

THE CHALLENGE TO INDIGENOUS PEOPLE AND INDIGENOUS CULTURE: AN ASIAN PERSPECTIVE

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Indigenous Peoples

The indigenous people of the world estimated at over 300 million are distributed across continents. Tribal peoples of Asia, Aboriginal and Maori peoples of Australia and New Zealand, and island peoples of the Pacific, Arctic peoples, Native Americans, forest dwellers of the Amazon, mountain peoples of the Andes, African pygmies, pastoralists and Bushmen from Africa all come under the heading 'indigenous'.

When looking at the global distribution of indigenous peoples, there is a marked correlation between areas of biological diversity and areas of cultural diversity¹. This link is particularly significant for rainforest areas such as the Southeast Asia, Amazon and Africa². One reason for this is that the species-diverse environments in which indigenous peoples live are deeply embedded in their production activities and spiritual relations and are therefore maintained. There are about 6,000 cultures in the world, of which 4,000 to 5,000 are indigenous. This means that indigenous peoples make up between 70 to 80 percent of the world's cultural diversity³.

Cultural diversity extent to food production, healing, mythology and a general worldview.

The definition of Indigenous Peoples (IP) in the New World and Old World

Indigenous peoples are distinct peoples, with their own languages, cultures and territories, who have lived in a country since times prior to the formation of the current nation state. They have become disadvantaged and vulnerable as a result of colonial invasion of their territories either by international colonization or by groups within the countries in which they live. It is heartening to see that as part of the resistance against their colonization, indigenous peoples have become increasingly vociferous and assertive in environmental negotiations, specially in the last twenty years.

Indigenous peoples strongly resist being defined by others: 'we assert our inherent right to define who we are. We do not approve of any other definition'⁵. This right is recognized by the International Labor Organization's Convention 169 Concerning Indigenous and Tribal Peoples in Independent Countries: 'Self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of this Convention apply'⁶.

There seems to be a distinct difference between anthropologists on how Indigenous People (IP) are defined. Definitions differ and a distinction is made between the history and definition of the IP of the New world and the Old World.

The International Labor Organization (ILO) Convention 169 'Concerning Indigenous Peoples in Independent Countries' (1989), identifies Indigenous peoples as:

(a) *tribal peoples in countries whose social cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations, and*

(b) *Peoples in countries who are regarded by themselves or others as indigenous on account of their descent from the populations that inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain, some or all of their own social, economic, spiritual cultural and political characteristics and institutions.*

Indigenous peoples are defined by the Special Rapporteur of the UN Economic and Social Council Sub-Commission on Prevention of Discrimination and Protection of Minorities in the following manner:

'Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that have developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems. (UN ECOSOC 1986)

However, Some anthropologists hold the view that this definition of indigenous communities reflects the historical context of the New World (North and South America and Australia). In fact, all the three ingredients of the definition are derived from that historical situation. For example, first, it is in the New World that the "*Indigenous communities, peoples and nations are those*" which had a "*historical continuity with pre-invasion and pre-colonial societies that developed in their territories*". Secondly, it was in the New World, again, that the indigenous people "*consider themselves distinct from other sectors of societies now prevailing in those territories or parts of them*". Thirdly, here the indigenous peoples form at present "*non- dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories and their ethnic identity as the basis of their continued existence as people in accordance with their own cultural patterns, social institutions and legal system*".

These three ingredients in the definition of the indigenous peoples is not in consonance with the historical situations in the Old World, of India and other parts of Asia or even Africa which have a colonial past. The colonial encounter in Asia affected not only tribal but also non-tribal societies. This colonial and pre-invasion experience appears to be critical to the definition of indigenous peoples.

Although the colonial experience has been savage in Asia and Africa, there was a measure of difference in the historical experience between the New World and Old. Colonisation in the New World involved annihilation of peoples, uprooting and destruction of a whole civilization and of a stable cultural system. In the New World, indigenous peoples were

exterminated in many parts. After the British colonisation of Australia in 1788 the aboriginal population came down from 750,000 to 31,000 by 1911. Most had died from introduced diseases like smallpox. In Central Australia from 1860 to 1895, 20 percent of the Aboriginal population perished from diseases. Approximately 20,000 were killed resisting the British occupation of Australia before 1901. Native Indians in North America were butchered in wars with the white colonisers and later herded into reservations, having minimal facilities and no opportunities. The once proud owners of the land were largely decimated and marginalised, their land and properties snatched away from them. Their populations declined and mixed populations came into existence on a large scale. This is not true of Asia or other parts of the Old World.

It is therefore felt that a more universal definition of indigenous people is needed. Such a definition should reflect the following facts

- (i) Tribal people are among the earliest settlers, if not original settlers in many parts,
- (ii) tribal people are relatively isolated,
- (iii) tribal people are relatively undeveloped,
- (iv) tribal people preserve a good deal of their culture, customary law and control over their identity
- (v) tribal people have been part of the larger civilisational world in countries in Asia, and other parts of the world. In India, they have closely interacted with other communities.

Indigenous People of Asia			
Country	Total (Millions)	% of population	Number of indigenous peoples
Bangladesh	0.6	1.0	13
Burma	11.0	30.0	60
Cambodia	0.1	1.1	n/a
China	91.0	8.0	55
India	51.6	7.7	350
Indonesia	3.0	1.5	300
Japan	0.05	0.4	n/a
Laos	0.8	23.0	67
Malaysia	2.0	11.1	71
Nepal	11.1	60.0	60
Philippines	6.5	16.0	50
Taiwan	0.4	2.0	10
Thailand	0.5	1.0	23
Vietnam	9.0	13.0	54

Source: IWGIA (1995), “Consultation on Indigenous People’s Knowledge and Intellectual Property Right”, *Indigenous Affairs*, 4: 26.

Challenges faced by Indigenous People

Indigenous peoples are being increasingly threatened by the 'modern' world. This is happening in many subtle and blatant ways. Of the latter, the first is related to extinction of whole groups of indigenous peoples, amounting to genocide.

Genocide on indigenous groups mostly happens to hunter-gatherers, slash-and-burn agriculturists and horticulturists and is often committed - directly or indirectly - by the government of the nation state. The reason might be that the state wants to exploit the territory in a more profitable way. In the Americas it started some five hundred years ago. Other examples include those against the Yanomami of northern Brazil and southern Venezuela, the Guayaki Indians in Paraguay in 1974, and the tribes in the Chittagong Hill Tracts in Bangladesh during the 1980s^{7 8 9}. This is, of course, the worst possible violation of groups of people and individuals.

Another concern is related to indigenous groups' rights to live in accordance with their own traditions, their rights of access to land which their ancestors used, and the right to use their own language. This is a threat to the peoples' cosmologies and cultures.

