biological resources. It should also be geared towards improving upon the user practices to contribute to poverty alleviation by linking conservation with economic potentiality of the resource base.

Community Biodiversity Register (CBR) is an important component for TK documentation in Nepal. In rural areas of the country, where literacy rate is very low, this approach might have to be complemented with other approaches such as photography, herbarium collection, video recording and audio-taping. This would also capture knowledge that exists in diverse expressions such as rituals, traditional practices, folklores and songs. Nevertheless, practical considerations like cost-efficiency and technical know-how for storing and retrieving documented information limit the use of audio/video for entire documentation.

Owing to the physiographic, ecological and social characteristics of the country, various modalities might have to be followed while implementing TK documentation exercise. This chapter suggests processes and methodologies and alternative strategies for the documentation in Nepalese context. Prior to suggesting the steps for the documentation process, subsequent sections describe considerations such as the IP aspect of communities, PIC of the knowledge holder(s), coverage of information in CBR and the format for documentation.

### **6.1 ASSESSING INTELLECTUAL PROPERTY (IP)**

Assessment of IP of the TK holders is central while initiating documentation exercise that would also lead to protect communities' rights. The AGRBS Bill, still in draft form, is the only regulatory document developed in the country so far that deals with biodiversity related TK. The bill proposes preparation of community level biodiversity registers, which have to be registered with the proposed National Genetic Resource Conservation Authority so that they serve as specifications to acquire the IPR over the resources. It, however, does not detail out the IP aspect of TK.

To this end, enough capacity for documentation should be developed at national, district and local levels for undertaking the documentation exercise. However, both the documentation and capacity building should go side by side. The actual documentation exercise should proceed with capacity building at various levels with due consideration that IP aspect of the knowledge holding communities is well addressed. Before starting documentation, it is necessary to assess and clearly identify the types of biodiversity related TK and details of the subject matter to be documented. Besides, information that the community is willing to disclose should only be considered for documentation. PIC of the communities considered for TK documentation should be sought as a way to address IPR of the communities over the knowledge they possess.

The aim of the documentation should not be just contributing for putting the community knowledge in the public domain. It should rather ensure property rights of the communities. Therefore, it is essential that either the government pass the draft AGRBS bill with required modifications, or devise mechanisms so that the documented knowledge is not pirated. One of the possible options, until the AGRBS Bill is passed, would be to put a filter between the knowledge that remains within the community and the bulk that might go to the public domain (e.g. VDC, district and national levels).

In the absence of national IP laws, available customary laws and community agreements should be explored and documented which might help establish rights of the communities over their knowledge.

## **6.2 PRIOR INFORMED CONSENT (PIC)**

Prior approval of the knowledge holding communities is to be made mandatory before collecting TK related information from the communities. This is especially important if the documentation is carried out by institutions or parties other than the communities themselves.

The requirement for PIC should be determined depending upon whether the knowledge exists within a wide public domain or remains within the particular community (or limited members of the community) under consideration. It is necessary to fill up PIC form if the knowledge is specific to the particular community or few individuals of the community.

A PIC form needs to be developed in a way that establishes evidences of prior approval with respect to the information compiler(s) and the knowledge holders. The form should specify the purpose of the documentation exercise, possible uses of the community/individual(s)' knowledge that will be documented, conditions for use and provisions of benefit sharing if the knowledge is used. It should also have the provision of communities' right to inquire the status of their use. A provision should be made so that both the compiler and the knowledge provider sign the form. This would oblige the compiler to safeguard misappropriation or disclosure of information to parties other than the concerned authority while the knowledge holder (individual or community) provide consent to use the knowledge for the said purpose. However, the community should be fully warned beforehand that by filling the PIC form they are agreeing to the fact that their knowledge could be used for the said purpose and they agree to share benefits if the knowledge is used. It is also imperative to make the community clear that the benefit might not be immediate and might take a longer period. A proposed PIC form to be used for the documentation exercise is provided in Annex 6B.

## **6.3 COVERAGE OF INFORMATION IN COMMUNITY BIODIVERSITY REGISTERS**

The current TK project will basically follow the HMG/N approved formats (Refer to Annex 5) for documentation of biological resources and TK. However, certain modification shall be made, where necessary, to capture ground realities. The information to be documented will include details on the following:

1. Characteristics of the documentation site/VDC(s): Information such as physical, ecological and socioeconomic characteristics like area, physiography, vegetation, bioclimatic characteristics, number of households, population, agricultural pattern, livestock composition etc.

2. Characteristics of the community that is being considered for documentation. It will include ethnicity, cultural pattern, main occupation, and other socio-economic characteristics. The resource map of the community settlements will also be annexed in the CBR.
3. Information on biological resources: Records of those species/breeds/varieties in the surrounding area that are/were of significance to humans and animals would be documented in priority. Biological resources from various ecosystem categories such as agriculture, forest, wetland, rangeland and others should be included. Available species and their varieties/breeds, the taxonomic details, unique physical characters, habitat and distribution of these bioresources, use value of the resource (food value for humans or animals, commercial / economic value, medicinal value, cultural / religious value etc), resource users, period since when the resource is / was used, species part used, season and time of resource availability, availability and conservation status in the past and at present and trend of resource availability are important to be covered. In case of plants, whether any species is cultivated, uncultivated or wild is an important factor and source of seed if the species is cultivated should also be recorded. If any species was used in the past, the biodiversity register should also include information as to why it is not used at present.
4. Details of traditional knowledge / technology / skills / practices in codified or non-codified forms. Codified knowledge such as ancient literatures, manuscripts and individual writings will also be available at the national level while non-codified knowledge existing in public/community domain or within definite group(s) of people in the forms such as cultural rituals, songs, legends, beliefs, traditions or skills that are practiced or were practiced in earlier days will be documented in the field level. The documentation should not only include knowledge that prevails in practice and use for the conservation, sustainable utilization and management of biological resources, but also those that are supposedly obsolete, lost or extinct.

As mentioned in the Part C of the format, detailed description of TK should be covered in regard to knowledge, skills and technology including methods of collection, preparation (ingredients and processing techniques), mode of use, method of storage, related customary laws and custodian individuals/members. It is important to prioritize types of TK such as those at risk of disappearance or TK having the potential for commercialization etc. The people-scape to be considered should include diverse occupational segments such as farmers, fishermen, forest produce collectors and traditional healers and practitioners from diverse groups of the community with their own cultural entity (e.g., ethnic, tribal, caste or others). Gender and disadvantaged and marginalized groups are important considerations that needs to be integrated while selecting community for documentation. Duplication should be avoided. The TK associated with biological resources may encompass the following fields:

i. Knowledge associated with agro-biodiversity:

- cultivation, harvesting, use and storage of various crops breeds and varieties / landraces / cultivars;
- farmers' innovations in terms of developing new plant varieties;
- farmers' innovations/approach of developing new livestock breeds/varieties and use of animal parts;

- species and products important in terms of the ethnic / cultural / moral / ethical values; and
- medicinal value of agrobiological resources.

ii. Knowledge associated with forest and wetland resources:

- wild plants inside/outside forests or water bodies used for food, fruit, fiber, dye, tan etc.;
- medicinal use of various plants and animal species, birds as well as microorganisms or their parts;
- knowledge of birds, animals etc for weather, climate and harvest etc. as environmental indicators;
- knowledge of floral species used for addressing ecological problems;
- use of various species/products, resources being an integral part of knowledge holding communities (use such as pottery, architecture, decoration etc);
- knowledge of sustainable collection, harvesting and use;
- knowledge associated with wild relatives of cultivated species, their use and conservation; and
- fish species and their various uses.

iii. Knowledge associated with wild animal species: use of animal species or their parts (nutritional value, medicinal use, economic purpose etc) for climate forecasting and knowledge in terms of conservation of animal species.

iv. Others:

Knowledge associated with specialized occupational groups such as traditional healers such as *Vaidhya, Amchi, Guvaju, Sudini*, or those practicing spiritual healing techniques such as *Dhami, Jhakri, Vaidhya, Jyotish, Tantrik, Amchi, Lama, Gubhaju, Pundit, Mata, Ajima, Budhi Bajju, Guruwa, Mata* and so on; fishing communities and their fishing practices; hunters (bee-hunting etc) and their sustainable practices; potters; blacksmith; and carpenters etc.

