PART I: CONCEPTS AND THEORY

Chapter 1

INDIGENOUS KNOWLEDGE SYSTEMS: AN INTRODUCTION AND REVIEW

This chapter introduces and reviews the literature on traditional knowledge with a particular emphasis on understanding its importance for sustainable development. The review is comprehensive in perspective and establishes the conceptual framework for subsequent discussions. Throughout, the chapter draws from research experience by the authors in the Thevaram Basin and Kollihills regions of Tamil Nadu, India.

Introduction

Indigenous knowledge (IK) is a dynamic concept having several distinguishing features. First, it can be regarded as a concrete expression of world-views which do not consider humans as separate from environment. Rather, indigenous knowledge emphasises the unity and symbiosis of humans and nature. Second, it embodies a day-to-day enterprise that is checked, validated, and revised daily and seasonally, through an annual cycle of activities (Reference!!!!). In this way, IK represents a specific example of the application of adaptive management techniques at the local level that has been in existence for centuries.

Richard Hartshorne (1959:46) stated that the relevance of knowledge of the world, "… *is measured in terms of significance to (hu)man(s)"*. We believe that the significance of traditional ecological knowledge to humankind today is also measured in terms of its significance to humans. Another famous geographer, Derwent Whittlesey (1945:14), suggested even earlier that, "…*today, most of us share the conception of a world common to all experients*". Indigenous knowledge, or for that matter, its variant Traditional Ecological Knowledge (TEK),

> *a body of knowledge built up by a group of people through generations of living in close contact with nature; which includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use* (Reference!!!!),

is in fact shared (because it has been handed down through generations), although not practised (because we have taken a view of it as being insignificant in the light of the western science we have come to use), by all of us that we should now look at it with a new 'curiosity' and capture it for whatever it is worth in resolving our present day problems.

Knowledge is a process. It is a useful process. Indigenous knowledge cannot be understood independently from the ways in which it changes. It evolves through a process of experimentation, carried out by indigenous, traditional people, involving a diverse set of variables and objectives. This leads to innovations and adaptations. Observation is an important part of the process (Shah, 1993: 38).

Indigenous knowledge (Box 1) is not generated or acquired equally throughout a community; nor is the existing knowledge about products and processes equally distributed in a society. Differences in knowledge exist in and among individuals, in terms of their ability, opportunity or wish to observe and experiment, according to gender, age, social status or personal ability.

Indigenous Knowledge: Definitions and Meanings

Box 1: Indigenous Knowledge: Definition

Indigenous Knowledge can be defined as

- *o* 'the knowledge developed by a given culture to classify the objects, activities, and events of its universe'.
- o Indigenous Knowledge System (IKS) is a cumulative body of knowledge and beliefs, handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.
- o Further, IKS is an attribute of societies with historical continuity in resource use practices; by and large, these are non-industrial or less technologically advanced societies, many of them indigenous or tribal.

Indigenous knowledge and technology are quite often supplanted by modern knowledge. There are of course cases where traditional knowledge and technology were manifestly superior to those that replaced them. Their loss may lead to a major reduction of scientific and technical potential.

Traditional knowledge and technology have a tremendous wealth of wisdom, which in no way means that modern science and technologies are unimportant or not required. We, as a society today, cannot live without them. They have a crucial role, for example, in ensuring increased productivity of our natural resources on a sustainable basis. On the other hand, modern science and technology must attempt to understand the social and ecological foundations of traditional knowledge systems: they must help enhance productivity by building indigenous knowledge systems, rather than destroying and displacing traditional systems.

In traditional cultures, life was, and is, organised around a highly refined awareness of the environment. Indigenous Knowledge System (IKS), which also goes by other names such as Local Knowledge Systems (LKS), Traditional Ecological Knowledge (TEK) and Indigenous Technical Knowledge (ITK), represent experience acquired over several millennia of direct human contact with the environment. Although the term IKS came into wider use only in the 1980s, its practice is as old as ancient hunter-gatherer cultures.