A third threat is also from the dominant western society and is directed against nature, and the natural environment used by indigenous groups. This threat is often defined as 'merely' loss of biodiversity. This might happen through the activities of large-scale capital and national corporations in the traditional territories of indigenous peoples with a high potential economic value for governments and for national and international stakeholders. These activities include oil exploitation, mining, dam building, logging, mono-agriculture of cash crops, cattle ranches, the establishment of national parks, nature reservations and tourism. Such exploitative interactions between one party with power and one without, happen all the time, all over the world.

The challenges faced by indigenous peoples fall into 6 broad categories and it is in these areas that they have most vociferously articulated their demands.

1. Self-determination: This category includes the right of self-definition, self-government, to make laws and maintain economic, cultural and social relations across political borders.
2. Territory: This group contains a range of demands all relating to land and resource rights.
3. Prior informed consent: In this section the demands are related to respect for Indigenous knowledge, protection of medicinal plants etc. and the right to determine standards for development.
4. Human rights: There are several related demands in this area, including freedom from discrimination and oppression, rule of law, and the right to life and liberty.
5. Cultural rights: These cover the right to have and express distinct culture, the right to language, access to sacred sites, and the right to practice religion freely.
6. Treaties. There are only three demands in this category all relating to treaties made between colonial rulers and Indigenous Peoples. In addition to two calls for the recognition of extant treaties there was a demand for the re-determination of treaties.

Challenges specific to the Indigenous People of Asia

The countries of Asia and the Pacific region are very rich in their cultural heritage, including, literature, arts and crafts, music, visual arts, ceremonies, architecture associated with particular sites, as well as forms of traditional knowledge related to forestry, medicines and medical practices, agriculture, conservation and sustainable use of biological diversity.

The people of this region are worried about the widespread exploitation of their cultural heritage for commercial and business interests, with no benefits coming to them. Important elements of traditional knowledge and folklore are being lost in the absence of a proper legal protection mechanism at national and international levels.

They feel the existing IPR regimes are inadequate to address all of the issues involved in protection of traditional knowledge and folklore and that effective protection of traditional knowledge and folklore at national and international levels requires *sui generis* legislation.

They want their governments to devote greater attention and resources to the aspects of preservation, conservation, documentation, development and legal protection of traditional knowledge and folklore, and for ensuring the safety and security of the materials and documents so collected to prevent unfair exploitation. They also want support for communities who are responsible for the creation, maintenance, custodianship and development of traditional knowledge and folklore.

The people of the region feel the need to raise the level of awareness about key issues among policy makers, government functionaries and judiciary, social activists, academics and experts, and the general public, to ensure their active and meaningful participation in the process of national consensus building. The process of consultation should include experts on traditional knowledge and folklore, societies responsible for creating resources of traditional knowledge and folklore, academics, social activists and other interested groups to identify essential aspects of an action plan, aiming ultimately, at the formulation of a legal mechanism for protection of traditional knowledge and folklore at national and international levels.

In Asia, the underlying objective of government policy towards indigenous peoples has been to promote their integration with the mainstream. This has been detrimental to their identity. Deeply held prejudices underlie governments' policies. In Indonesia, indigenous peoples are officially characterized as 'people who are isolated and have a limited capacity to communicate with other more advanced groups, resulting in their having backward attitudes....' In Thailand many of the 'hill tribes' are denied Thai nationality and residence, and the Thai armed forces have on occasion expelled long-settled communities into Burma at gunpoint.

Malaysia

Development projects such as airports, dams, golf courses, logging and plantations have led to the loss of land and resources among most indigenous communities in Malaysia, while their traditional social, religious and political systems have been weakened by governmental and other interference like Christian and Muslim missionaries. Few indigenous communities continue their age old practices; most have embraced the new religions, with some attempt to integrate certain elements of their indigenous beliefs.

Oral tradition such as myths and legends, and traditional recreational activities are dying out. The effects of urbanisation and consumerism, combined with the power of advertisements, radio and television, have reached most communities – influencing the attitudes, lifestyles and values of indigenous peoples, and attracting them to urban and western cultures.

The communities occupy land at the pleasure of the state authority. If land is required for any other purpose, the status of the land is revoked and the IP have to move elsewhere. Such areas or reserves have been revoked without the original owner being informed. The state authority is not even obliged to provide alternative land.

The Land Ordinance of Sabah, 1930, provides some protection for indigenous lands in Sabah but the provisions are inadequate and seldom adhered to in practice. Logging on indigenous peoples' traditional lands destroys farm lands, fruit trees and sacred sites. It destroys fallow land, thus threatening future food production. Forests that have been bulldozed cannot be planted with crops as the soil is compacted. Rivers on which people depend for water are polluted and forest produce becomes scarce, threatening the economy of the people.

The building of dams has caused large-scale displacements. The communities have lost large areas of customary lands, and their communal life has broken down with the introduction of the cash economy. The promises of free electricity, free housing, free water and land ready-planted with crops were never implemented. Food production was severely affected. The women's position was undermined; land ownership was given to men and compensation only paid to male heads of households. Some men abandoned their families, taking the money with them.

Without access to their own land and forests, indigenous peoples have no access to firewood, land for planting rice or vegetables, and no materials for weaving, and so are completely dependent on wage labour for a meagre subsistence. The resettled people mostly end up in debt.

Thailand

The restriction of land available to tribal peoples in Thailand began with the designation of huge tracts of land as 'restricted areas' for human use, including conservation areas, national parks, watershed areas and wildlife sanctuaries. This was followed by a government ban on commercial forest use. A Bill was passed in 1985, which included a ban on residences and 'environmentally detrimental' cultivation. Along with this, the

National Social and Economic Plan attempted to change the lifestyle of the tribal people. Government policies have succeeded in marginalizing and discriminating against people already at an economic disadvantage. The indigenous and tribal peoples in the north of Thailand face a serious challenge to asserting the validity of their traditional knowledge and teaching their young the traditional agricultural systems.

However, The most direct attack on tribal identity has been the policy of assimilation and integration, which was formally adopted in 1976. To discourage the tribal minorities from aligning with ethnic nationalist movements in neighboring countries, especially in Burma and Laos, the Thai government linked the northern people with the Thai state. Roads were constructed to even the remotest of villages, schools with Thai teachers teaching Thai curricula were established. A Thai political system replaced the traditional local leadership systems and attempts were made to convert these populations to the dominant religions. As the traditional belief systems with strong taboos over the use of forest lands are replaced by world-encompassing religions, the specific religious beliefs which preserve the forest- are lost. Areas once considered the domain of ancestors and spirits are then considered empty forests, available for cultivation and occupation.

Indonesia

With rapid population growth and the accompanying scarcity of land, the issues of land utilization and access to land have assumed a high potential for conflict in Indonesia during recent years. Even as the report is written, large scale conflicts are taking place in Sulawesi, between the IP and the government. Indigenous people are often arbitrarily displaced, under 'legal' eviction. Concession rights are frequently granted to commercial interests over areas that belong to the local peoples under their customary (*adat*) laws. Concessionaires gain unlimited access to these lands for agriculture, mining, logging or road construction.

