UNIT 4 CULTURAL DIMENSION OF CONSERVATION: INNOVATION, IKS, IPR AND VALUE ADDITION

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4.0 INTRODUCTION

In the earlier unit we have discussed how the State is largely ineffective in implementing successful programs of biodiversity conservation and sustainable ecological projects. The reason lies in the ignorance of people who do not have intimate knowledge of the environment as compared to the people who have spent generations living with environment. Earlier when western science was considered as the only form of knowledge; such indigenous forms of knowledge were relegated to the status of superstition and ignorance. Industrial technology was given pride of place in the process of development and development itself was directed towards replacing or modifying nature to suit industrial and urban growth. However towards the end of the twentieth century, it was becoming apparent that western scientific technology did not have all the answers. A case in point is the inability of British Petroleum to plug the hole in their undersea oilfield that has caused immense ecological damage in the Gulf coast of the USA, even after struggling for three months to do so. Similar ecological disasters including the hole in the ozone layer has led to rethinking about the wisdom vested in non-western people and those without so called 'scientific' knowledge.

Other factors that have led to such reconsiderations have been the loss of political domination of the Euro-American countries to some extent with the rise of China, Japan, Korea and India. Another has been the philosophical revolution of the twentieth century in the form of deconstructionist and post-modern theories that have challenged the very notions of truth and knowledge as propagated by the western age of reason. These in turn have been supported by the transformation in science itself with quantum theory and relativity replacing positivist notions. Let us now examine some definitions of what we understand by Indigenous knowledge and its types.

4.1 OBJECTIVES

After reading this unit you will be able to:

- compare indigenous knowledge and scientific knowledge giving the pros and cons of each type;
- describe the cross cultural perspective of the application of indigenous knowledge; and
- recognize the viability and sustainability as well as capacity for transformation of the local knowledge systems.

4.2 WHAT IS INDIGENOUS KNOWLEDGE?

The term indigenous knowledge is tied to the term indigenous, the meaning of which is not a straight forward answer. In the last few decades, this term has assumed considerable political significance especially as it is linked to various people's movements across the globe. It largely refers to those populations that were early settlers in any place, thus distinguishing them from the Euro-American white populations that colonized many countries. Conceptually it raises images of black people conquered by white, a semantic opposition of conquered and conqueror and from the point of view of the west, it is we Vs. them. It is these kinds of reckonings that led the Indian government to assert that in India there are no indigenous people as all are early settlers and there are no ethnic or conqueror/conquered relationship between the people of India. However the tribal people of India have contested this view asserting that they merit being considered as indigenous as their position in the political and social hierarchy is the same as say Australian Aborigines in Australia or Native Americans in USA. According to B.K. Roy-Burman, an expert on tribal people, the term indigenous now carries notions of dispossession and being dominated and thus the tribes of India also can be called indigenous because of the intellectual, social and economic marginalization they are suffering.

Various scholars have used terms like local knowledge, autochthonous knowledge etc to designate what does not fall within the range of formal, scientific knowledge. Antweiler(2004: 3-5) has summarized some of these terms with respect to the semantic stress or the meaning that they convey. We shall examine only a few of them here.

Indigenous knowledge: "Culturally specific self-contained knowledge, knowledge defined in relation to western (scientific) knowledge; contrast implies many dichotomies (e.g. us /them, west/rest, rationality/magic, universal /particular, tradition/modernity)".

Local Knowledge, Art of locality: "Knowledge and skills related to a specific place, immediate surroundings; implies limited wider relevance"

Autochthonous knowledge: "Of Internal Origin, Culturally integrated"

Sustainable Knowledge: "Environmental Wisdom that provides sustainable solutions"

Community Knowledge: "Shared knowledge in self contained social units"

People's Knowledge and People's Science: "Shared, broadly disseminated knowledge, potential for political resistance (vs. dominating state knowledge)".

There was some reservation about the applications of these forms of knowledge that partly stems from the power hierarchy. As by definition these forms of knowledge are opposed to the state sponsored knowledge, the people in power would be reluctant to acknowledge that their knowledge was not sufficient or efficient as we have seen in the case of scientific forestry.