## 6.4 DOCUMENTATION FORMATS

It is essential that the format be understandable and easy-to-use for collecting information. The format standardized by MFSC / HMGN (refer to Annex 5B) has a simple structure that is easy to use and covers broadly the required information. Information collection should, therefore, be done on the basis of this format. However, slight modification / addition in this format is suggested in order to incorporate the elements listed below.

- To provide clarity in terms of the information expected to be recorded in each category of sections A, B and C (In Nepali Khanda KA, KHA and GA respectively). It is necessary to make it more understandable for the local resource persons, who would actually use the format for documentation. For example,
  - In Khanda KA, Total area (*Kul Chhetrafal*) should be more specific, for e.g., area of VDC or settlement etc. The main biodiversity areas (in the VDC) should be recorded in area by percentage. The format does not specify the level of information to be provided. In dealing with such a situation, (A guiding manual is expected to be prepared soon).

- To include specific characteristics of the particular community in Khanda KA, whose knowledge is being documented (e.g., population and household numbers, major occupational groups, community composition and other socio-economic characteristics)
- Physiographic characteristics and bio-climatic information of the documentation site (that would form the background information for the CBR). This should also be included in Khanda KA
- Section B (Khanda KHA) of the format should be modified:
  - To include scientific name of biological resources
  - To categorize the bio-resources in terms of its source ecosystem such as agriculture, forest, wetland and rangeland so that information recording would be more systematic and precise, one more column needs to be added before the bioresources are recorded. This would also be helpful in the later stage when an electronic database system is developed
  - To include record of whether a bio-resource is cultivated or wild
  - To avoid duplication of information in. columns 10, 11 and 12, regarding who is involved in processing and use of bio-resources or their products, the manual should explain the depth of knowledge expected to be documented.
  - Details of the processing technique and methodology in connection to traditional /indigenous knowledge associated with any bio-resource(s) should be provided in section 3 while in section 2, only the use of resources / product (who, when, how much and the ingredients) should be recorded
- Information on indigenous knowledge, skills and technology (to be included in Table 3) needs to be more detailed and specific. It should also include knowledge associated with conservation and sustainable use practices. The risks (disappearance, possible misappropriation etc) and prospects (commercialization) of the TK should also have specific mention. Most of these concerns are to be dealt with in the forthcoming manual.

## **6.5 STEPS FOR THE DOCUMENTATION EXERCISE**

### **6.5.1 Initial consultations at National level**

Consultations with stakeholders are necessary in the upfront in the documentation process. At the national level, consultations in the form of workshops and seminars should be done with policy makers, biodiversity and TK experts, relevant ministries and their departments, universities, conservation related non-government organizations/institutions and national media. Such consultations should focus on following topics:

- need and importance of biodiversity and TK documentation exercise;
- approaches to be adopted for TK documentation;
- possible negative consequences of TK documentation;
- security of the documented information;
- possible ways of assessing IP system, for positive and defensive protection;
- clarity regarding the purpose of documentation;
- processes and procedures to be adopted for documentation;
- format and unit for documentation (e.g., ethnic communities and VDCs);

- legal framework required;
- existing national capacity for the documentation exercises;
- necessary institutional framework;
- roles and responsibilities of various institutions and coordination/cooperation among partner organizations;
- formation of advisory committee providing policy guidance;
- formation of multidisciplinary team of experts at national level providing technical support for the exercise; and
- highlight of draft Bill 2002.

### **6.5.2 Selection of Study Sites**

Selection of an administrative boundary as a documentation unit might not always work in Nepal. In most cases, Village Development Committees (VDC's) - the smallest administrative units, are heterogeneous in terms of cultural and ethnic diversity. In order to avoid duplication of TK among communities, particular community settlements as a documentation unit would be appropriate and the register prepared in the unit would be a Community Biodiversity Register (CBR). In this respect, the documentation unit may encompass more than one VDC. The advisory committee should be responsible for defining communities, landscapes and VDCs for documentation.

The sites for the study should be:

- rich in bioresources;
- representative in terms of development region and physiographic zone;
- appropriate in terms of the willingness of the communities to participate;
- appropriate in terms of existence of NGO(s)/CBO(s) or educational institutions that are active in biodiversity conservation activities;
- accessible and secure having local contacts; and
- having communities minimally disturbed due to recent developments.

Based upon the above criteria, appropriate landscapes in various districts have to be selected and approved from the project advisory and coordination committee. Within these landscapes, representative sites will be selected in field at a later stage. The selected site may lie in one VDC or part of many VDCs. Original home range of a particular community under consideration would help to define the area for documentation.

### **6.5.3 District Level Consultations**

District level consultations are required for generating awareness among district level stakeholders on the need for the documentation and ensuring that they extend full support and cooperation in undertaking the exercise. The stakeholders should include relevant district level institutions such as government line agencies, District Administrative Office, DDC, conservation oriented NGOs, networks like FECOFUN, university / colleges and the district level traditional skill practitioners and traditional healers. One- to three-day workshop should be organized in each district selected with specific objectives.

- Sensitize district level stakeholders about the importance and need of biodiversity and TK protection, communities rights and the role of the documentation in protecting, recognizing and rewarding the TK and the knowledge holders.

- Form district level biodiversity coordination committee with the joint effort of DFO and DDC to guide the CBR development in the district and integrate biodiversity related issues in the district level planning processes in future.
- Identify willing and interested organizations/institutions (GOs, NGOs, academia and networks) or individuals in undertaking or participating in the documentation exercise.
- Identify potential resource persons who could actually volunteer for the documentation exercise.

#### 6.5.4 Preparation of District Resource Persons

Once the district level stakeholders are sensitized, relevant organizations, institutions and individuals willing and interested to undertake the documentation exercise should be identified. This task will be carried out during initial consultations in the selected district in each developmental region. The second step should be the identification of potential resource persons who are willing and motivated for volunteering the documentation exercise. 15-20 district resource persons will be selected from each district. It is important that adequate number of women are selected as resource persons. Sensitization of stakeholders and selection of resource persons should be completed within a week. Various modalities could be used while selecting resource persons at the district level.

- i. One approach is the selection of resource persons from diverse organizations: DDC representatives, members of relevant government line agencies such as Forest, Agriculture, Livestock, Administration, district level NGO's working for biodiversity conservation and natural resources management, district level networks such as FECOFUN, teachers and students of universities and colleges and traditional healers and practitioners at district / *ilaka* level could serve as excellent resource persons.
- ii. Another approach is to select district level networks and federations, if interested and available in the selected district. Members of such networks could serve as district level resource persons to carry out the documentation exercise.
- iii. Teachers and students from universities and colleges can also be trained and mobilized for undertaking the documentation exercise.
- iv. DDC representatives could be prepared as resource persons if they are supportive and interested in undertaking documentation.

Another approach could be to identify a district level NGO working in the field of natural resources management who could then organize a multidisciplinary team of people from within and outside the government to work as district level resource persons to be trained and prepared to facilitate the documentation in a particular district.

The selection of district level resource persons will be followed by a capacity building exercise. The national resource persons will conduct three to five days' training programme to the selected district level volunteers to prepare them on the aspects listed below.