Government regulation requires forest concession holders to meet with representatives of communities to determine the 'nature and implementation' of the traditional rights. In reality such meetings are never held ¹⁰.

These concession holders have raked in massive profits from the destructive exploitation of *adat* lands. Local communities are denied their legitimate rights over the natural wealth of *adat* lands for the duration of the concession. Illegal logging or land purchases make things even worse, and even community leaders are sometimes involved in these criminal schemes. So far, support from legislation and level of law enforcement is inadequate. Protected areas are encroached with impunity.

Indigenous peoples often have to sacrifice their traditional property rights without adequate or just compensation for the development of luxurious tourism resorts. Conversion of forests, migration and mining constitute other major threats.

Adat land use rights and national land laws exist side by side, giving rise to conflicts that can lead to violence. However, international law provides a basis for the recognition and protection of community based tenure systems, at least insofar as 'indigenous' peoples are concerned. In Indonesia, there are also laws mandating recognition of community tenurial

systems, but these have not been effectively enforced. Moreover, the national land registration system does not accommodate communal rights.

Dispossession of indigenous communities is increasing, and most of the traditional systems of control of forest resources are probably condemned to disappear. The *adat* is being gradually abandoned by the present generation, and the forest of today is no longer mythic or mystical, but the domain of the forest administrators and often of others who come to benefit from the communities' ancestral resources¹¹.

The deforestation problem has been compounded because of the increasing complicity of traditional communities who are also engaged in illegal felling. Forests are further damaged by fires that are caused by burning brush to clear fallow agricultural lands without following the traditional practice. In addition, the fact that *adat* rights to land are often abused, providing developers with easy legal access to natural resources, means that Indonesia is experiencing rapid deforestation.

Nepal

The state has been slow to recognize different knowledge systems and practices, and there has been no rigorous effort to define the indigenous people. Indigenous peoples in Nepal have been primarily living on non-cash resources until recently, and have different practices of resource management. Legally, indigenous and oppressed (Dalit) women can own property but they cannot inherit. As a result they have little control over resources.

In 1957 common property resources were legally confiscated when forests were nationalized. The access of IP to resources is minimal and their voice is scarcely heard by the policy makers.. The forests, particularly those of the *Terai* (lower foothills), are exploited by commercial interests. Multinational corporations are an increasing threat to the livelihoods of those dependent on forests. Engaged in a non-sustainable form of bioprospecting, they have denuded the forests for year, in the search for bio-wealth specially medicinal plants.

Thirty to forty years ago, the issue of ethnic identity was suppressed in the name of nationalism. This period was highly successful in establishing an 'economic growth-based development model'. This seriously undermined concern over indigenous issues. So far indigenous concerns have not been placed on the national political agenda. There is no indigenous perspective and no political commitment to Indigenous People. In this situation it is not surprising the extremists are increasingly receiving backing from marginalized ethnic groups.

Bangladesh

Indigenous peoples, who are referred to in government records as 'tribals', live in all six administrative divisions of the country. Over 40% of the indigenous people are located within the Chittagong Hill Tracts (CHT). However, information from various sources indicates that the actual indigenous population of the country is significantly higher than is indicated by the official estimates.

The indigenous peoples form a numerical majority only in the CHT where there is a separate administrative structure which allows limited self-government and land management. The CHT also has the second largest forest area in Bangladesh after the uninhabited Sundarbans. The recent accord on the CHT provides for the strengthening of the regional self-government system with authority over land management and land administration. However, the extent to which the CHT councils will be able to control the local government institutions will depend on how well the accord is implemented.

The denial of land and resource rights to IP in the government forests is a common problem. Despite having title documents to their lands, many indigenous people of the Modhupur forest and in the CHT have been unjustly evicted or subjected to oppressive civil and criminal actions. The situation of the indigenous Khasi people in the Sylhet Division is only marginally better. Over the last few years, the Forest Department has changed the Khasi forest villagers' long-term leases into short-term leases, making the forest inhabitants' rights to their homes and lands far more precarious. The government of Bangladesh is amending the Forest Act of 1927, mainly, it is believed, to facilitate logging through deregulation. This would have far-reaching implications for the land and resource rights of indigenous communities throughout Bangladesh and worsen an already acute deforestation problem.

India

In India although customary laws of Adivasi (tribal) people are to a large extent protected by the Constitution of India the implementation of these rights is far from satisfactory. Special rights of Adivasis include the Scheduled Areas, according to which tribal land can not be sold to non-tribals and only tribals can be agents of development. The Affirmative Action policy, guaranteed constitutionally, ensures reservations in education, employment and political representation by reserving political constituencies. A third protection is by Special Provisions (as in the case of Nagaland) where tribal dominated states have been given constitutionally guaranteed rights, (Article 371). Apart from land ownership, these rights include rights over natural resources including forests. Lamentably, commercial interests often collude with government departments to abort these rights. In the year 2000, three new states, Jharkhand, Chattisgarh and to some extent Uttaranchal have been created in order to fulfil the long standing aspirations of tribal populations to have their own states, under their governance and control.

The displacement of tribal and indigenous peoples

Around 90 per cent of India's bauxite, coal, uranium and other minerals, and about 40 per cent of its iron and copper ore, are in tribal areas. No official information exists on the numbers who have been displaced. Initial data indicate that of over 30 million displaced people, only one third have been resettled. Of the displaced, 40 per cent are tribal and indigenous peoples, and over 15 per cent of all the tribal and indigenous peoples have been displaced at least once. Mining, roads, dams, canals, hydro-electric projects, industry, national parks and protected areas and other development projects continue to encroach on tribal lands and displace people.

Two destructive “developmental” processes common to most habitats of IP are displacement and deforestation. The processes in both the cases are similar. The difference is that the former pushes tribal and indigenous peoples out of their community without any preparation and without any resources. The latter deprives them of their livelihood but some resources, i.e. forests, remain. In the latter case, moneylenders and merchants accompany the industrial agents. Many tribal and indigenous communities have generally lived in the informal economy and are thus unprepared for sudden encounters with the agents of the formal economy. Consequently, tribal and indigenous peoples have fallen into the hands of the moneylenders and often lost what little land they had; many have become bonded labor. To survive, others have cut trees for sale as fuel or turned to wage labor under timber contractors or wildlife smugglers. Women suffer the most. As a result of deforestation, the distance of forests from villages in much of eastern India increased from about 1 km in the early 1960s to around 10 km now. Women have to walk this extra distance to ensure the regular supply of fuelwood , fodder, food and other daily requirements – all of which are increasingly scarce. This has implications for women’s health and the nutrition of their families.

The World Bank Forestry and Eco-development projects being imposed on several forest regions of India are inherently exploitative. Forestry projects are turning forests into timber plantation for use in paper and pulp industry and ecocodevelopment tends to create recreation centres for the middle class and tourists. Thus the resource-rich regions have become victims of a high level of exploitation.