The second dimension of skepticism was that these knowledge systems were often folk traditions transmitted orally or in the form of learning by experience. The knowledge was quite often, though not always, not capable of being codified and formally transmitted. However, it is now believed that knowledge need not necessarily be codified and ecological knowledge especially is more relevant situationally and contextually. Like the knowledge used for farming shrimps in swamps cannot be sued for catching fish in the high seas. At times such knowledge is implemented through traditional social organizations like the Subak of Indonesia discussed in an earlier chapter that cannot be duplicated elsewhere at least in that form. However it is now contended that at least the basic principles can sometimes be understood and applied in similar situations.

Local knowledge is understood thus as situated knowledge and it may not present itself as a systemic body of knowledge. And although some environmentalists or social workers may project local knowledge an antithesis of industrial knowledge and always seen as good for the environment and just and equitable; it may depend on the situation and the kind of society that we are talking about. If the society under consideration is both just and egalitarian then the knowledge system will be implemented so as to maintain that. However if the society is itself hierarchical, like the caste system or slavery or is changing under impact of other modes of subsistence, then the knowledge need not always support environmental equity or quality. See for example Kelly Alley's (2002) work on pollution of the Ganga caused by traditional modes of using the river in an industrial and transformed circumstance. The rituals that sanctify the river have become commercialized under the new regime and the sacred specialists continue to propagate values (the river is sacred) that are no longer commensurate with reality (the river is polluted). Hess (1997) in her study of sheep management among an Andean community; came to the conclusion that local and knowledge and practice has resulted in sick and unproductive sheep.

Local knowledge can be defined in terms of being "cognitive" that is based on a shared perception of the environment and includes "emotive and corporeal aspects" (Atelier 2004:10). In other words it is based not on an outside or specialist perception (like a scientist) but of the entire community and is integrated with the emotional and organizational aspects of the community. "It is culturally situated and best understood as a 'social product'. It encompasses knowledge in the strict sense of shared information ——" (ibid). Such knowledge as is acquired through one's culture and is a part of inherited legacy is often associated with one's ancestors, one's territory and gives pride in one's identity and self worth. As Siverts (1991:308) puts it, it is a "combination of utilitarian and symbolic practices" For example while the sacred groves are preserved not only because they are the abode of sprits but also because of their ecological significance.

4.3 IS LOCAL OR INDIGENOUS KNOWLEDGE A SCIENCE?

Indigenous knowledge or local knowledge has often been contrasted with science in saying that unlike scientific knowledge that is ever expanding, IK is static. It is also said that it is not structured and has a disuse and fuzzy character. However as Sillitoe (2000:2) explains it, IK has a structure and has a concrete reality as one component of it, while at the same time there is a way of knowing that is through action, or practice. Thus while a fishing community has structured knowledge about making boats, nets, fish life cycles and weather conditions; the exact way in which a fisherman has to deal with the sea may be a situated knowledge based on experience that may not be understood except by the engagement with the environment.

As Knudsen(2009: 80) puts it IK or TEK (Traditional Ecological Knowledge), has one main defining character that it is dissimilar to science; where scientific knowledge is characterized by such terms as generalized, universal, formal and systematic. However the study of Science and Technology (STS) and Sociology of Scientific Knowledge (SSK) are also fields that are being pursued in the last few decades. Increasingly through the works of scholars such as Fleck (1979) it has been shown that all knowledge is sociologically constructed and each body of knowledge including western scientific knowledge is not completely value free and neutral (as it is supposed to be) but a historical and cultural tradition like all other forms of knowledge. This mode of thinking that shows up western scientific knowledge as culturally biased and following social hierarchies has been taken up by feminists scholars like Susan Harding and Donna Harraway. Increasingly the study of western science is moving in a direction that is making it converge with IK, in a way that most scholars are tending to believe that all forms of knowledge is socially constructed and serves social goals.