Box 2: Key words and their meanings

Indigenous Something which is indigenous is originally from the country in which it is found, rather than coming or being brought there from some other country.

Traditional

1. Traditional is something - like dress and customs - that has existed in a place without changing for a long time.

2. Traditional are the beliefs and attitudes that have existed in a place for a long time and are not exposed to change.

3. Traditional is an organisation or institution in which older methods are used in preference to modern ones.

Knowledge Knowledge is information and understanding about a subject, which a person has in his or her mind or which is shared by all human beings

System

1. A system is a way or working, organising, or doing something in which you follow a fixed plan or set of rules.
2. A system is also the way that a whole institution or aspect of society has been organised and arranged.
3. If a situation or activity has some system, it has a sense of orderliness or good organisation.
4. The system of something is the way in which it is arranged so that all its parts fit together or work together.

Source: ***Collins Cobuild English Language Dictionary***, 1988, London and Glasgow: Collins, pages in order: 741, 1551, 803, and 1484-1485.

There has been a growing recognition of the value of IKS in several areas, most importantly in matters relating to environment building, improving bio-diversity and sustainable development. It has also been recognised that IKS represents an intellectual process of creating order out of disorder, of practising art and science. Humans practice art and science in every known society.

The study of IKS, also TEK and ITK, is valued in a number of fields. In agriculture, pharmacology and botany (ethnobotany), research into IKS has a rich history. In comparison to these fields, the study of IKS in ecology is relatively recent. Inasmuch as geography is human ecology, and geographers wield a '*human ecological tool*' in their research, IKS is a veritable system of knowledge with applications of immense value. It is of great value to sociology, anthropology and all disciplines, which yield 'values' by taking on either an ethnoecological or an ethnoscience (folk science) approach.

Exemplar 1

Illiteracy is not lack of knowledge. Korah Mathen (1997: 175) tells about a ten-year old tribal boy who could identify 275 varieties of vegetation in and around his village, including 14 different types of grass. He is illiterate; but his knowledge about the plants, their characteristics, and their uses is more than worthy of a doctorate in agriculture. His is not of course a solitary example. There are several hundreds, may be thousands among the indigenous, local and traditional peoples who are equally knowledgeable.

Source, Generation and Use

Knowledge is the foundation of social life. Little however is known of the transmission of IKS to children and young people, in the towns and cities of the country today. In rural areas, traditional knowledge is a central concern for the regulation and balance of exploitative pressures that permit an ecosystem to maintain stability and regenerative capacity. As we know, skills are transmitted and acquired in a disorganised, unstructured and highly individualistic manner. This causes concern to all of us.

Box 3: Knowledge: Source, Generation and Use

Source	Generation	Use
Local	Locally generated	Locally used
	Externally generated	Locally used
External	Locally generated	Externally used
	Externally generated	Externally used

Even more important however is that the preservation of IKS is important for social and cultural reasons. IKS is a tangible aspect of a way of life that is valuable, quite apart from the ethical imperative of preserving cultural diversity. Assessing and using IKS therefore becomes necessary for reasons below. IKS can be assessed for:

- new biological and ecological insights;
- use in resources management;
- protected areas and for conservation education;
- development planning; and
- environmental assessment.

All of these form the fundamentals of resources and environmental management. The quantity and quality of indigenous knowledge varies among community members, depending upon gender, age, social status, intellectual capability and occupation. Indigenous ecological knowledge takes the following forms:

- **Knowledge of Biotic Materials:** an intimate and detailed knowledge of the environment, including plants, animals and natural phenomena.

- **Technical Knowledge**: development and use of appropriate technologies for primary resource utilisation, uses of biotic materials, and humane environmental conservation practices.

- **Cultural Knowledge**: cultural practices and beliefs, a holistic worldview that parallels the scientific discipline of ecology.

As of now, in India, the western science provides biological and ecological insights, the knowledge base for resources management, conservation, development planning and environmental assessment. We have been more than just dissatisfied with it. At this stage, the development of IKS and the knowledge held by them do have something to contribute to each of the above areas.