- Selection of appropriate settlements/documentation sites in selected VDC(s) by rapid appraisal method
- Stocktaking of the local physiographic, climatic, ecological, vegetation, social and economic environment as the background material for CBR (direct observation and secondary sources)

- Skills of rapport building with the local level stakeholders and community households
- Knowledge and skills of sensitizing, motivating and preparing local communities to undertake documentation
- Skills of picking up local level resource persons who could potentially facilitate documentation if trained accordingly
- Skills of training local resource persons to generate information as per the requirement of the format using selected participatory tools and techniques
- Techniques of various participatory tools and methods for information collection
- Preparing local/community level resource persons for undertaking the documentation
- Preparing them as facilitators/resource persons to provide training at local level for undertaking the documentation

The district level resource persons will have to be mobilized to select appropriate settlement(s) in the selected VDC(s). Settlement(s) should be selected based upon the social and ethno-cultural attributes of the landscape. Identification of appropriate settlements will be done within five to seven days by rapid appraisal methods (direct observation, interviews and group discussions). Three to five district resource persons per landscape will be mobilized for selecting the settlements. The district resource persons will also do participatory mapping to prepare maps of the selected settlements. The national resource persons will provide guidance to the district resource persons during this exercise. The national resource person should also record the boundaries of the community settlements selected for documentation. The number of settlements of the particular ethnic community to be considered for documentation will depend upon the distribution of that community within the selected VDC(s). Selection of communities for documentation and identification of VDCs should be done at the initial stage by the national resource persons (refer to section 7.2.2). Different ethnic groups might occur in a single VDC as distinct settlements or any community being considered for documentation might also have its distribution in many settlements over a landscape occupying more than one VDC. In such cases, criteria for attributing the community (and hence the CBR that will be prepared) to a particular VDC should be decided by the advisory committee together with the concerned DDC and VDCs' officials.

### **6.5.5 Consultations and Awareness Raising at Local Level**

Consultations at local level are important to encourage and motivate local communities for participation and secure support from the local level governing authority (VDC). The district level volunteers should organize meetings in the VDC(s) and selected settlements. Discussion should be done with local communities, local level government authorities, local NGOs, CBOs and groups as well as school-teachers and students. These consultations should focus on the following aspects:

- sensitization regarding the importance of biodiversity, need for biodiversity conservation, documentation of TK; bio piracy and IP issues; positive and negative aspects of documentation; and the participation, support and motivation required for undertaking the documentation exercise;
- identifying communities' needs, willingness for documentation exercise, expectations and priorities with respect to biological resources and TK through group discussions;
- analyzing the problems and constraints that hinder community participation for documentation exercise through participatory ranking;
- identifying the communities, individuals, groups, CBOs, local level NGOs and schools willing and interested in undertaking the documentation; and
- identification of local resource persons.

The TK documentation approach in the Nepalese scenario demands increased awareness among the local communities regarding their role in the documentation of biodiversity and associated TK. The district resource persons should conduct awareness-raising programmes in the community settlements and should focus on motivating the communities for documentation helping them to assess the need for their participation. Group discussions in selected community settlements will be done for raising awareness. The following aspects should be considered for generating awareness:

- the need for biodiversity and TK protection;
- the role and importance of the local communities in biodiversity conservation and sustainable utilization;
- community rights over biodiversity and TK;
- need for the documentation; expected outcomes of documentation exercise and the limitation on documentation, and what it cannot achieve;
- pros and cons of the documentation including bio piracy and IP issues;
- success stories out of community participation for resource management; and
- the PIC requirements.

At this step, the district resource persons will also collect information on the local biophysical and socioeconomic characteristics of the VDC and the documentation site(s). This information is collected from the district and village profiles, other secondary information sources and direct observations.

#### **6.5.6 Preparation of Local Level Resource Persons**

As mentioned in the previous section, the district level resource persons identify interested and willing individuals who could serve as local level resource persons for undertaking documentation. Gender aspect is very important and should be well integrated while selecting resource persons. Resource persons at local level should be selected from various organizations. They will actually carry out documentation. Several modalities could be applied for selecting these local level resource persons depending upon the local reality.

- Interested members from youth clubs, traditional skill practitioners (e.g., *Sudenies*), local traditional healers, village leaders, ward members, farmer leaders, village animal health workers, social workers, school students and teachers and educated members from the particular ethnic community under consideration as well as members of local NGOs / CBOs / groups can be selected to form a team of local level resource persons. These persons may be trained for undertaking documentation.
- Due to the lower literacy rate among rural communities, the mobilization of the locally based organizations and community based groups would be more effective. This would also reduce the time and cost for the exercise.
- An alternative approach is to motivate and prepare the communities themselves for undertaking TK documentation. Literate males and females of the community may work as local resource persons.
- Alternatively, interested local school(s) can take the responsibility of the documentation exercise. Teachers and students may well serve as local resource persons.

For each community considered for documentation, about three to six local level resource persons will be selected. However, the number and type of resource persons will depend upon the size of the community and their distribution.

Capacity building of local resource persons is the next step. It is important in order to equip them with the ability to motivate local communities for information sharing, increase communities' participation and apply participatory techniques to generate data. Sensitivity and seriousness of these resource persons are crucial for gathering reliable information. The district resource persons will provide training to these persons while the national level facilitators would provide necessary guidance. With this training, the local resource persons should be able to conduct the exercise. Training for local resource persons should include the following aspects:

- Community mobilization for undertaking documentation through household visits;
- Selection of key informants and knowledgeable persons;
- Use of documentation format and information to be collected;
- Appropriate participatory techniques for data collection;
- IP issues and communities/individuals' right;
- Ethical issues associated while collecting information;
- Security and confidentiality requirement for the documented information; and
- PIC requirements.

Local level consultations, identification of local resource persons and their training will be done in 15-20 days. The local resource persons once trained will have three main tasks in each documentation site as mentioned below.

- Motivating the local people: this could be done by door to door visit if the number of households is low and the community is scattered in one or two settlements. However if the community is fairly large and scattered in many settlements, then it is necessary to organize group meetings in each settlement. Participation of both males and females should be ensured in such meetings. It is suggested that the team of resource persons, to the extent possible, should represent differing settlements. For each community this activity shall be completed in 4-5 days. Accordingly, the team should divide and be mobilized in multiple settlements. Each team will consist of at least one district resource person.
- Select key individuals on the basis of set criteria: during the process of awareness generation and motivation, local resource persons will also identify key informants. Key informants are the knowledgeable individuals of the community and should be selected from diverse occupational groups such as farmers, traditional healers and traditional skilled practitioners, religious leaders (pundit, priest etc), plant/animal collectors and traders, fishermen, livestock breeders and so on. It is important to integrate both women and men so that gender specific information could also be incorporated. Important criteria for selecting key informants should be that s/he or his/her community should be practicing their skills from a long period of time. From the Indian experience, age factor of the key informant is quite important for getting reliable data. The informant should be preferably of above 45 years of age.
- Collecting data using participatory techniques

### **6.5.7 Collection of Biodiversity and TK Data**

The local resource persons will prepare a checklist of information to be collected based on the documentation format. Participatory techniques will be used with focus group discussions and semi structured interviews with key informants. PIC form will be completed before collecting TK information. Three local resource persons and at least one district resource persons should be involved in applying the participatory technique in a settlement.

The information collected from knowledgeable individuals should be crosschecked with other members of the community in group. Local biological resources that are not identified need to be complemented with either photographs or samples of the species. For this, it is important that service of a taxonomist or botanist is available for each documentation site. He/she should be responsible for collecting sample species, providing scientific identity and taking pictures properly. In case identification could not be achieved on site, the sample should be sent to a national resource person (taxonomist) who will help in identification.

Once the required data is collected as per the checklist, it is necessary that the local resource persons verify it with the community and obtain their feedbacks. For this, a community level consultation should be organized in each settlement. In case the knowledge is within limited members / individuals of the community, then it is essential that certain level of scrutiny and confidentiality is maintained during such consultations. Local resource persons should not disclose such information to a wider public.

It is also important to organize an interaction programme with district level stakeholders once the community level activities are completed. A one-day workshop will help share information and experience of the documentation exercise and get feedback from the stakeholders.

The time and cost effectiveness of TK documentation exercise is crucial. The process beginning from the district level consultation up to data collection by local resource person as needed for a CBR should be accomplished within two months period. It is necessary to mobilize district resource persons and local resource persons in such a manner that the process is undertaken in multiple sites (settlements) at the same time. However, it is also important that the exercise be closely monitored and guided by national level facilitator(s). At least three district resource persons should be allocated per site, the national resource persons providing necessary backstopping and guidance.