On the other hand the concept of “ethnoscience” was coined by anthropologists, who tried to show the efficacy of tribal forms of knowledge and the rational basis of that kind of knowledge.

Thus rather than the debate being situated in whether IK is a science or not, in recent times the enquiry has shifted to whether there is anything called a perfect science in the sense of the term used in nineteenth century Europe. The work of Levi-Strauss that focused upon universal categories of the human mind, drawing upon linguistics showed that everywhere people use symbolic categories to understand and decode the environment they are in. It was thus deemed necessary to understand these situated categories of classification in order to implement any policy or development project. However other scholars such as (Palsson 1998) and Latour (1993) have criticized this way of dichotomizing human societies into ‘us’ and ‘them’ pointing out that such divisions increase distance.

One way in which to get over this dichotomy is as suggested to view science itself as being experiential and intuitive as it has been pointed out the greatest discoveries of science have been based more on intuition rather than experimental knowledge, the classic case of the apple falling. Chris Shore(1996) has distinguished between two ways of knowing the world, ‘analytical’ based upon digital codes , that is understanding in terms of opposites and ‘non-analytical’

based upon analog codes, that is in terms of associations. However it is the work of Latour that gives us more insight into how objects and facts are constructed by human beings, in the process of understanding them and how this knowledge then becomes embedded in larger structures that is in society or community as a whole. Latour uses the word collective to refer to the associations of humans and non-humans (an ecosystem of society) or 'actants' and these are represented by spokespersons, that is representatives of the knowledge held by that collective. Knowledge constructs and stabilizes new collectives by bringing in as many 'actants' as possible.; the more the 'actants' brought in the more the facts are hardened or posited as true knowledge.

The difference between local knowledge and science lies in the size of the collective or the number of 'actants' that are brought into the network of that particular knowledge collective. The more people believe that something is a fact or knowledge the more powerful it becomes. Thus knowledge enables us to get familiar with things at a distance and this is what is taught in class rooms. The students learn about things they have no bodily knowledge of yet 'know' through the "mobilization, stabilization and combination of inscriptions" (Knudsen2009: 84). Thus in techno-science the range of inscription is very large and everything can be moved to and fro by the process of inscription. The process of inscription entails the externalization of something into a form that is transportable and becomes more interpersonal than being embedded in personal experience. The ability to tell and write about something is to be able to inscribe it and then transmit it to others even at a longer distance. Thus oral traditions as a form of inscription cannot travel very far but written knowledge can and digitalized inscriptions can travel even faster and reach out to many more people. Thus the differences between knowledge is not in their efficiency or applicability or 'truth' but in their range of externalization, their capacity to travel and to be objectified, that is put in a form that is accessible to others. Thus experiential knowledge, common sense knowledge are intangible , cannot be objectified and hence have been kept out of the scope of 'scientific' knowledge but as we have already seen intuition still plays an important role in science and thus cannot be objectified.

Let us now illustrate our discussion with some case studies of IK and TEK.

4.3.1 Fishing and IEK

When action is carried out in a group that habitually stays together, like in hunting or fishing the knowledge is shared by common experience rather than by inscription. The Black sea traditional fishermen, described by Knudsen, go out in groups in small boats, have knowledge of the ocean bottom based on experience that is not available by any charts. Even sonar display is not of any use unless interpreted by an experienced sea-man. The captains of large ships often take with them a traditional fisher to interpret the sonar signals even though their contributions are not officially recognized. The small boat fishers have knowledge of what are called adas that are perceived as flat fishing banks that is where a particular species of fish may be concentrated. The local fishermen know by experience that whiting and turbot are more frequently to be found on adas than anywhere else. Only local fishers, who may be referred to as a 'community of practitioners' fish in adas have this knowledge. And even though it is not inscribed the fishers share a routine that is set by practice that is not verbalized or written