Box 4: Characteristics of Indigenous and Non-Indigenous Institutions

Origin		
	Indigenous	Established through endogenous forces, consistent with local culture and origins.
	Non-indigenous	Established through forces external to local culture and origins.
Nature of Operation		
	Indigenous	Commonly live or maintain strong ties to a subsistence economy.
	Non-indigenous	Reflect development strategies of the West.
Level of Operation		
	Indigenous	Operate at local or community level and often reflect knowledge and experience of a particular people.
	Non-indigenous	Fairly standard at national anntional levels.

Source: After Uphoff, 1986.

Traditional Ecological Knowledge (TEK) in Perspective

There is no need to differentiate indigenous knowledge system (IKS) and traditional ecological knowledge (TEK). Traditional peoples such as those in the Philippines possessed exceptionally detailed knowledge of local plants and animals, and their natural history, just as those in India, recognising, as we have shown in Exemplar 1, several hundreds of plant species (Conklin, 1957; Mathen, 1997). Arctic ecologist Pruitt (1978) has been using Inuit (Eskimo) terminology for types of snow for decades, driving home the fact that some kinds of indigenous ecological knowledge have been acknowledged by scientific efforts. Pruitt (1978: 6) writes:

> '...our writings and speeches are larded with Inuit, Athapaskan, Lappish and Tungus words, not in any attempt to be erudite but to aid in the precision in our speech and thoughts' .

Scientists have generally recognised the capabilities of ancient agriculturalists, water engineers and architects (Fathy, 1986). They have known and accepted the vitality of the many indigenous groups in diverse geographical areas from the Arctic to the Amazon (Posey, 1985, for example) and their systems of managing resources. Through their writings, it is shown that the TEK could be used to contemporary resource management problems (Cox, 1987; Feit, 1987; Freeman, 1989; Freeman and Carbyn, 1988; Freeman, Matsuda and Ruddle, 1991; Gadgil and Berkes, 1991; Mitchell, 1997 for example). The World Commission on Environment and Development has also recognised the feasibility of applying TEK to contemporary resource management problems, in various parts of the world, thus:

> Tribal and indigenous peoples'....lifestyles can offer modern societies many lessons in the management of resources in complex forest, mountain and dryland ecosystem (WCED, 1987: 12).

> The communities are the repositories of vast accumulations of traditional knowledge and experience that link humanity with its ancient origins. Their disappearance is a loss for the larger society which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems (WCED, 1987: 114-115).

Box 5: Indigenous Knowledge and Western Science

Intellectual Hegemony	Ind	Holistic	West Dominant
Mode of Data Creation	Ind	Holistic	Subjective Experiential Oral Tradition
	West	Reductionism	Objectivism Positivism Academic
Explanation	Ind	Spiritualism	Beliefs and Values Inexplicables Isolated instances of crude experiments
	West	Scientific inquiry	Natural laws Hypothesis Laboratory experiments
Ecological Classifications	Ind	Specific	geographical and cultural context
	West	Transcend	local, regional, and national boudaries; aims at universality
Recognition of Source of New Knowledge	Ind	Notion of recognition is generally absent	
	West	Copyrights, patent rights, authorship.	

Fields such as fisheries, wildlife and forestry have however been slow in taking the advantage and challenge of TEK (Freeman, 1989). But with the recognition of the value of TEK, the growth in these fields has been rapid. However, most of the contributions in this regard have come from inter-disciplinary researchers and scholars than those from ecology or resource management. In-depth work has covered various fields of value in environment, resources and sustainable development:

Transmission of TEK (Ruddle and Chesterfield, 1977)
Community based TEK research approaches (Johnson, 1992)
Application of TEK to development (Brokensha et al, 1980)
Resource management (Klee, 1980)
Biological/Ecological evaluation of fisheries TEK systems (Johannes, 1981)
Traditional conservation (Moruata et al, 1982; McNeely and Pitt, 1985)
Dry land ecosystems (Niamir, 1990)
Tropical forest systems (Posey and Balee, 1989)
Environmental philosophy and indigenous knowledge (Knutdson and Suzuki, 1992)
Traditional coastal resource management systems (Lasserre and Ruddle, 1983)
Traditional marine resource management systems (Ruddle and Johannes, 1989; Freeman et al, 1991)

IKS or TEK differs in a number of substantive ways from scientific ecological knowledge, however:

TEK is **qualitative**, as opposed to quantitative.