### **6.5.8 Preparation of Biodiversity Registers**

Based upon the collected data from each settlement, the Community Biodiversity Registers should be prepared. With the help of community resource persons, district resource persons and national level facilitators involved in the documentation exercise, the organization / institution facilitating the documentation exercise should prepare the CBR document in standard format.

The completed CBR will have three parts.

Part 1 should be descriptive and should deal with methodology and approach adopted, static features such as the salient features of the study sites (ecological and physiographic) and community characteristics. This part should provide details of the individuals holding the knowledge and resource persons volunteering for the exercise.

Part 2 should cover dynamic aspects of TK such as brief introduction about the TK associated with the use of the resources, conservation and sustainable use practices.

Part 3 should cover detailed traditional knowledge / technology associated with the use of biological resources that the local community or selected individuals of the community practice as their skills. This part of the documentation will give as much of details of their knowledge / practices which communities / individuals as they would like to document.

### **6.5.9 Storage and Retrieval of CBR Information**

A mechanism linking the documented information in the form of CBR at local level with district and national levels is necessary. This is important mainly to: a) help establish a database to protect the sovereign right of the country over its bio-resources, b) help establish a database that defends inappropriate IP claims over the country's bio-resources and TK of local communities, c) empower local communities and d) settle the issue of duplication of origin of the biological resources and the associated TK over the country.

At district level also, the first part of the CBR information could be compiled (depending upon how many communities/VDCs in one district could be involved in documentation) will be compiled so that it can then serve the purpose for biodiversity supportive planning.

MFSC, having the overall responsibility of biodiversity monitoring will be the central nodal agency for storing information at national level and monitoring the information at local and district levels. A national database system should be developed that records the biodiversity and TK information. This will serve as a digital library recording the local level biodiversity and TK information. The nodal agency should have the overall authority to maintain and retrieve the information. This database should be developed in such a manner that sector-wise biodiversity and TK information is recorded. The design of the database should facilitate sector-wise information pulling as required seeking permission from the nodal agency. The level and details of information to be included in the database is the most critical part of the database development. The database should record details of the information that is provided in the first part of the completed CBR document as mentioned in the previous section. The traditional technology / knowledge / skills associated with the biological resources will not appear in the national database, and will remain at the custodianship of the community concerned in order to decide upon their consent for access and benefit sharing.

### **6.5.10 Handing Over of CBR**

The CBR should be the property of the local community whose knowledge has been documented. Once the CBR is completed, it should be handed over to the community amidst a special public function. In the existing scenario when there is no institutional and legal mechanism for safeguarding the documented information, it is suggested that the register should remain under the community's ownership. Alternatively, the community themselves should decide whether the document will remain, such as under the custodianship of local level government authority.

## **6.6 LEGAL COVER**

Conservation of biodiversity and protection of indigenous rights of communities will be successful only when CBR prepared at community level is established as information system on biodiversity and the role of local communities in protecting, conserving and sustainable

use of those resources. On the other hand, it is equally important to protect CBRs from misappropriation. In this regard, legal validity of the prepared CBR is crucial.

The Draft AGRBS Bill 2002, once enacted, could be the legal document for the protection of biological resources and related TK. The Bill envisages that the prepared biodiversity registers would serve as document or specification that is necessary for IPR claims over the traditional knowledge and any misconduct or misuse is a punishable act. The Bill also proposes that a Genetic Resource Registration Authority will be created as a national level authority for the registration of the prepared registers. At local level any organization, research institution, the community itself or the Authority could undertake documentation and prepare registers.

The document, however, does not provide a clear mechanism as to how the community's rights are secured out of the documentation exercise. Several important issues such as the ownership of the registers, roles and responsibilities of institutions at district and local levels and the networking among themselves have not been addressed. It does not provide the requirement of PIC for documenting the TK neither does it discuss the existing IPR regime applicable for TK and the IP aspect of TK holding communities. It is, therefore, necessary to have a legal framework that addresses these issues. Besides, the National Biodiversity Strategy of the country is already developed that aims to provide a strategic planning framework for biodiversity conservation, ecological processes maintenance and equitable sharing of benefits. In this context, it is necessary to think whether a broader National Biodiversity Conservation Act should be developed that incorporates the Draft AGRBS Bill as a component. Alternatively AGRBS draft Bill itself be reviewed and further refined to incorporate the important legal aspects of biodiversity conservation.

## 6.7 FUTURE STRATEGY

Preparation of CBR in Nepalese context is a way to empower TK holders to support them to achieve their rights and fostering their direct participation in biodiversity management. Sustainable livelihood of local communities through conservation of biodiversity can only be achieved if community based resource management integrates the notion of equitable sharing of benefit as envisaged in the Article 8(j) of CBD. In order to provide benefit to the knowledge holders for the promotion of their TK, further research and value addition on the TK is necessary. The national level authority maintaining the TK database (MFSC) should initiate and coordinate for the bioprospecting research and development work. Academic and research institutions need to be mobilized for further research and value addition for the promotion of TK. Further data gathering on promising TK could be gathered from the respective community by an appropriate mechanism to be coordinated by MFSC or the HMG/N allocated agency. Benefit sharing among the various parties, either monetary or non-monetary, should be devised as per the arrangements suggested in the draft AGRBS Bill which is as described as per the following:

Condition of resource ownership	Proposed Benefit Sharing Among Various Parties within Nepal	
If the resource is owned by HMG/N	HMG/N	50 %
	Proposed Genetic Resources Conservation Authority	30 %
	Local knowledge holding community	20%
If the resource is owned by local community, individual or institution	HMG/N	50 %
	Proposed Genetic Resources Conservation Authority	30 %
	Local knowledge holding community, individual or institution	20 %

Source: Draft AGRBS Bill 2002

A considerable amount of information on local biodiversity and communities' knowledge will be obtained from the biodiversity documentation exercise. This information should be integrated into community based biodiversity management planning at village, district and national level. In order to institutionalize this, the proposed AGRBS Bill in section 6.3 above should provide mechanisms to integrate biodiversity and TK information in local and national level biodiversity monitoring activities. The Local Self Governance Act (1998) of Nepal requires DDC to formulate and implement plans for biodiversity and soil conservation. The Act also requires VDC to formulate and implement programme for biodiversity and soil conservation. However, no practical measures have been taken to integrate biodiversity conservation, their sustainable use and equitable and fair sharing of the benefits arising out of these into district level decision-making. Thus, the biodiversity information obtained from the documentation exercise would be valuable for incorporation into local level planning and development.

In terms of information sharing, it is also necessary to develop a database on codified classical literatures before they are lost or used by others either legally or illegally. For this, it is important to promote research institutions, interested non-government organizations and national organizations such as much as the Ministry of Health or its departments to take up a national documentation of indigenous literatures and scientific contributions of national significance.