yet mutually understood. For example Knudsen could not make the fishers explain by a diagram what an ada was. They said it was an area of shallow water, separated from the shores by deep waters, but could not represent it diagrammatically, yet knew all its properties, how it was formed, etc. The fishers could use hand symbolism and couple it with standardized knowledge of fish behavior and change of seasons. The symbols here are plastic and based upon the imagination of the fisher about how the sea bottom looks like, as they do not have any technical view of it. In this way it is the analog model that is in use here. The symbolism is drawn from bodily experience yet uses abstraction and distance. The fishers can verbalize it but cannot convert it into inscription that is highly standardized or capable of being transmitted too far. Thus one has to engage in conversation with a fisher to know about it. The fishers have their indigenous models that they may verbalize as to the origin of fish and humans, that is divine origins, the changes in weather because of coming of winds and how this change of weather affects the flow of fish. These include knowledge about physiology of the fish and other aquatic animals, their capacity to withstand cold, their movements towards warmer seas and so on. Thus much of this knowledge is based on rational interpretations of experience and observations and also basic common sense knowledge that if a fish or animal feels cold it will try to move to a warmer place. Also a fish with scales is different physiologically than a fish without scales. They have understanding of water currents and of the way fish would behave if it is too cold or warm, how it will move etc. Thus the fisher's experience is not entirely a bodily experience as interpretations and symbolisms are involved here.

Thus fishers have their linguistic models when they discuss among themselves about the adas. They have theories and speculations about them too. Thus one need not separate an embodied from a linguistic model. But the real separation is between formal or hard knowledge, thus the fishers were unable to put their knowledge down on paper, by any kind of hard inscription and that is where the real difference lies. Without such inscription the knowledge cannot travel, it remains local. Like when it comes to classification the fishermen cannot do context free classification, that is cannot create abstract universal typologies; what they can do is to classify in terms of behavior, occurrence and appearance. "The operating principles of their taxonomy evolve from their practice and the world presents itself as different things to fishers with different practices" (Knudsen: 95). To the fishermen categorization is more important as these categories set guidelines for actions. Most scholars of the human cognition agree that "objectification, reason, and reflection" (Knudsen 2009: 90) are products of the technology of writing. It is through writing that a thought is separated from its author and becomes universally applicable. Also then it cannot be modified except by due reasoning and by public knowledge. The transition from speech to writing permits a fixation and structure that enables not only transmission but also a way in which author ship can be imputed and fixed. Once a person puts a name on a piece of writing that person becomes an author and gains copyright. In the absence of writing authorship it is difficult to assign although as we have seen in the times of oral traditions, authors would inscribe their name into their speech like Omar Khayyam or Tulsidas.

Check Your Progress 1

Note: a) Use the space provided for your answer

b) Check your answers with the possible answers provided at the end of this unit

1) What do you understand by IK? Discuss.

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2) Discuss Local Knowledge critically.

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4.4 HOW TO ACCESS INDIGENOUS KNOWLEDGE (IK) AND LOCAL KNOWLEDGE (LK)

There has generally been an opinion regarding IK that such knowledge is not accessible to others. In fact it is on this basis that Latour had set this type of knowledge as different from formal scientific knowledge. Andrew Vadya et al (2004) suggested that rather than trying to get at the knowledge, which may not always be possible, we should look into the actions that are triggered by this knowledge and then work in this way.

First step: Examine the actions

Second step: What knowledge these actions are based on in so far as these actions rather than any other are taken.

Third step: Causes of changes in these actions and their knowledge bases.

As it is mostly understood external interest in both actions and knowledge is linked to success in devising programs of economic development and environmental sustainability. Unlike most studies that seek to do holistic studies of cultures in order to find out the embedded knowledge systems Vadya advocates a method by which one is limiting oneself to studying only the causes of outcomes of interest. The interests are confined to environmental changes and the actions of people in dealing with such changes and managing their resources. Rather than carrying out research over a long period of time only to come to the conclusion that there was nothing worth learning by way of environmental management and sustainability, Vadya is of the opinion that let us first look for the good practices then follow them up with research to find out the knowledge

behind these successful practices so that we are able to use them for further sustainability. In other words we are looking towards some practice oriented research here and not simply for the sake of research.