Displacement of tribal people is increasing with liberalization. Out of 930,000 ha of land acquired in Orissa 41,000 ha. were for industry. Future trends suggest that about 81,000 ha. will be acquired for industry alone in the next decade. This situation is being replicated in other states of India.

There are various estimates of people displaced by dams in India. According to some estimates displacement due to dams and other development projects are to the tune of 40 million. Some other studies put the figure at 33 million, most of which were not resettled.

The problem with Relocation and Rehabilitation Programmes

Relocation and rehabilitation packages are seldom delivered as promised. Some of the major movements in the country (and elsewhere) were the result of the inadequacy of the packages and it’s poor implementation. The problems frequently confronted in delivering the compensation packages can be summarized as below:

- Eligibility:- There is the problem of defining the eligible families or individuals for providing the rehabilitation packages. Some genuinely deserving families or individuals get left out. It seriously hampers in making an economic assessment of the project besides resulting in a lot of anguish among those left out. Sometimes complaints of corruption and arbitrariness are also reported in applying the selection criteria.

- Process of displacement:- There are a lot of complaints about not giving prior information and notice of impoundment. Many complaints have been made about not being informed of the process of relocation and rehabilitation.
- Quantity and quality of land:- The most frequently raised complaint about the displacement process is the quality and quantity of land given for rehabilitation, in those few cases where it is given. The allocated areas often have poor soils without irrigation facilities and are in rocky terrain.
- Availability and adequacy of other inputs:- Besides land, the dam/ project authorities also promise to deliver other essential inputs for starting out in the new locality which hardly come in to reality. When they do, these inputs are generally inadequate. There are complaints that the cash compensations are often delayed or not delivered without the exchange of bribes. Sometimes these compensations are inadequate for the purpose, for example for constructing a new house or buying adequate land for agriculture.
- Availability and quality of services: - Essential services like health, education, electricity, drinking water etc. are frequently non-existent, delayed or inadequate. In the earlier habitat the communities had their own systems for these services which are not found in the new, relocated areas.
- Follow up and grievance redressal: - Once the displacement process is started, no system of monitoring or redressing the grievances of the displaced populations is found in most of the projects.

Some of the fundamental consequences of displacement and deforestation are:

- i) Loss of common property resources
- ii) Loss of cultural heritage sites and monuments
- iii) Loss of home and hearth
- iv) Loss of familiar social and geographical surrounds
- v) Loss of preferred or familiar sources of livelihood
- vi) Adverse impact on physical health
- vii) Trauma, uncertainties and insecurities
- viii) Adverse impacts on living standards
- ix) Social alienation from, and conflicts with, host communities
- x) Loss of infrastructure and access

Resistance by the Indigenous People

Rural and tribal communities are demanding a halt to their dispossession and autonomous political and economic management. They are ready to share their resources with the nation and the rest of the world but they object to another class appropriating their livelihood and impoverishing them in the process. Similarly, movements are strong against the intellectual property rights regime of the WTO/TRIPs, which recognizes the rights of the

companies but not those of the communities, which have developed the knowledge that the companies privatize and patent. The tribal and indigenous peoples demand that they be allowed to change on their terms and face the 'mainstream' society as equals. They demand rights over their knowledge and a benefit-sharing system that respects their traditions.

Many would like to view the indigenous peoples' resistance to outside interventions as the reactions of static and conservative societies, opposed to all change. That is incorrect. The reality is that indigenous peoples are seeking change, on their own terms, at their own pace and under their own control:

"Don't mistake us. We are not a backward-looking people. Like others we want development and we want to improve our lives and the lives of the next generations; we want better education, better health and better services. But we want to control this development in our land and over our lives. And we demand a share both in decision-making and in the benefits of development."

-Indigenous person resisting logging in the Philippines

Achieving this kind of development implies a radical change in government policies towards indigenous peoples. Indigenous peoples demand recognition of their territories and to control what happens within them. They seek the right to determine their own development.

In Asia, practical initiatives are being made by indigenous peoples to put this model of 'development' into practice. For example, as a first step in asserting their land rights and clarifying boundaries, indigenous communities in Indonesia, the Philippines, Sarawak and Thailand have been carrying out participatory mapping exercises, using technologies ranging from tape-measures and compasses to satellite-linked global positioning systems.

In Papua New Guinea and the Solomon Islands, where land rights are already legally secure, communities that have resisted leasing their forests to foreign logging companies have begun using small portable sawmills to harvest timber themselves in much less damaging ways. In Thailand, where the government banned all logging in the late 1980s, a draft law is being discussed which could grant communities the right to manage their own forests.

Although not brutalized like their New World counterparts, tribal societies in India and Asia have been often exploited. The rights that were given to them by post-colonial, independent governments are being eroded by skewed development projects, domestic industry as also the forces of globalisation. Despite all this, social movements led by the tribal people against displacement and exploitation are receiving the support of non-tribal people in all parts of India.

The inherent clash between western and indigenous systems.

Indigenous peoples do not view their heritage as property that is something, which has an owner and is used for the purpose of extracting economic benefits, but in terms of community and individual responsibility. Possessing a song, story or medicinal knowledge

carries with it certain responsibilities to show respect to and maintain a reciprocal relationship with the human beings, animals, plants and places with which the song, story or medicine is connected. For indigenous peoples, heritage is a set of relationships rather than just economic rights

It is the concept of property that underlies the western legal concepts of conquest and occupation and provides the justification for the theft of indigenous land and property. Indigenous knowledge systems are created differently to the newer system of intellectual property rights, which rest on the concept of ownership. Today IPR regimes are dominant and provide the legal justification for the theft of indigenous knowledge. Western concepts of 'originality' and 'novelty' are forced on the international system where no space is created for customary knowledge existing for centuries. There is no recognition or acknowledgment of the indigenous communities who generated this sophisticated knowledge.

Indigenous and Western knowledge systems

According to indigenous people, knowledge and land are intimately bound to one another just as the natural world is alive and spiritually replete. This is a significant point of contrast with western science where knowledge of nature is distinct and separable from nature. This difference is fundamental. It has important implications for understanding how and what members of a knowledge community know; how they learn and teach; how they innovate; and how they use knowledge. On the other hand, the ideology of the market, and the omnipresence of market forces, define the western concept of knowledge.

Law, and most especially intellectual property law, is increasingly central to appreciating the role of power in western techno-science. It has been, a 'primary agency of the advance of new modalities of power and constitutes distinctive features of their mode of operation'¹². Intellectual property laws have been a particularly effective strategy for acquiring, commodifying and rendering profitable, intangible indigenous resources, such as artistic expressions and medicinal and spiritual knowledge¹³.