TEK has an **intuitive** component, as opposed to being purely rational.

TEK is **holistic**, as opposed to reductionist.

TEK considers **mind and matter together**, as opposed to a separation of mind and matter.

TEK is **moral**, as opposed to supposedly value free.

TEK is **spiritual**, as opposed to mechanistic.

TEK is based on **empirical observations and accumulation of facts by trial and error**, as opposed to experimentation and systematic, deliberate accumulation of fact.

TEK is based on **data generated by resource users themselves**, as opposed to that by a specialised cadre of researchers.

TEK is based on diachronic, that is, **long time-series on information on one locality**, as opposed to synchronic data, that is, short time-series over a larger area.

TEK, in contrast to scientific ecology, does not control nature and is not primarily concerned with principles of general interest and application; that is, it is not interested in

making theories. It is limited in its capacity to verify predictions. It is, above all, markedly slower in speed at which knowledge is accumulated than scientific ecology.

TEK has a large **social context**. It is not merely a system of knowledge and practice; it is an **integrated system of knowledge**, **practice and beliefs**. The social context of TEK includes the following:

- Symbolic meaning through oral history, place names and spiritual relationships (Levi-Strauss, 1962; Tanner, 1979);

- A distinct cosmology or world view; a conceptualisation of the environment that is different from that of the western science (Tanner, 1979; Freeman and Carbyn, 1988; Johannes, 1989); and

- Relations based on reciprocity and obligations towards both community members and other beings (Fienup-Riordan, 1990) and communal resource management institutions based on shared knowledge and meaning (Berkes, 1989).

Transmission of TEK

Knowledge is the foundation of social life. It is important, knowledge is transmitted between or among generations. Transmission of knowledge has a fundamental socio-cultural importance. In India, for example, children and young people participate actively in economic activities; but little is known of their contribution to community life. Although we hear about the socialisation of the young and the children, little is known about the transmission of knowledge to them, especially in the present.

We have in fact little to say about how traditional knowledge of specific skills is transmitted. The impression is that skills are transmitted and acquired, but in highly disorganised, unstructured and individualistic manner. Most children learn by seeing the elders do something 'worthwhile'. Elders of today rarely speak to the young, and if they do, it is often 'to scold them for something or some mistakes they have committed'; rarely for passing the knowledge.

The children are however observant and they learn by 'seeing' and 'doing', with or without guidance. When the young happen to have '*toting*' grandparents or even some elders who are considerate to them, there is some solid knowledge transmitted, primarily through '*story telling*' and lovingly guiding them in their day-to-day activities. Otherwise, what they learn from schools is generally 'bookish' or 'academic', as opposed to practical, and in urban settings, what is mindlessly '*mugged up or memorised*' from the books. Such information, stored in the head, never really comes to the children's rescue, in their daily social life.

Generational transmission of information today tends to deal with questions of how children are incorporated into their groups in only very broad analytical terms of cultural and social systems. This kind of analysis is informative about the totality of what children learn than about how they acquire TEK of specific tasks and skills.

Transmission of traditional knowledge, and the knowledge itself, shapes society and culture: culture and society shape knowledge. These are reciprocal phenomena. Thus, different constructions of knowledge, its transmission as well as the social uses to which knowledge is put, occur worldwide.

This transmission ensures sustained resource management, apart from its socio-cultural importance to any society. In the course of knowledge transmission over generations, social institutions gradually crystallise; and routine or habitual ways of doing things become the customary ways that things are done. For children, the community's customary ways become the 'given-received social world', which overlaps the biological-physical world.