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## **ANNEXES**

<b>Annexes</b>	<b>Title</b>
Annex 1	List of Offices and Individuals Contacted during the Review
Annex 2	Sources of biodiversity and associated TK related information
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Annex 5	Samples of Documentation formats of Biodiversity Registers Adopted by Various Institutions
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Annex 6	Sample PIC forms
Annex 6 (A)	PIC Form of National Innovation Foundation of India
Annex 6 (B)	Proposed PIC form to be Used for Biodiversity and Associated TK documentation in Nepal
Annex 7	Ethnic Diversity of Nepal as per 2001 Census

## ANNEX 1

### List of Offices and Individuals Contacted during the Review

SN	Name	Designation	Organization/Institution
1.	Dr. Rishi R. Koirala	Registrar	Nepal Ayurvedic Medical Council
2.	Dr. Om Gurung	General Secretary	Nepal Federation of indigenous Nationalities
3.	Dr. Tirtha Bd. Shrestha	Plant Expert	Royal Nepal Academy
4.	Dr. Shreeram Pd. Neupane	Chief	Animal Breeding Division, Nepal Agriculture Research Council
5.	Dr. Krishna K. Shrestha	President	Ethnobotanical Society of Nepal
6.	Mr. Bhola Bhattarai	Secretary	Federation of Community Forestry User Groups Network
7.	Mr. Ram. Pd. Uprety	Coordinator	Hill Crop Research Program, Nepal Agriculture Research Council
8.	Mr. Rudra Pd. Sapkota	Program & Planning Specialist	Association of District Development Committee Network
9.	Mr. Bhawani Pd. Kharel	Planning Officer	Department of Soil Conservation and Watershed Management
10.	Mr. Dina Mani Pokharal	Program Officer	ActionAid Nepal
11.	Mr. Shreeram Shrestha	Country Director	USC Canada Nepal
12.	Mr. Ranjan K. Aryal	Under Secretary	Ministry of Law, Justice and Parliamentary Affairs
13.	Mr. Dil R. Khanal	Common Property Lawyer	Federation of Community Forestry User Groups Network
14.	Mr. Ram P. Acharya	Community Forestry Officer	Asian Network for Sustainable Agriculture Bio-Resources
15.	Mr. Saurav Pudasaini	Consultant	National Association of VDC in Nepal
16.	Dr. Gopi K. Sedhain	Coordinator	FRP, Pro Public
17.	Mr. Ratnakar Adhikari	General Secretary	South Asian Watch for Trade and Environmental Economics
18.	Mr. Prakash Sharma		Pro Public
19.	Dr. Shah	Expert	Singhadurbar Vaidhyakhana
20.	Dr. Pisupati Balakrishna	Regional Coordinator	Regional Biodiversity Program, IUCN-Asia, Sri Lanka
21.	Ms. Patricia Moore	Regional Coordinator,	Regional Environmental Law Program, IUCN-Asia, Bangkok
22.	Dr. N. Anil Kumar	Director	Community Agro Biodiversity Center, Wayanad, MSSRF, India
23.	Prof. Madhav Gadgil	Executive member	Indian Institute of Science, Center for Ecological Studies, India
24.	Mr. Utkarsh Ghate	Consultant	FRLHT, India

## **ANNEX 2**

### **List of some of the important sources of information on biodiversity associated TK in Nepal**

<b>Related Category</b>	<b>Relevant Sources of Information</b>
Nepali records on biodiversity	<ul style="list-style-type: none"><li>• Chandra Nighantu</li><li>• Bir Nighantu</li><li>• Charak Samhita</li><li>• Publications from Benaras</li></ul>
Flora	<ul style="list-style-type: none"><li>• Published from Nepal, other handwritten records</li><li>• British Museum</li><li>• Kew</li><li>• Royal Botanical Gardens</li><li>• Department of Plant Resources</li><li>• Ayurveda Campus</li><li>• Electronic Media, TU CDB</li><li>• NARC Plant Genetic Resource Genebank (some 10,000 accessions)</li></ul>
Institutions involved in TK work	<ul style="list-style-type: none"><li>• Green Energy Mission (GEM)</li><li>• The World Conservation Union (IUCN)</li><li>• International Centre for Integrated Mountain Development (ICIMOD)</li><li>• Central Library, Tribhuvan University</li><li>• Singha Durbar Baidyakhana</li><li>• World Wildlife Fund (WWF)</li><li>• Resources Himalaya</li><li>• The Mountain Institute (TMI)</li><li>• Nepal Ethnobotanical Society (ESON)</li><li>• Biodiversity Society</li><li>• Nepal Agriculture Research Council (fisheries, livestock, breeds, horticulture, crops)</li><li>• Institute of Forestry, Tribhuvan University, Pokhara</li><li>• Local Initiatives for Biodiversity Research and Development (LiBIRD)</li></ul>

### **ANNEX 3**

#### **List of Conventions/Agreements related to the protection of biodiversity related TK and the knowledge holders:**

1. Article 15 (1): International Labour Organization, Convention No. 169
2. Article 29: Draft Declaration on Indigenous Rights
3. Chapter 26 of Agenda 21
4. Inter-American Draft Declaration on the Rights of Indigenous People
5. International Union for the Protection of New Plant Varieties of Plants (UPOV) Agreement, 1978 and 1991)
6. Organization on African Unity (OAU) Model Legislation on Community Rights and Access
7. International Treaty on Plant Genetic Resources for Food and Agriculture
8. Convention of Farmers and Breeders

### ANNEX 4

**Table 1: Summary of biodiversity documentation carried out by various organizations in India**

Name of Register/Project	Leading Organization	Region/ Province/State	Organization/Institute/ People involved	Duration	No. of communities/ area covered	Focus	Remarks
People Biodiversity Register Project (PBRP) / People Biodiversity Registers		Kerala; Ernakulum district	Kerala Sashtya Sahtya Parishad (KSSP)/Treachers/Students/representatives from local communities	16 months starting from 1997	Whole district (86 anchayats of 15 blocks)		PBRP was a pilot project of State Planning Board; funded by Ninth Five Year plan (1997 – 2002) under Peoples' Campaign
Biodiversity Register	Tropical Botanical Garden Research Institute (TBGRI)	Kerala			One village Panchayat near where it is located		
Biodiversity Register	Kerala Forest Research Institute (KFRI)				One Village Panchayat Under the jurisdiction of which it lies		
Community Registers	Foundation for Revitalization of Local Health Traditions (FRLHT)	10 sites in 4 South Indian states		1995-1996	Region		
Community Biodiversity Registers (CBRs)	Center for Ecological Studies of IISc, Banglore	50 villages in Karnataka, Andhra Pradesh and other States	NGOs and teachers, local people. local scientists, members of the IISC	1996-1998	50 Villages	More documentation efforts are under progress	Under Biodiversity Conservation Prioritization Project

PBRs	CES	Karnataka	Teachers from undergraduate science college in Karkala, workers from Nagarika Sewa Trust, Local people	2001 - ?	Two coastal districts: Dakshina Kannada, Udupi; 6 sites	to gain experience in chronicling Biodiversity to assist in the work of Local Level Biodiversity Management Committees	Extension of BCCP work with grant from Ministry of Environment and Forests, GOI
School of Biodiversity Registers	CES	Karnataka	teachers form 42 school belonging to the Bharatiya Gyan Vigyan Samiti, district-wide network belonging to Tukum Vigyan Kendra and other teachers	2000 – 2002	Four Broad ecological zones of Karnataka: coast, hilly regions, northern black cotton soil and southern red soil region		undertaken during the preparation of Karnataka State Biodiversity Strategy and Action Plan (KBSAP)
Documentation and dissemination of grassroots innovations	Society for Research and Initiatives for Sustainable Technologies and Institutions (SRISTI)	Nationwide as well as from other countries		1993 onwards		Individuals' innovation	10,000 innovations documented ranging from biodiversity to weather
Village Biodiversity Registers	Deccan Development Society	22 districts in Andhra Pradesh			over 500 biodiversity registers prepared	indigenous knowledge related to agriculture	By 2003, 500 more registers anticipated at the rate of 1 register per Mandal.
Biodiversity Registers	Vruksh Laksha Andalon (VLA) and Nagarika	Western Part of Karnataka			around 50 registers being prepared		

	Sewa Trust (NST)						
Documentation of Indigenous Knowledge	Gene Campaign	South Bihar, Madhya Pradesh and Terai region	Educated tribal youths, elders in a village, medical practitioners and traditional healers		Three tribal groups considered: Mondas and Oraongs in South Bihar; Bhils of Madhya Pradesh and Tharus of Terai	Indigenous knowledge	
	Kalpabriksha in Pune and Beej Bachao Aandolan in Uttar Pradesh	Uttar Pradesh	villagers	1995	Jardhar village of Terhi Garhwal district	documentation of various bioresources used by the community and conservation practiced	
	RANWA	Maharashtra			Supegaon in Phansad wildlife sanctuary of Raigad district	documentation of folk knowledge	
Community biodiversity registers	RFSTE	All over the country	RFSTE, Navadanya and community-level institutions called Jaiv Panchayats constitution villagers	1999 - to date	292 sites	establishment of definitive sovereignty of local communities on their biodiversity resources	First CBR prepared in Agastyamuni village of Uttar Pradesh