One can use such methods as Rapid Rural Appraisal for short term research to collect data specifically for its particular applicability. Vadya et al(2004: 37) noted certain key features of their approach that involves 1) Identifying at the outset certain environment related or resource related actions as objects of study in terms of their relevance for actions directed towards sustainability 2) Studying only those knowledge that are relevant for the goals of sustainability and development and ignoring others. There is no need to study the entire knowledge system and its cultural relevance 3) It is not necessary to assume that all practices and knowledge systems are embedded in cultural matrixes that must be first understood in totality in order to comprehend knowledge and practices. Thus one can assume that understanding or explanation of anything that people do or know can be based on linking them to other things, not necessarily within the same system and that partial explanations can be useful for certain purposes and that we can use our judgment to choose what we need to study and what we can leave out. In other words these scholars are trying to establish a methodology for studying societies that differs from classical anthropological holistic studies. However if there are knowledge that are so deeply culturally embedded that they are not understood even by the actors then they cannot be studied so easily.

4.5 INVESTIGATIONS INTO LOCAL KNOWLEDGE

Vadya et al (2004 *passim*) carried out investigations into farmer's practice of pest management in Indonesia. Their aim was to observe how farmers used traditional knowledge and also how they responded to inputs of scientific training given to them from outside. The knowledge imparted to the farmers about pest management was about the interactions between pests and their predators, about the differential impact of various pests at different stages of the life cycle and about dangers of overuse of pesticides that kill the pest predators, thereby ultimately causing a resurgence of the pests. The idea was to focus on the practices and its related knowledge base without trying to find out its cultural and social interrelationships. Five villages were studied in which weekly morning long IPM (Integrated Pest Management) sessions were held for approximately 25 farmers, in each village, for ten weeks. Each farmer was paid 1000 Indonesian rupiahs and a snack for attending each session. Specifically the training involved counting the number of pests and predators in a section of the field to decide what amount, if any, of chemical pesticide to use. The authors wanted to observe the application by the farmers of such knowledge and any innovations they were likely to make to them based on their own experience or knowledge. They found that many farmers did learn the procedures of counting and sampling in the school but none were following them in their own fields. The farmers walked through their fields, usually near the edges and looked out for the visible pests, that included passing their hands over the crops to see the pests, but none looked for the predators as they were taught in the school. The interesting observation made was, "there indeed were farmers who could and did learn sampling rules and counting procedures; however they regarded these simply as rules and procedure to be followed in the schools and they saw no good reason to apply them to their own farming activities" (ibid:41). Even if some of them did reduce use of pesticides it was for the reason that they could no longer afford them.

This training was imparted in 1990 and after two years in 1992, returning to the field, the authors found that while most farmers claimed they had learnt all about the pest-predator relationship they were however applying them to their field in ways different from what was taught to them in school. Instead of going for physical sampling and counting they had devised more innovative ways of achieving their ends. One farmer carried a torch into his field at night to attract the moths and by the density of the moths assess their presence in his fields. It was then decided that the team will study the practices of the farmers to assess their relevance for pest management. Some of these practices were found functioning quite well. Like the practice of putting up a crab on the end of a stick in the field to let the rice seed bugs attach to it so that they could then be burnt. Other practices were identical to those recommended by scientists like flooding the rice fields to drown mole crickets, and draining the fields to get rid of nematodes. There were some old practices that did not seem effective like catching a grasshopper in the bush or forest and then carrying it around the rice field and chanting to the rice bugs that this is your father, go with him, your home is not here. It was also found that a certain point the farmers stopped taking action against ridding their fields against pests. To the farmers the failure of insecticide in these cases was because either the pests were magically sent by the goddess Nyai Loro Kidul or the pests would only leave when they were fully satisfied by their feeding on the crops. Other forms of indigenous knowledge that were sometimes evoked were that the brown plant hoppers were sent by the goddess in the place of rats that she used to send in earlier times, that the plant hoppers to some extent could be eliminated by pesticides and that the coming of the plant hoppers was not sudden but preceded by signs such as storms and heavy rain, confirming their supernatural origin.