Western legal concepts of occupation, conquest and cession provided the justification for the theft of indigenous property. Today, intellectual property regimes provide the intellectual cover and 'legal' justification for the expropriation of indigenous knowledge. Members of the indigenous communities query the concept of 'innovation' as defined by Western intellectual property laws - particularly when "no recognition or value is accorded to the customary knowledge which links a species of plant to a particular usage, and details the most appropriate harvest, portion of the plant... and method of preparation"¹⁴. Indigenous knowledge and generations of indigenous labor - mental and physical - are minimized and discredited by this 'legal' transformation. All that is credited is the labor of individual corporate and academic scientists who interject 'novelty' into what they have taken.

Western concepts of 'originality' and 'novelty' are thus imposed on the world, as western law and technoscience join, assimilating the knowledge, resources and labour of generations of indigenous peoples. Meanwhile, indigenous processes of knowing are dismissed as closed, changeless, stultifying and stifling of originality. Such characterizations not only ignore the massive contributions of indigenous peoples - especially medicinal, pharmaceutical, botanical and agricultural - they also egregiously

distort indigenous knowledge systems themselves. 'Originality' is contributed by not one but many innovators. If there were no originality or innovation in indigenous processes of knowing, the incredible richness and diversity of the genes currently being held in gene-plasm banks, to cite but one instance, would be inexplicable.

A very different concept of innovation is to be found in many indigenous knowledge systems. The source of originality is not internalized, as the genius of one individual; the natural world, the community, and the individual are all integrally involved. Individuals are subject to independent forces, and constrained by the need to act with respect for the natural world and for future generations. The community trains the individual, but since the process of knowing is experientially-based, and what one learns depends on individual development, abilities and preparation, individuals play an essential role in contributing new knowledge to the community. As one young man from the community explains, 'You don't ask questions when you grow up. You watch and listen and wait, and the answer will come to you. It's yours then, not like learning in school' .¹⁵

Traditional ecological knowledge of indigenous and tribal peoples is scientific in that it is empirical, experimental and systematic. However, it differs in two respects from western science: first, knowledge is highly localized. Its focus is the complex web of relationships between humans, animals, plants, natural forces, spirits and landforms within a particular locality or territory. Therefore, although reluctant to generalize beyond their own field of observations and experience, indigenous peoples can make better predictions about the consequence of physical changes or stresses within a particular ecosystem than scientists who base their forecasts on generalized models and field observations of relatively short duration, often restricted to the university-break season.

Second, local knowledge has important social and legal dimensions. Every ecosystem is conceptualized as a web of social relationships between a specific group of people (family, clan or tribe) and the other species with which they share a particular place. Ecological models often appear in stories of marriages or alliances among species. Hence the structure of an ecosystem is regarded as a negotiated order in which all species are bound together by kinship and solidarity.

Consistent with these general principles, indigenous peoples possess their own locally specific systems of jurisprudence with respect to the classification of knowledge, proper procedures for acquiring and sharing knowledge, and the nature of the rights and responsibilities that are attached to possessing knowledge. Some categories of knowledge may be attached to individual specialists, and other categories of knowledge to families, clans or the tribe or nation as a whole. In most societies, knowledge is also divided by gender; for example women are most often the bearers of botanical and medicinal knowledge.

It has been generally believed that the knowledge systems of local communities and indigenous peoples are holistic in nature. Centuries of association with an environment have produced a deep understanding of the inter-relationships among the different elements of a landscape or a habitat. Because fluctuations in the environment require adaptive responses, communities have developed a wide range of diversified survival strategies at intra and inter-household levels as well as at community level. However, local and indigenous knowledge systems, while generally holistic, have some reductionist

elements. In order to cope with the complexity of ecological change, some people in the community specialize by knowing more and more about less and less. Such specialized expertise requires focusing , targeting and steering strategies on specific themes or aspects of nature.

So called western science is biased in favour of reductionist relationships, whereas local knowledge systems are biased in favour of systemic linkages and a holistic perspective on nature. Where efficiency of resource use has to increase so as to cope with increasing population pressures (where applicable), scarcity, fluctuations in the environment, or other contingencies, a blending of formal and informal science may be necessary. Achieving sustainability in resource use requires the fusion of sacred with secular, formal with informal , and reductionist with holistic views.

Current debates on IPRs and benefit sharing over TK assumes a structureless homogeneity of local communities. They assume a convergence between the interests of local community leaders and those of local experts and TK holders, but this is difficult to accept. The asymmetry in knowledge systems and related power differentials are apparent in global discourses on incentives and consultations. These have been dominated by the so-called representatives of indigenous communities, though of Western origin, both in terms of numbers and ideas. For instance, in various consultations by UNEP and the CBD local communities are largely represented by the more articulate indigenous people from western countries. Both formal and informal sciences are capable of producing abstracts as well as practical knowledge, although the latter tends to produce more of the practical kind. Different incentives might nurture different types of knowledge. For instance, material-individual kind of incentives may include IPRs as one kind of incentive. Because of industrial application, these rights have a possibility of either being licensed or being worked to generate commercial returns.

The Economic importance of Indigenous Knowledge : It confers value

Plants in the forest have value only because people have the special knowledge about their characteristics. Otherwise a plant with blue flowers is only ornamental. It is indigenous knowledge about its medicinal properties that makes it an economic resource.

When pharmaceutical giants like E. Merck show interest in the production of medicines based on tribal knowledge, they explore the forest wealth of developing countries with the help of local healers. The scientist from Merck cannot make head or tail of medicinal flora if he does not have information from the *vaid* or the tribal *ojha*. Merck will begin to look for a cure for headaches in plants that are used to treat headaches and not in plants that local communities use for treating skin disorders.

The importance of indigenous knowledge can be understood very clearly when one realises that there are neither rice or wheat plants nor cotton or mustard found lying around in the forest. What are found in the forest are wild plants out of which communities of men and women over generations have bred races of several food and cash crops. These

communities have bred out of the wild plants of the forests, the thousands of land races, which are the basis of the world's agriculture. The land races bred by farming communities are the foundation materials of modern plant breeding and global food security.

It needs to be remembered that rural and tribal women and men have not only created several thousand races of food and cash crops, they have also identified valuable genes and traits in these crops and maintained them over generations through a highly sophisticated system of crossing and selection. Communities have not only developed complex systems of pest management and biological control, they have identified and managed a series of genes conferring valuable traits for commercial and domestic needs.

So it is that genes for traits as diverse as disease resistance, high salt tolerance, resistance to water logging and drought tolerance have been maintained in the repertoire of communities. Along with these commercial traits, characteristics like cooking time, taste, digestibility, milling and husking characteristics like how much grain breaks during milling operations are recognised and maintained. Women who have been the traditional custodians of the seed and responsible for its selection, are the repositories of this knowledge and in the true sense owners of this complex seed technology and know-how. This work of genetic selection, maintenance and cross breeding is the result of innovative and creative scientific experimentation in the field. This work is in no way less than the scientific experimentation conducted by scientists in the experimental plots of agricultural research stations.