## **ANNEX 5**

### **Samples of Documentation formats of Biodiversity Registers Adopted by Various Institutions:**

Annex 5 (A)                      Format used in Ernakulum, Kerala, India  
Annex 5 (B)                      Format used by MFSC/HMG, Nepal

**Annex 5 (A)**  
**Format for data collection under people's biodiversity register**  
**(Ernakulum District, Kerala)**

**1. Millets**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**2. Oil seeds**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**3. Commercial Crops/ cash crops**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**4. Tuber crops**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**5. Vegetable crops**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**6. legumes**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**7. Fruits**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**8. Medicinal plants**

Sl. NO	Crop	Scientific name	Local use	Cultivating Or not	Using for medicinal industry	Local availability	Other information

**9. Aromatic plants**

Sl. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information

**10. Grasses/ fodder plants**

Sl. NO	Name	Scientific name	Main uses	Using part	Other uses	Availability	extinct

**11. Wild relatives of domesticated plants**

Sl. NO	name	Scientific name	Main uses	Using part	Other uses	Availability	Extinct

### 12. Garden/ ornamental plants

SI. NO	Local name	Scientific name	Special Features	Cultivating For commercial purposes	Commercial consumption	Other information
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### 13. Chewing crops

SI. NO	Crop	Variety/Local name	Scientific name	Special Features	Using or Extinct	Seeds available or note	Other information
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### 14. Plants collecting from forest areas

SI. NO	name	Scientific name	Special Features	Cultivating For commercial purposes	Commercial consumption	Other information
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### 15. Timbers

SI. NO	name	Scientific name	Main uses	Using part	Marketing or own use	Other information
--------	------	-----------------	-----------	------------	----------------------	-------------------

### 16. Livestock/ birds

SI. NO	Variety/Local name	Scientific name	Special Features	Cultivating For commercial purposes	Commercial consumption	Other information
--------	--------------------	-----------------	------------------	-------------------------------------	------------------------	-------------------

### 17. Medicinal fauna

SI. NO	Local name	Scientific name	Local use	Cultivating or not	Using for medicinal purpose	Local availability	Other information
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### 18. Fishes

SI. NO	Variety/Local name	Scientific name	Special Features	Using or not	availability	Other information
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### 19. Insects/ pests

SI. NO	Crop	Variety/Local name	Scientific name	Special Features	Season of occurrence	Management practices	Other information
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### 20. Weeds

SI. NO	name	Scientific name	Main crop infested	uses	Season of occurrence	Management practices
--------	------	-----------------	--------------------	------	----------------------	----------------------

### 21. Traditional labour class

SI. NO	Class name	occupation	Using plants or animal	Problems facing	Management practices
--------	------------	------------	------------------------	-----------------	----------------------

### 22. Knowledge holders

SI. NO	name	address	Age	Occupation	Management practices
--------	------	---------	-----	------------	----------------------

### 23. Traditional skilled persons

SI. NO	Area of knowledge	person	Features	Other information
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**Annex 5 (B)**

**Documentation format developed by HMG/N, Ministry of Forests and Soil Conservation**

**: fdbflos hñj s ljljwtf clenÿ**

v08 s, clenÿ /flvg]; dbfosf]; fdfGo hfgsf/l M

ufpF; fdbfosf]gfd (Village/ Community name) M      lhNnf (District)M  
uf=lj =; ÷g=kf (V.D.C./Municipality)      j 8f g=(ward No.) M  
sh ; Wof 3/w/l (Total Household No.)M      sh hg; Wof (Total  
population) M  
sh lfqkm (Total Area) M  
dvo dvo hñj s ljljwtf lfqx? (Main Biodiversity Areas) M

- S[if lfq (Agricultural Area)
- j g lfq (Forest Area)
- ; Aift lfq (Protected Area)
- r/g lfq (Range land)
- l; d; f/ ÷ hn lfq (Wetland)
- kj tlo lfq (Mountainous Area)

dvo dvo s[if koffnlx? (Major Agriculture systems) M  
dvo dvo vfB jfnlx? (Major cereal crops)M  
dvo dvo j : t'ep (Major Livestocks):  
jgsf]dvo dvo lsl; d (Main forest types)M  
jgdf kfog]jg:kltsf dvo dvo khftlx? (Major species found in the forest)M  
dvo dvo jGohGt (Main wild animals) M  
kofudf NofOPsf jg:kltsf]sh k\$ / (Total number of Plants used used)M  
kofudf NofOPsf kfofl, hgfj / / zld lhj fofx?sf]sh k\$ / (Total number of  
animals and microorganisms used) M  
clenÿ /flvg]; dbfosf]gS; f (Map of community) M

tYofÍ ; \$ng÷; j [f0f ul/Psf]ldlt (Date of survey) M  
tYofÍ ; \$ng÷; j [f0f ugI; b:ox? (Members involved in data collection)M  
tYofÍ ; \$ng÷; j [f0f ug{; xofu k'ofpg]; ÷yf (Organization supporting data  
collection) M  
clenÿ bt{ul/Psf]; ÷yfsf]gfd, ldlt / o; sf]kdf0f (Name, date and stamp of  
the organization stamp where CBR is registered)M  
cGo ; Djlgwt hfgsf/l -sxl eP\_ vhfpg](any other relevant information)M

v08 v

; fdbfols h]j s lj lj wtf clen]y

ufp+=====j 8f g+===== uf-lj =; = / g-kf-=====lhNnf ===== ldlTM =====

!	@	#	\$	%	^	&
h]j s ; f]sf]gfd (Name of Bio- resource)	:yfglo gfd, :yfglo efiffdf (Local name & local language)	k\$ f/ (Types)	km/s 56dfpg]vf; vf; u0fx? (Unique characters)	j f; :yfg kf0g] pTkfbg ul/g] j :g]7fpk?, prf0{v], j f/L, kf]y/L, tnfp, j g cflb (Location & habitat)	k0f]udf Nofpg yflnPsf]cj lw j if{/ ; fn (Since when in use)	j lp lj hg / g:nsf] ; f]t:yfglo ?kdf pkn]w 5 ls j flx/j f6 cfoft ul/65 < ul/g]eP sx]ff6 / sg ; dodf (source of seed, gene)

*	(		!)	!!	
k0f]udf cfpg] efu, j :t' sg sg efu / j :tx? (Parts & Products used)	s]sf nflu k0f]u x65g\  k0f]u (uses) h:t] v]Bf6g, cf]flw, lj if, w]ld6 ; f:s]ts c6o		lj z]ftf / u0fx? (Properties)	kz]fwg lj lw (processing) s:n] slxn] sx]f, s; /L, slt dfqdf, cflb vhfpg]	pkef]u / k0f]u lj lw (use) s]sf nflu, s:n] s; /L, slt dfqdf, slxn]cflb vhfpg]

!@		!#		!\$		!%		!^		
; m]lgtf (involvement) -s]s]df ss:sf] Inu,hftl, JolQm wd{kz]f{; m]lgtf x65		cfl]y6 dx]j (economic value) lsgj ]r, j hf/, ; fk6l s]slt sx]Fs:n] s; /L <		; f]sf]xfnsf]cj :yf (status) ; Dej eP; Dd ; m]lg 3/w/L / l]qkm vhfpg]		; f]sf]cj :yfsf] p6d]vtf (trend)		; f]t JolQm / ; dbfo		
; A]f0f	kz]fwg	pkef]u / k0f]u	:yfglo :t/df	uf-lj =; j flx/	kz :t	d]l]od	bh6	j 9bf]	oyfj t	36bf]

v08 u

## hij s lwltfsf]cleny df]ns 1fg, lzk, klj lw÷kbfy? M

l; =g= (Serial No.)	df]ns 1fg, lzk, klj lw÷kbfy\$]gfd (Indigenous knowledge, skill, technology/Product's name)	lsg j gfpg]÷ j f sdf kofu xg] (Purpose of the TK / In what ways is it used)	s; /l j gfpg]j f kofu ug[-s]s]rflx65_ (Processing Technique/ingredients required)	s s:sf]s]s]df ; n]gtf x65 (Who are involved for what purpose)	j hf/ Joj :yf (Economic value)	; ff] JoIQm (Name of resource person /Informant)