Box 6: Transmission of Traditional Knowledge

There are however remarkably consistent generalisations about certain structural and processual characteristics of the transmission of traditional knowledge. These may be encapsuled as follows (Ruddle and Chesterfield, 1977):

- There exist specific age divisions, for task training, in economic activities.
- Different tasks are taught by adults in a similar and systematic manner.
- Within a particular task complex, individual tasks are taught in a sequence ranging from simple to complex.
- Tasks are gender and age specific, and are taught by members of the appropriate sex (weeding, cleaning vessels and washing clothes).
- Tasks are site-specific, and are taught in the types of locations where they are to be performed (lift irrigation, for example).
- Fixed periods are generally set aside for teaching (?).
- Tasks are taught by particular kinsfolk, usually one of the learners' parents (good examples are local martial arts, games, music and singing).
- A form of reward or punishment is associated with certain tasks or task complexes.

While transmitting knowledge to a new generation, the transmitter's sense of reality is strengthened. The social world, embodied in traditional knowledge, becomes enlarged. Knowledge assumes a pivotal role in any community: integration of an institutional order is understandable only in terms of the knowledge that its members share.

There is something like '**primary knowledge**'; this primary knowledge is pre-theoretical knowledge:

> 'the sum total of what everybody knows about his/her social world (Berger and Luckmann, 1984: 83).

At these levels, according to Schutz (1960), every institution has a body of transmitted '**recipe knowledge**' that provides for the institutionally appropriate rules of conduct. Such knowledge (a) underlies the dynamics of institutionalised conduct, (b) defines the areas of such conduct, and (c) defines and constructs the roles to be played in the context of institutions.

A society's knowledge, when put into operation or reflected upon, becomes the local world: it becomes co-extensive with the knowable, and provides the framework through which that which is

not yet known will come to be known in the future (Berger and Luckmann, 1984: 83).

Knowledge in this sense is the key dialectic (the philosophical system asserting truth by resolving the differences that exist between factors in a particular situation) of society, since knowledge about society both **captures everyday social reality** and continuously **reproduces** it. A body of knowledge thus develops over generations and refers to the various activities involved in a given resource system.

It takes on a linguistic form.

This body of knowledge is transmitted to the next generation as an objective truth during socialisation, and is then internalised as 'subjective reality'. This transmission yields an **identity to a person**, whose principal social universe is constituted by that body of knowledge: say, a fisherman, a washerman and a carpenter.

In the context of transmission of traditional knowledge, only a fraction of an individual's experience is consciously retained and thus makes sense. What is retained and shared by people pursuing a common activity, such as fishing, washing and carpentry, becomes codified, usually in some specific linguistic terms, and it can then be transmitted as coherently as possible to the next generation, to be used, added to and enriched by its own experiences.

Box 7: A Body of Knowledge in Fishing

To take an example, what happens in fishing?

1. Words or terms define species, habitats, weather patterns, sea conditions, seasons, fish behaviour and so on.
2. A collection of 'recipes' is learned in order to fish both correctly and with consistent success.
3. Knowledge is a channelling and controlling force that underlies fishing institutions.
4. In the persistence and crystallisation of fishing institutions, knowledge becomes the objective description of the activity/institution.
5. An objective arena/field/ethnoscience of fishing develops in parallel with the activity of fishing.

While being transmitted, emphasis is on:

- Learning by doing through repeated practice over time rather than by simple observation and replication.

- The first step of the traditional knowledge teacher is to familiarise the learner verbally and visually with the physical elements of the appropriate location.

- The entire complex is transmitted **over a period of time.**

- Transmission of traditional knowledge proceeds additively and sequentially from simple to complicated steps.

- The complex is divided into individual procedures that repeat those already mastered.

- An entire task complex is thus learned, with only verbal correction needed, occasionally.