The fact is that there would be no modern plant breeders if there were no indigenous knowledge. For example, faced with the threat of global warming and climate changes across agricultural zones, scientists are on the look out for crop varieties that are more heat tolerant. They acquire this information by going to deserts and hot regions and asking local farming communities about the varieties that grow in that region and that can withstand extreme heat. Armed with the benefit of indigenous knowledge, these scientists return to their labs and their experimental farms and engage in a breeding and selection program that will result in the combination of traits that they seek to achieve in the new variety that is to be designed for post global warming agriculture.

One could say quite easily that if the breeding of a crop variety entailed 100 steps, then indigenous knowledge contributed at least the first 70 or 80 steps and laboratory science contributed the next 20 to 30 steps. It stands to reason therefore that credit, reward and recognition for a new variety should be similarly shared. That is the reason why the claim to place Farmers Rights on par with Breeders Rights is such a natural claim. Farmers have a greater and more innovative share in the creation of new plant varieties than scientists. Their contribution must be recognised with at least the same degree of enthusiasm, if not more than that accorded to scientists.

The role of indigenous knowledge in the realm of medicinal plants is even more obvious than in the case of crop varieties. Knowledge about the characteristics of a particular plant and its properties as a healing substance, or stated differently, the technology of its use, is what gives medicinal plants their social and economic value. This technology of use has been acquired through a few thousand years of experience, trial and error and incremental

refinement. As a result of this, communities have developed the knowledge of the plant, animal and mineral world to a mature and scientifically sound technology.

It stands to reason that the technology pertaining to the medicinal uses of plants and animals belongs to indigenous communities and must be considered their property. It must be considered to be their property in the same way that a technology for making high-grade chrome steel is considered the property of the Japanese company that developed it. It stands equally to reason that when someone wants to use indigenous technology to produce medicines from medicinal plants, they must first ask for permission and then agree on terms of payment for the use of this technology.

The economic value of indigenous knowledge and sharing benefits with communities

Indigenous knowledge is technology so local communities, who own that technology, must be paid for its use. This belated recognition underlies the current debate on benefit sharing. Benefit sharing is a complex issue, which is agreed in principle by many, but there is very little idea even among its proponents regarding how it can be implemented and what can be termed as a fair and equitable sharing. Even in the international arena, experts are still grappling with the fairly new concept of benefit sharing.

The convention of Biological Diversity (CBD), the main international charter on conservation and sustainable use of biological use of biological diversity propagates preservation of traditional lifestyle and livelihood of traditional communities. It not only states that access to genetic resources and associated knowledge should be based on *mutually agreed terms* and *prior informed consent* of the holder of such knowledge and resources, but it also suggests *fair and equitable sharing of benefits derived from the use of biotic resources and its associated traditional knowledge*. However, both CBD and the Biodiversity draft of India which is being framed to meet India's obligation to this convention is silent on the implementation aspects of benefit sharing.

Proposals for benefit sharing

Kinds of Benefit Sharing

It is important to build into the concept of benefit sharing, both monetary and non-monetary terms. Though benefit sharing depends on the bargaining capacity of each country and local community and also on what kind of benefit is expected from a particular transaction, some forms of benefit sharing have already been evolved and established in a few countries.

They are : Up front payment; Royalties; Fees for material and services; Involvement of local communities and researchers in research and development; Milestone payment; Training imparted to local communities, researchers and students; Technology transfer to local institution ; Licenses local authority to manufacture and market commercial products of the recipient company / organisation; Assistance in development programme like health, education etc; Joint venture; Translation and making available pertinent information /document /report etc.

Today, despite the rising commercialization of genetic resources, the benefits to communities from international markets is negligible. Twigs of a tree called Tetu (*Oroxylum indicum*) are traded in India at Rs. 9/ kg (about US 20 cents/ kg). Its extracts on the international market fetch Rs. 500,000/ kg (US\$15,000/ kg). This is rank exploitation.

Benefit sharing in pharma.

According to the figures put out by the international pharma industry, it costs them between 500 to 600 million dollars to put a new drug out on the market. This is the foundation of their claim for stringent IPR. When a company pirates a product based on TK and converts it into a medicine, it has 'acquired' a product, which is worth a few hundred million dollars.

Take the American patent taken on *Phyllanthus amara*, a plant known in India and some other parts of Asia, to have curative and regenerative properties for the liver. A liver medication based on that or any of the many other medicinal plants with their IK that have been stolen from developing countries, would be worth hundreds of million dollars. Suppose we set aside 40 to 50 million \$, even 100 million \$, for standardising for the western market and packaging etc., we are still talking about a product worth something like 400 to 500 million \$ which has been taken from communities. This should form the basis for calculating benefit sharing in the pharma sector. If the community's share were to be calculated at 5 % of \$ 500 million, that works out to 25 million US \$ as a flat rate. In addition to this should accrue a percentage of the annual profits

Benefit sharing in agriculture.

In the agriculture sector, proprietary seed sales from seeds bred using farmer varieties will not generate that kind of revenue so benefit sharing accruing to farmers in this case will be calculated on more modest profits. Sometimes when crops are used for making high end commercial products, then share of benefits owed to the farming community will have to be calculated differently than when seeds are used for growing standard crops like rice and wheat or maize.

Some years ago, the musk melon crop in California was afflicted by a fungal blight and was on the verge of being wiped out. Also threatened was the huge down stream processing industry based on muskmelons. Almost all the melon germplasm of California comes from India so when the fungus attacked, resistant varieties were taken from India and the musk melon crop along with its down stream industry was saved. A profit worth millions was made on the basis of resistant varieties from India. Benefit sharing with the farming community in India should be done not on the basis of a resistant melon crop but on all the profits made downstream as well.

In the recent development of transgenic crop varieties, the most well known of which is the vitamin enriched 'golden rice', benefit sharing will have to be calculated on yet a different scale than for the usual High Yielding Varieties (HYV). Golden rice has resulted from a rice variety into which pre-vitamin genes have been brought in from daffodils.

After its development in the lab, the Life Science Corporation Astra Zeneca has acquired the complete rights over golden rice for commercialisation in the developed world. Zeneca

rightly believes that there is a large market for golden rice among health conscious western consumers. Its strategy is to market this rice in the affluent north as a nutritionally enhanced food with tremendous health benefits. The volume of profits from a nutraceutical product like this would probably be closer to that of the pharma industry than the seed industry and the benefit sharing arrangement should reflect this. A share of profits must accrue to the farming community from where the rice was taken which was ultimately converted into golden rice.

Other aspects of benefit sharing both for the herbal drug sector and the agriculture sector should include transfer of technology. For example products like resistant melon varieties and golden rice, should be made available to countries where the parent or source varieties originated, without any IPR binding.