## **ANNEX 6**

Annex 6 (A): PIC Form of National Innovation Foundation of India

Annex 6 (B): Proposed PIC Form for Biodiversity and TK Documentation in Nepal

**Annex 6 (A): PIC Form of National Innovation Foundation of India**



National Innovation Foundation

**PRIOR INFORMED CONSENT FORM**



Honey Bee Network

**Traditional Knowledge**

Dear Traditional Knowledge holder(s),

The National Innovation Foundation (NIF) was established by the Department of Science and Technology, Government of India, in March 2000, as an autonomous society to recognize and promote grassroots innovations and traditional knowledge of individuals/communities. This initiative shall help in reducing the erosion of knowledge, increase the social esteem of the grassroots innovators and knowledge providers and help India become an innovative society. NIF strives to obtain the written consent and authorization from all the innovators/knowledge providers to disclose and/or add value to the innovation/traditional knowledge submitted for inclusion in the National Register of Green Grassroots Technological and Traditional Knowledge. An explanatory note, describing the implications of various options given in the form, is enclosed along with this form to assist you to fill up the form. NIF assures full compliance with the conditions specified by you and any modification in these conditions will be taken up only after obtaining your written consent.

**Reference No.:** \_\_\_\_\_

\_\_\_\_\_  
(Signature)  
Stamp of NIF

**Title of Traditional Knowledge/herbal practice:** \_\_\_\_\_

We will appreciate if you could tick 'YES' or 'NO' in the appropriate boxes (for items A to E).

	<b>Yes</b>	<b>No</b>
<b>A.</b> Can NIF share your address with those interested in your traditional knowledge?	[ <input type="checkbox"/> ]	[ <input type="checkbox"/> ]
<b>B.</b> Can NIF display/publish your traditional knowledge on the Internet/ <i>in Honey Bee</i> magazine or any other media?	[ <input type="checkbox"/> ]	[ <input type="checkbox"/> ]
<b>C.</b> Can NIF share your traditional knowledge under the following condition/situation (s)?		
(a) (i) Partial disclosure/summary	[ <input type="checkbox"/> ]	[ <input type="checkbox"/> ]
(ii) Full disclosure	[ <input type="checkbox"/> ]	[ <input type="checkbox"/> ]
(b) Only on commercial terms (if the interested party is willing to pay for it)	[ <input type="checkbox"/> ]	[ <input type="checkbox"/> ]
(c) At no cost for individual use, but on commercial basis for larger use	[ <input type="checkbox"/> ]	[ <input type="checkbox"/> ]

(d) After further research on it [ ] [ ] [ ]

(e) Any other option? Please specify: \_\_\_\_\_

**D.** Can NIF mediate on your behalf to pursue the following?

(i) Developing business plan by third party/students [ ] [ ] [ ]

(ii) Product development [ ] [ ] [ ]

(iii) Intellectual Property Right protection [ ] [ ] [ ]

(iv) Technology transfer to a third party [ ] [ ] [ ]

**E.** Would you like to share the benefits obtained through NIF, with a third party? [ ] [ ] [ ]

If yes, in what proportion out of 100, would you like to share the benefits with the following?

Innovator/TK holder [ ] Community/Village [ ] Innovation promotion fund [ ]

Researchers or those who add value [ ] Institutional overheads [ ]

Conservation of natural resources [ ]

If you want to propose an alternative benefit sharing system, please advise:

F. Which non-monetary benefit will you prefer, if applicable, such as ( YOU CAN TICK MORE THAN ONE)

- Honour in a public function at local, state or national level,
- Recognition in media,
- Recognition in text books in case of really unique distinction,
- Support for contacting other innovators/traditional knowledge holders,
- Linkage with R and D institutions for valorization of knowledge,
- Opportunity to share one's knowledge with others in *shodh yatra* and *shodh sankals*,
- Support to the community to share the knowledge with other communities,
- Guidance form formal or informal sources to conserve the natural resources used in traditional knowledge,
- Supply of scientific information in local language about the herbal or other traditional knowledge,
- Any other such support, specify \_\_\_\_\_.

G. Whether the consent of local community has been taken while submitting the community traditional knowledge to NIF?

Yes [  ] No [  ]

Does not arise [  ]

H. Whether the concerned community has been informed of the improvements made in the traditional knowledge belonging to them Yes [  ] No [  ]  
Does not arise [  ]

I. To what extent the specific traditional knowledge/community knowledge is known and / or practiced within or among the concerned communities ?

Known to few. Known widely. Practiced by few. Practiced widely.

J. In the case of any improvement/modifications done by you in the existing knowledge, with whom would you like the benefit to be shared ?

Only community [  ] Only communicator [  ] Both [  ] Specify share [  ]

However, if the specific traditional knowledge / community knowledge is not public domain, the rights shall belong to the community represented by its leaders.

Declaration : I/We have read this Prior Informed Consent Form and have understood the implications of various choices described in the explanatory note. I/We have voluntarily decided to select the option /options which I/we have ticked above for questions from A to F. I/We further assure NIF that all the information given above is true to the best of my/our knowledge and belief. I/We acknowledge that if the knowledge innovation/practice contributed by me/us

are already in public domain, then the restrictions in the form will not apply.

Name and Address of the Community/Traditional Knowledge Holder.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name of the Nominee/Authorised Representative:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature

Name and Address of witness/Collaborator/Scout/NIF Representative.

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Signature of witness

Date : \_\_\_\_\_

## National Innovation Foundation

Bungalow No. 1, Satellite Complex, Jodhpur Tekra, Premchand Nagar Road, Ahmedabad - 380 015, Gujarat India  
email: [campaign@nifindia.org](mailto:campaign@nifindia.org) [www.nifindia.org](http://www.nifindia.org) Fax: +91-79-673 1903

**Proposed PIC Form for Biodiversity and TK Documentation in Nepal**

**PRIOR INFORMED CONSENT AGREEMENT FORM**

This agreement is being made for the documentation of biological resources and associated traditional knowledge, skills, innovations, technologies and traditions of local communities in order to conserve and sustainably utilize the biological and genetic resources of the kingdom of Nepal. His Majesty's Government of Nepal (HMG/N), with support from IUCN – The World Conservation Union, Nepal, has taken the initiative to facilitate communities for the preparation of their Community Biodiversity Registers. Such registers are prepared as per the documentation format developed by HMG/N. Accordingly provision has been made for the documentation of local biological resources and associated traditional knowledge, which the community would like to protect by documentation.

In this context, Community Biodiversity Register of the local indigenous community of \_\_\_\_\_ Village Development Community (ies) in \_\_\_\_\_ District is being prepared. The community's indigenous knowledge and skills will, in no circumstances, be used for purposes other than the aforementioned reason without the approval of the community concerned. Use of the knowledge by any interested individual or organization for any purpose (commercial, research, intellectual property protection or others) will be coordinated by HMG/N, Ministry of Forests and Soil Conservation or an agency HMG/N assigns.

Documentation of biodiversity related traditional knowledge, skills, innovations, technologies and traditions will only be done as per the consent the community or group/individual within the community provides.

Community Biodiversity Register will have three sections. Section one will have the background information on the documentation site. Section two includes biological resources that are used by the community. Section three documents communities indigenous knowledge skills, innovations, technologies and practices. The first two sections will also remain at national level with HMG/N. Section three will formally be handed over to the community. The ownership of the register will remain with the community concerned. The community will safeguard or find ways to safeguard the register.

The list of household heads of the community will be included in the Biodiversity Register.