- When competent, the learner helps the teacher, and experiments and uses his/her own initiative. At some point in time, the role of the teacher is eliminated.

Often the traditional system of knowledge transmitted is a highly structured and systematic procedure as shown above, with either individual or small group instruction. In most cases, there is no time and moment for teaching: every waking hour is fit for instruction, if learners are adequately motivated. Most important, there is no hurry in either teaching or learning, for whatever traditional knowledge is transmitted must be transmitted properly.

There are striking contrasts to the traditional education system described in Box 8. In some countries, the corpus of traditional knowledge is transmitted informally (Borofsky, 1987; Howard, 1973), while in others both formal and informal patterns occur. In Polynesia, the transmission occurs within the all-pervasive context of status rivalry (Goldman, 1970; Ritchie and Ritchie, 1979; Borofsky, 1987), which is competition over status issues. On Pukupuka, the status issues relevant to the transmission of traditional knowledge are:

1. Social hierarchy, dependency, and deference to superiors; and

2. Autonomy and peer equality (Borofsky, 1987).

On Pukupuka, most knowledge is transmitted in the context of an activity, which is relevant to performing daily tasks. Here, verbal instruction is rare. Both children and adult learn by observation and later by imitation. In Tubuai, another Polynesian island, formal instruction is minimal (Inglis, 1992; Berkes, 1992; Ruddle, 1992). So is it in India.

Observation is of paramount importance, for 'knowledge is something grasped visually' (Borofsky, 1987: 81-82). Listening to the conversation of others is a second important means of acquiring knowledge. Repetition of observation, listening and practice are

the principal factors in the transmission of knowledge. Challenge, indirect criticism, joking and teasing among adults are all used as educational tools. The resulting pressure and competition are a stimulus to learning. So, for the young, learning is a humiliating and painful experience, in these societies.

The Framework for Transmission

Box 8: A Framework for Transmission of Traditional Knowledge

1. **Age**

Learning of tasks is age-specific. Learning to recognise names and characteristics of more common items of biota is the earliest ecological knowledge transmitted. 2-5 years: child is mobile and learns to speak and is familiar with foodstuff, mother and father; older child is mobile and verbal enough to be taught tasks; at 7, the child is ready for formalised instruction; and eight year olds can use implements and techniques with their physical strength and skill. More demanding task complexes can be mastered later, when the child is 11 to 14 years of age.

2. **Gender**

Labour is divided according to gender and age. In India, girls are instructed in household and preparatory tasks much ahead of boys. Boys are instructed in 'outdoor' activity complexes while girls are taught 'indoor' tasks. In rural areas, instruction in one's traditional occupation begins very early: 8-year olds begin intensive training in cultivation and complementary activities, while girls of same age continue to perfect their skills in household maintenance. Girls also receive instruction in those aspects of cultivation for which women are responsible.

Girls learn to sow and plant, along with boys, to select seeds and to care for the cattle much earlier than boys, who spend their time in learning animal and plant identification, harvesting for the pot, and the care of animals.

3. **Sequencing**

Task complexes are taught sequentially. Simpler and more familiar parts of a task are taught first. As strength and skill increase, training provides for more complex task learning. Task complexes and individual tasks are taught sequentially, building on skills already developed, until an entire complex of task has been mastered.

4. **Location**

Learning traditional knowledge is location-specific. In rural areas, sites for learning and practising learned skills are the cultivated fields. Just as cultivation tasks are taught almost entirely within the locale of a cultivated field, so are the household chores in the houses of the learners. All animal husbandry instruction takes place in pastures and grasslands.

5. **Duration**

Learning to manipulate local ecosystems is a life-long undertaking; formal and structured training lasts however for a few years only. Duration of learning task complexes depends on the complexity of what is being taught/learned and the frequency with which training is undertaken.