Current Examples of Benefit sharing

INBio and E.Merck pharmaceuticals (Costa Rica)

Possibly the first instance of a formal benefit sharing agreement, this deal gave E. Merck, the pharma giant, unrestricted access to the forests of Costa Rica, for bioprospecting. Merck acquired first rights for the very modest sum of 3 million dollars, to explore the biodiversity and develop drugs from promising leads. This agreement has been widely criticised as exploitative. Three million dollars is a paltry sum to pay for accessing what is estimated to be about 4% of the world's biodiversity! What is more, most of the money paid by Merck has been earmarked for conservation efforts so that the 'hunting grounds', as it were, were kept intact. Little in terms of 'real' benefits would accrue to the communities of Costa Rica. The author is firmly opposed to this format of benefit sharing and believes it is an example of how not to engage in benefit sharing.

Arogyapacha and the Kanis (India)

During an ethno-botanical expedition in the tribal region of the Western Ghats in the state of Kerala, a team of scientists encountered the Kani practice of eating seeds of the wild plant *Trichopus zeylanicus*, when they were tired. This gave them energy. The plant locally called 'Arogyapacha', has been used by the Kani tribe for hundreds of years to help them through periods of physical exertion.

Arogyapacha was investigated and finally, a standardized drug based on the Kani knowledge of 'Arogyapacha' was developed. The drug called 'Jeevani' was released for commercial production in 1995. While transferring the technology for production of the drug to a pharmaceutical firm, the scientific institution agreed to share the licence fee on a 50:50 basis. In addition to this, 2 % of royalty from sales go to the tribal community. This model of benefit sharing is far superior to the exploitative arrangement made between INBio in Costa Rica and the E Merck company. At present it is perhaps the only one of its kind where there is a semblance of justice and the tribal community has got a decent share of the benefits derived from using their knowledge.

The DaburNepal – Dabur India model

A joint venture between Dabur Nepal and Dabur-India, which specialize in Ayurvedic The plan, was to involve the community through financial incentives in collection of medicinal plants as also their cultivation. There were two overall objectives:

- To utilise and conserve medicinal plants for the socio-economic development of local people and provide them employment and a source of income;
- To develop an infrastructure for the management, marketing and distribution of threatened and valuable medicinal plants through coordinating the individual enterprises, organizations, and industries involved in production, use and trading of the medicinal plants.

Starting as a purely collection exercise, Dabur discontinued the collection scheme largely in 1999 and began breeding saplings of *Taxus baccata* and other high value plants under pressure from conservationists who objected to collections from the wild.

There were two schemes. One was an initial “pay-back system for collection” and another a “ pay-back system for cultivation”.It was found that even though the cultivation system needed initial investment, the farmers were ready to invest to become a part of the scheme. In the “collection scheme”, the communities were promised some type of guaranteed income based on the tonnage collected from nature.

Other kinds of benefit sharing

Apart from direct payment for collection and supply of the raw material for the herbal drug manufacturers, benefits for communities can be built up in other ways like..

Database access: Communities should be beneficiaries of revenues collected from databases containing IK. The Indian government has started a compilation called the Traditional Knowledge Digital Library, which contains public domain information about important medicinal plants. Similar databases will come up on the basis of biodiversity registers that are documenting the availability and status of bioresources. Database containing information on indigenous knowledge of Adivasi communities, of the kind that Gene Campaign has been documenting, will also need to be set up. All such databases should levy an access fee after proper execution of prior informed consent and material transfer agreements. Part of this access fee should be paid into a Fund for communities.

Bioprospecting and Research fee: Companies who wish to have a license to explore a country's bioresources should be required to pay a prospecting fee which should also go into the Community Fund. Similarly, when research programs are expected to yield commercially interesting results either in the form of financial gain or new technologies, communities should be beneficiaries.

Milestone payments: Would require prospectors to pay a fee for every 'milestone' reached during the research. This is to ensure a benefit to communities if their knowledge has been used, even if the users are not able to commercialize the results.

Gene bank access: Access fees should be paid to obtain genetic material of crop plants, rare varieties, medicinal plants and other economically important plants stored in Gene Banks. Research material should be exempt. This aspect has acquired greater significance now that India has passed Plant Variety and Farmer's rights Act. Under this breeders of new plant varieties (using genetic material from public sources like the gene bank) will get a breeder's right and be entitled to make profits

Transfer of technology and building capacity in the research and development of herbal products

Non monetary benefits: Recognition, awards and bestowing public honour on the holders of knowledge are often more important than monetary gain. This will encourage the local communities to conserve natural resources and traditional knowledge base by keeping their morale high.

Need for awareness about Benefit Sharing

Apart from corporate greed, many times, companies in the herbal products and cosmetics industry are poorly informed of the environmental and social impact of their sourcing strategies. Few have considered the implications of sample collection, and development of new leads from traditional knowledge or species 'new' to the market. Equitable benefit sharing linked to access to resources and knowledge is a concept unfamiliar to most, only a handful of who have heard of the Convention of Biological Diversity (CBD). As a result, benefit-sharing is often viewed as a charitable contribution, a gesture of goodwill, rather than an obligation. Those working for the rights of indigenous people and local communities should have an interest in spreading awareness among industry members. Awareness about the rights of communities and the obligation that companies have, to share benefits with the communities whose knowledge they exploit for commercial gain.

Commercialisation of IK and its dangers

Commercialisation of the peoples' knowledge can be an effective way of generating incomes for them, provided this remains in their control, is sustainable and equitable. It can also prove to be a powerful incentive for communities to retain their knowledge base. Extreme care however needs to be taken to ensure that over-exploitation does not lead to permanently destroying the resource base. There have been glaring examples of this which should sound alarm signals for us. The interest in the Himalayan Yew (*Taxus baccata*) as a source of the anti-cancer drug Taxol has led to the devastation of the Yew forests in Himachal Pradesh in India and other hill regions of Asia.

The challenge to sustainability of commercialisation is to devise incentives that fulfill four conditions

- i) Access to biodiversity for local communities, so as to ensure their sustainable livelihood systems, should take priority over access for outside institutions or individuals;
- ii) Assurance to individual healers or other experts, communities, and other stake holders of sustained access to the resources and viable collective responsibility for using biodiversity;
- iii) Blending traditional skills/ abilities to convert biodiversity resources into investments with or without value addition and,
- iv) Conservation of cultural lifestyles and value systems in such a manner that basic needs are met without impairing the life support systems of local communities.

Kava (*Piper methysticum*)

The case of kava highlights many of the potential benefits and risks involved in the marketing of species 'new' to international consumers, and the ways in which the botanical medicine industry can generate benefits for communities and countries upon whose knowledge and resources commercial markets are based.

Kava (*Piper methysticum*), a plant endemic to the South Pacific has been traditionally used to alleviate stress and anxiety in the region. It is supposed to have other medicinal uses, like for skin ailments and for asthma and tuberculosis. In the Pacific region, farmers have transformed it into a cultivated species and have bred improved varieties.