Thus the invocation of some of the traditional supernatural knowledge by farmers in not taking action under some circumstance, but not all, indicates that there is context dependent variability of action that needs to be accounted for. Sometimes for example the farmers were drawing upon their former knowledge about non-insect predators such as snakes on rodent pests to apply to and augment their learnt knowledge about predator prey relationships. There was also the tendency to stick to traditional methods and use them partially in conjunction with new learnt knowledge. Thus while the farmers became well versed in predator prey relationships they still preferred to use the traditional method of observation by sight and from the edge of the field rather than by counting from within the field, as they were taught.

Again other research has indicated that not all forms of cultural communities and IK use the same type of group behavior. While most people consider IEK to be a shared form of knowledge, Walters (1998) in his research in the Philippines found otherwise. He found that mangrove planting in this region was a private and household affair and different people did not share their knowledge. The people also thought that there was no knowledge involved in mangrove planting and it was just a simple task that anyone could do. However at other times as the study by Waddell (1972) of the practice of planting sweet potatoes on mounds by the Fringe Enga shifting cultivators in New Guinea shows, it appears that very precise scientific knowledge is being used by the people almost unknowingly. The Enga sow their potatoes on large plano-convex mulch mounds, about three meters in diameter and more than half a meter in height. The Enga were themselves not able to tell why they did so except that their forefathers had always done it

that way. Waddell, a geographer, was of the opinion that these mounds were constructed in such a way as to protect the crop of sweet potatoes from frost in the highest altitudes. Waddell took temperatures from unmounded ground and from the top of the mounds and then made measurements that showed that the height of the mounds and the minimum height above ground at which the sweet potatoes were planted, increased with the altitude and correlated with the intensity and frequency of occurrence of frost. This indicated that such precise knowledge could not be just by chance but as a result of long term experience of the Enga with potato planting in that particular environment. However as the practice was reutilized people forgot about the reasons and followed it blindly yet the origin of the practice must have been by the scientific method of trial and error and then arriving at the best solution.

Thus these studies reveal various aspects of indigenous knowledge:

1) It is capable of being partially integrated or fully integrating with learnt knowledge.

2) Sometimes having no practical utility and on other occasions having immense efficiency.

3) IK is not necessarily culturally embedded and as Vadya *et al* have shown, can be studied by itself with only context specific reference to culture and tradition.

4) The study by Waddell also shows that we may look for efficacy of certain practices by using formal methods of analysis rather than always depending upon cultural or cognitive modes of explanation.

4.6 INTELLECTUAL PROPERTY RIGHTS (IPR)

The notion of intellectual property rights refers to the claim that one can make legitimately to any piece of creative work, a discovery or a knowledge that one has prior to anyone else. While it is easier ascribed in the modern times when people are aware of the legalities of ownership it is difficult to introduce such rights among people who may not have any concept of property, where traditionally rights of user rather than rights of possessor were in place. Even knowledge, like in the case of the Enga cited above may be attributed to the ancestors or may not be recognized as knowledge; for example the Philipino thought that planting mangrove forest required no special skill or knowledge. Rights to traditional knowledge was thus often usurped by outsiders and in case where patents are issued for certain herbs or natural products, the local people suddenly found that they were alienated from those resources to which not only did they have access for ages but the use of which they knew from antiquity. Infringements of traditional rights has often resulted in conflict in the modern world and the Indian government for example had to fight court battles to prove that basmati rice and herbal products based on *neem* were a part of Indian traditional ecological knowledge and could not be usurped by outside agents. The Igorots of Philippines have fought for their identity and rights to their own culture and knowledge; they have successfully fought for their rights and gained ground. Even the Churches in these regions have become more sensitive to people's rights and incorporated indigenous cosmologies and practices in their preaching.