6. **Reinforcement**

In early childhood, children are punished for breaking rules of conduct and codes; they are never punished for deficiency in skills. Children who fail in their tasks are chastised when they fail in a task by being made ashamed of their failure. This way the children's reciprocal responsibilities are emphasised. There are also rewards, such as occasional sweets, delicacies and even a 'movie'. Children of both sexes are rewarded for their performances in learning task complexes. The principal reward however is in the proficient performance itself. Children are often recognised in a community as persons 'who know' and are thus respected for what they know and can do.

7. Training as Family Undertaking

Traditional knowledge transmission is a family undertaking. Men are principal teachers of subsistence activities and women are the principal teachers of household chores. Children learn of the division of labour early in their lives, but are taught to substitute: boys for girls and girls for boys. Strict division emerges much later, when the learners become adults and make their own hard decisions. Father, grandfather and even older brothers are the teachers for boys, while mother, grandmother and older sisters are the teachers for girls. The teachers sometimes interchange and teach the wards. Rarely, men and women teach boys and girls, together in a group. Such occasions are not uncommon either, in certain milieus.

Transmission of traditional knowledge among generations in any society is a complex and fundamental process embedded within the deep socio-cultural structure. Formal and informal distinction has little relevance. Concern is with the holistic study of a society. The curriculum and process of knowledge transmission is culture itself.

Understanding the TEK

In our view, the wider universe of discourse centres on knowledge and ideas about man and milieu. Any one who inspects TEK would know it so, immediately. Although the western science has generally expanded our horizon rapidly, TEK by being revived today is doing so more so than the western science. The western science itself is waking up to the view that there is something in TEK which is more profound than in most western science and that it (TEK) should be used in a way beneficial to humankind. This being so, there is need to look at the question: how to capture TEK, so that we could understand it, and use it in the solution of our current problems. We are moulded to think in this fashion because we believe all science and all knowledge is capable of resolving problems. We have problems to solve and TEK just as well might be used to resolve them.

An improved understanding can also be gained of the practices and conditions only by analysing the breakdown and reestablishment of TEK management systems.

TEK: Potential for Sustainable Development

Indian society is a fascinating blend of different traditions and cultures. Many of these cultures have traditionally developed strategies for conserving and managing nature and natural resources. These traditional strategies are congruent to the traditional lifestyle of the respective societies. Local people in several parts of the country even now practice traditional conservation practices. There is this practice of totemism, in which one or more species of plants and animals are protected (as spiritual ancestors, conserving certain species for rituals, and keeping aside patches of forests and waterbodies in the name of local deities). For example, there is a stretch of shelter belt erected during 1968-88 in the Thevaram basin, which even now stands undisturbed because of a local belief, in Thimminaickenpatti of Pottipuram panchayat, that some misfortune hits the family that cuts trees in the shelter belt. There is also this belief that the local deity lives in the stretch of that shelter belt[1] (Gokhale, 2001: 15; Kumaran, Hyma, and Wood, 2001).

The sacred conservation practices adopted by local people have come into focus because of their importance for protecting several delicate ecosystems and threatened species. They do show a concern of the tribal people towards sustainable development. They also show the explicit connections between cultural and biological diversity. They further show that they have their potential of people oriented conservation efforts. The most well known and significant of these practices has been that of the sacred groves, which are patches of natural or near natural vegetation.

Of the many initiatives taken to conserve what remains of bio-diversity in the country, the ones that merit mention are the continuation of traditional conservation practices among many village communities. While in themselves commendable, they are woefully inadequate in halting the decline of bio-diversity, as in for example Thevaram basin of Theni district. A much greater national effort is needed to resolve the need to conserve the natural habitats and bio-diversity that coexist with us. The National Biodiversity Strategy and Action Plan (NBSAP) formulated by the Ministry of Environment and Forests with executions by the NGOs, official agencies, and community groups (Chellam, 2001: 13).

Notes and References

1. Today, this stretch of about half a km stands as a mute testimony to what has happened in a short period of four months in the year 1988: 39 other shelter belts were cut down to quench the greed of some officials who, in connivance with others in the villages here, destroyed the well-constructed shelter belts, intended for reducing desertification and creating bio-diversity.

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