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**To accomplish the afore-mentioned task, we, the undersigned, agree to work with District Forest Office in association with \_\_\_\_\_ VDC.**

**V. D. C. Representatives:**

**Name**

**Address**

**Signature**

**Community Representatives:**

**Name**

**Address**

**Signature**

**Organization(s) Facilitating TK documentation:**

**Other Persons facilitating TK documentation:**

---

**WITNESSES**

\_\_\_\_\_  
VDC President  
Chairman  
District Biodiversity Coordination Committee  
Name:  
District:  
Date:

\_\_\_\_\_  
District Forest Officer  
Member Secretary  
District Biodiversity Coordination Committee  
Name:  
District:  
Date

## ANNEX 7

### Ethnic Diversity of Nepal as per 2001 Census (CBS, 2001)

SN	Caste/Ethnic Group	Total			Male	Female
		Number	%	Cumulative %		
	Nepal	22736934	100.00	100.00	11359378	11377556
1	Chhetri	3593496	15.80	15.80	1774709	1818787
2	Brahman-Hill	2896477	12.74	28.54	1426912	1469562
3	Magar	1622421	7.14	35.68	784828	837593
4	Tharu	1533879	6.75	42.43	774924	758955
5	Tamang	1282304	5.64	48.07	641361	640943
6	Newar	1245232	5.48	53.54	620213	625019
7	Muslim	971056	4.27	57.81	501793	469263
8	Kami	895954	3.94	61.75	432937	463017
9	Yadav	895423	3.94	65.69	473421	422002
10	Rai	635151	2.79	68.49	312363	322788
11	Gurung	543571	2.39	70.88	259376	284195
12	Damai/Dholi	390305	1.72	72.59	188329	201976
13	Limbu	359379	1.58	74.17	174760	184619
14	Thakuri	334120	1.47	75.64	164643	169477
15	Sarki	318989	1.40	77.05	153681	165308
16	Teli	304536	1.34	78.38	158647	145889
17	Chamar, Harijan, Ram	369661	1.19	79.59	138878	130783
18	Koiri	251274	1.11	80.68	130424	120850
19	Kurmi	212842	0.94	81.61	111638	101204
20	Sanyasi	199127	0.88	82.49	98006	101121
21	Dhanuk	188150	0.83	83.32	97507	90643
22	Musahar	175434	0.76	84.07	88041	84393
23	Dusadh/Paswan/Pasi	158525	0.70	84.77	82173	76352
24	Sherpa	154622	0.68	85.45	77511	77111
25	Sonar	145088	0.64	86.09	72331	72757
26	Kewat	136953	0.60	86.69	70815	66138
27	Brahman-Terai	134496	0.59	87.28	70623	63873
28	Baniya	126971	0.56	87.84	67308	59663
29	Gharti/Bhujel	117568	0.52	88.36	58023	59545
30	Mallah	115986	0.51	88.87	59649	56337
31	Kalwar	115606	0.51	89.38	61221	54385
32	Kumal	99389	0.44	89.81	48883	50506
33	Hajam/Thakur	98169	0.43	90.25	51617	46552
34	Kanu	95826	0.42	90.67	50706	45120
35	Rajbansi	95812	0.42	91.09	48234	47578
36	Sunuwar	95254	0.42	91.51	48065	47189
37	Sudhi	89846	0.40	91.90	47198	42648
38	Lohar	82637	0.36	92.27	42270	40367
39	Tatma	76512	0.34	92.60	39606	36906
40	Khatwe	74972	0.33	92.93	36843	36329
41	Dhobi	73413	0.32	93.26	38350	35063
42	Majhi	72614	0.32	93.57	36367	36247
43	Nuniya	66873	0.29	93.87	35224	31649
44	Kumhar	54413	0.24	94.11	28289	26124
45	Danuwar	53229	0.23	94.34	26192	27037
46	Chepang (Praja)	52237	0.23	94.57	26685	25552
47	Haluwai	50583	0.22	94.79	26387	24196
48	Rajput	48454	0.21	95.01	25905	22549
49	Kayastha	46071	0.20	95.21	23343	22728
50	Badhae	45975	0.20	95.41	24160	21815

51	Marwadi	43971	0.19	95.61	23205	20766
52	Santhal/Satar	42698	0.19	95.79	21515	21183
53	Dhagar/Jhagar	41764	.018	95.98	20892	20872
54	Bantar	35839	0.16	96.13	18139	17700
55	Barae	35434	0.16	96.29	18479	16955
56	Kahar	34531	0.15	96.44	18109	16422
57	Gangai	31318	0.14	96.58	15808	15510
58	Lodha	24738	0.11	96.69	13018	11720
59	Rajbhar	24263	0.11	96.80	12755	11508
60	Thami	22999	0.10	96.90	11392	11607
61	Dhimal	19537	0.09	96.98	9646	9891
62	Bhote	19261	0.08	97.07	9959	9302
63	Bing/Binda	18720	0.08	97.15	9641	9079
64	Bhediyar/Gaderi	17729	0.08	97.23	9342	8387
65	Nurang	17522	0.08	97.31	9198	8324
66	Yakkha	17003	0.07	97.38	8132	8871
67	Darai	14859	0.07	97.45	7195	7664
68	Tajpuriya	13250	0.06	97.50	6532	6718
69	Thakali	12973	0.06	97.56	6216	6757
70	Chidimar	12296	0.05	97.61	6516	5780
71	Pahari	11505	0.05	97.67	5803	5702
72	Mali	11390	0.05	97.72	5884	5506
73	Bangali	9860	0.04	97.76	5680	4180
74	Chhantel	9814	0.04	97.80	4545	5269
75	Dom	8931	0.04	97.84	4631	4300
76	Kamar	8761	0.04	97.88	4516	4245
77	Bote	7969	0.04	97.91	3881	4088
78	Brahmu/Baramu	7383	0.03	97.95	3441	3942
79	Gaine	5887	0.03	97.97	2857	3030
80	Jirel	5316	0.02	98.00	2582	2734
81	Adibasi/Janajati	5259	0.02	98.02	2558	2701
82	Dura	5169	0.02	98.04	2377	2792
83	Churaute	4893	0.02	98.06	2532	2361
84	Badi	4442	0.02	98.08	2152	2290
85	Meche	3763	0.02	98.10	1830	1933
86	Lepcha	3660	0.02	98.12	1935	1725
87	Halkhor	3621	0.02	98.13	1848	1773
88	Punjabi/Sikh	3054	0.01	98.15	1567	1487
89	Kisan	2876	0.01	98.16	1382	1494
90	Raji	2399	0.01	98.17	1111	1288
91	Byangsi	2103	0.01	98.18	1094	1009
92	Hayu	1821	0.01	98.19	892	929
93	Koche	1429	0.01	98.19	693	736
94	Dhunia	1231	0.01	98.20	614	617
95	Walung	1148	0.01	98.20	574	574
96	Jaine	1015	0.00	98.21	551	464
97	Munda	660	0.00	98.21	357	303
98	Raute	658	0.00	98.21	346	312
99	Yehlmo	579	0.00	98.22	281	298
100	Patharkata/Kuswadiya	552	0.00	98.22	286	266
101	Kusunda	164	0.00	98.22	85	79
102	Dalit/Unidentified Dalit	173401	0.76	98.98	85063	88338
103	Unidentified Caste/Ethnic	231641	0.02	100.00	116569	115072

IUCN - The World Conservation Union was founded in 1948. It brings together states, government agencies, and a diverse range of non-governmental organizations in a unique world partnership: over 1078 members in all, spread across some 181 countries. The World Conservation Union builds on strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

As a Union, IUCN seeks to influence, encourage, and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

IUCN - The World Conservation Union officially launched the Nepal Country Office on 23 February 1995 with the Ministry of Finance, His Majesty's Government as the government partner. IUCN Nepal has been developing partnerships with various government line agencies as well as non-governmental organizations to carry forward its activities to conserve Nepal's natural resources and ecological processes.

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