The native Americans have also been fighting through their grass roots organizations that are also proposing "innovative sustainable indigenous alternatives" (Gonzales and Nelson 2001: 508) to use indigenous knowledge for production and making the environment enriched in a sustainable way. Knowledge among the Native Americans is guided by their natural law that stresses reciprocity that is one must give something in return for one gets and that one must never take more than what one needs. Such laws are obviously at odds with the larger consumer culture and capitalist economy and also those tribal elders from within their own communities who may like to opt for the western economic-political system for short term gains. Today however many native Americans have laid claims to their Intellectual Property Rights in the form of their IEK and are seeing the return to their own indigenous systems of knowledge and life-ways a way of asserting their inherent sovereignty. Today a new category of World heritage site includes the 'Cultural Landscape' as recognition of the fact that it is difficult to isolate people and their knowledge from their place of living. Knowledge for example cannot often be isolated from supernatural entities and plants and animals. The shamans regularly believe that the knowledge that they possess emanated from supernatural sources, "In this sense, a division of traditional knowledge is not local knowledge, but knowledge of the universal as expressed in the local" (Tucker and Grim 2001:3). Such ideas are not uncommon in many parts of the world among traditional healers. Even in India many such healers do not charge any money for their knowledge believing that if they charge money the supernatural agency will withdraw the knowledge from them. Like for many other people in the world, knowledge may be seen as a gift and one must give in order to justify the acceptance of this gift.

As reported, the shamans of the Mazatecs of Southern Mexico confer with plant spirits in order to heal and a part of being a healer is to be able to understand what the plants tell you. Similarly the Kayapo Indians of Brazil believe that health and well being of humans depends upon plants, animals and forces of nature. Thus it is difficult or impossible to assign IPR to individuals in such traditional knowledge societies and such rights are therefore conferred on the community along with its rights to certain resources and territory. The International Labour Organization (ILO) is the only legally binding international organization to protect the rights of indigenous and tribal people.

Check Your Progress 2

Note: a) Use the space provided for your answer

b) Check your answers with the possible answers provided at the end of this unit

1) What are the methodological understandings of accessing IK?

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2) How is the TK and Scientific Knowledge sustainable?

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3) What do you mean by IPR?

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4.7 LET US SUM UP

- "Ecological ethnicity" refers to those small pockets of humanity and their environment that is not part of the global economic order or are struggling to remain out of it.
- The recent policies of the Indian Government in introducing the Tribal bill look into some of the issues of TEK and there is now a political recognition that local governance and local management of resources are the only way in which some major achievements in sustainability can be achieved.
- The future rests on political and intellectual decentralization where alternative modes of thinking and knowledge is given due consideration and placed at equal footing.
- One cannot also override the philosophical basis of IK and TEK.
- The contribution of an earth centric word views or a holistic approach to human –environment relationship towards a sustainable future for mankind cannot be overlooked.
- Most environmental disasters are a result of environmental racism. It is only globalization that has made people realize but only in a limited way that we all breathe the same air and share the same resources on the same planet.

4.8 KEY WORDS

Indigenous knowledge : It is referred to as the unique, traditional, local knowledge existing within a particular geographical area.

Scientific knowledge : Systematic studied knowledge which is organized by general principles.

Intellectual Property Rights : It is a collective term including the independent intellectual rights which can be used collectively for protecting any kind of inventive work.

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4.10 KEY TO CHECK YOUR PROGRESS

Check Your Progress 1

1) Your answer must include the following points
   - Culturally specific self-contained knowledge.
   - Autochthonous knowledge.
   - Oral tradition learned by experience.
   - Emotional and organizational aspects of collectiveness.
2) Your answer must include the following points
   - Rational interpretation of experiences and observations.
   - Case of the Black Sea traditional fisher and their TEK.
   - Ethnoscience.

Check Your Progress 2

1) Your answer must include the following points
   - Examination of actions.
   - Basis of knowledge: Linking knowledge system and other cultural systems.
   - Parameters of changes.
   - RRA (Rapid Rural Appraisal).
2) Your answer must include the following points
   - Learn new ideas, innovative ways.
   - Combine tradition and scientific knowledge.
   - Use of traditional methods.
3) Your answer must include the following points
   - Legitimacy and legalities of ownership.
   - Nature's contribution in the process of production and protection of environment.