In the last decade, kava has entered the western market. Most high-quality bulk ingredient supply companies have acquired an interest in it. These companies are chiefly from Germany, Switzerland, UK and the USA. This has led to an explosion in demand for kava products that have placed unsustainable pressure on supply sources geared only to serve local use. Although local farmers are benefiting from price increases, the types of commercial relationships they arrange with international buyers might not be to their long-term advantage.

Chief Josetika Nawalowalo, chairman of the National Kava Council established in 1998 to protect the kava industry says "We've had fly-by-nights from overseas negotiating directly with farmers and it's a dangerous trend, our people are not educated to deal with multinational companies'. He recommends that the government regulate the kava industry, projected at US\$100 million in Fiji in the year 2,000, in order to protect local farmers" . There is concern that unregulated access to kava will deplete the base , starting with collecting immature kava , thus jeopardising the quality of the medicinal product. This is starting to happen.²¹

Panax vietnamensis:

Panax vietnamensis is a variety of ginseng found to be endemic to a region of Vietnam where it is used traditionally and is cultivated there for local markets. *Panax vietnamensis* was 'discovered' by scientists in 1973 during a botanical expedition in the montane forests of Central Vietnam. The *Panax* genus occurs in the Northern Hemisphere from the Central Himalayas to North America and through China, Korea and Japan. *Panax ginseng*

varieties are widely used in botanical medicines across the globe. *P vietnamensis* has long been used by the Sedang ethnic group living in the Truong Son Range, and is known as 'Cu Ngai Rom Con'. It is used locally as a secret life-saving medicine for the treatment of a range of diseases and to enhance physical strength.

Nature's Way, a herbal company first came upon the use of this species by scanning databases and conducting literature searches, and discovered interesting activity documented in studies conducted in Russia, Poland and Japan. The company worked with contacts in Vietnam to develop a direct research and sourcing relationship and is involved in the full scale commercialisation of this ginseng variety.

The result has been a serious threat to the population of *Panax*, which was already under stress due to demand for local medicinal use and deforestation during the war. (Minh Duc and Thoi Nham, 1998). *Panax vietnamensis* is now included in the *Red Book of Plants for Vietnam* which lists 250 rare, threatened, and endangered medicinal botanicals.²²

Making commercialization sustainable

In order to ensure long term gains to the indigenous communities and prevent over-harvesting, sustainability should be built in at several levels.

- ◆ *Conservation*. Although in situ conservation is the best form of conservation, we will have to undertake a consolidated approach with in situ and ex situ conservation in the form of Protected Areas, Sacred Groves and Gene Banks. *Ex situ* conservation is needed for long term preservation of the species and also to avoid the risk of extinction from its natural habitat.
- ◆ *Generating Awareness* about the importance and need for sustainable use. Conservation can not be realised without the active participation of the communities involved in the use of these bioresources for their livelihoods. These people must be convinced about the importance of the sustainable use of their resources.
- ◆ *Changing policy for collections* so that these are with the consent and participation of communities and accountable to national agencies like the Biodiversity Authorities. Restrictions should be imposed on commercially exploiting the resources which may be detrimental to the interests of the local communities. A monitoring mechanism for the collection of these resources should be instituted.
- ◆ *Training in sustainable harvesting*. People who collect material from the wild should be trained to collect the plant parts needed in a way that the plant remains viable after the collection and can continue to grow. Unless the part required is the root, leaves, fruits, flowers and bark and gums and resins can be collected so as not to destroy the plant. This is particularly important for plant species which are endemic or the populations of which are fast depleting.
- ◆ *Value addition*. Local communities should be trained to do simple first and second degree processing to add value. Cleaning, sorting and selecting the material, sun or shade drying, cutting and powdering are examples of the simple procedures that will add value to the product and increase incomes from the same volume of collection. This will decrease the dependence of communities on large volumes in order to earn a reasonable amount. This is important not only for improving the economic condition of the communities but also to ensure the optimum utilization of the plant and plant parts.

- ◆ *Cultivation of medicinal plants.* There should be a policy that for large scale commercial use, as engaged in by the industry, both for domestic use as also for export, medicinal and aromatic plants as well as other commercially important plants , should be only from cultivated sources, not natural collections. An aggressive strategy involving NGOs, universities and research institutes should assist the industry to develop agro-technology packets for medicinal plants of interest. The industry should be required to invest in this development since they are the principal beneficiaries. Natural collections should be allowed only for local communities and traditional healers and for research, documentation and archival purposes. Collection of these plant and plant parts from wild sources would lead to destruction of their natural habitats.
- ◆ *A clear -cut IPR policy.* A clear cut policy on Intellectual Property Rights is needed with respect to herbal products and their trade. The IPR policy will have to contain elements of transparency, sustainability, benefit sharing and legal protection. The need for a low transaction cost system of intellectual property protection for IK is obvious and yet most global dialogues on intellectual property rights have not yet embarked upon such a system.
- ◆ *Monitoring* the health of natural populations and ecosystems and the status of frequently used species is important to check. This monitoring can be done through the people's elected representatives, NGOs and students, scientific and government institutions, and structures like the State and National Biodiversity Boards, where such exist.

State support for commercialization of IK

1. In India, governments at national and state level have provided incentives and infra-structural support for the production and marketing of products derived from IK. The Central Cottage Industries, a showcase of textiles and handicrafts from all regions of India is a highly popular place for domestic buyers and tourists and exports large volumes of high quality products. There are handicraft and folklore outlets of every single state located in Delhi. These state Emporia, like the Central Cottage Industries Emporium, are active hubs for the selling of traditional arts and crafts.
2. New initiative are being taken to incorporate indigenous skills, designs and motifs into products for the international market. Anew initiative supported by the UNDP has led to a whole new range of carpet designs based on India's 5000 year cultural heritage. Based on Indian Architecture, textiles. Jewlery and paintings, these carpets are woven with designs based on the folk art of regions. These include the Mandanas of Rajasthan, Warlis and Rangolis of Maharastra, Kolam of South India, Alpona and Ariapan of Bengal and Bihar and Chowkpurna of Uttar Pradesh.
3. The textile, carpet and handloom sectors are reviving the art of vegetable dyes on a large scale. Using plants and minerals for dyeing has a long and continuous tradition in India. This tradition became marginalised after the advent of chemical dyes but it never disappeared since it continued to be used in the handloom sector as also in handicrafts, specially those like the Kalamkari paintings of Andhra Pradesh and the Picchwai paintings of Nathdwara. Vegetable dyes are enjoying a revival. In fact, after the ban on the use of Azo dyes for fear of their being carcinogenic , international policy should seriously think if a worldwide ban on chemical dyes and establish the use of vegetable dyes in its place.

4. The Khadi Gramodyog Bhawans, which are a network of sales outlets across India, are run by the Khadi Village Industries Commission(KVIC). Khadi is the handspun cotton adopted by Mahatma Gandhi as the symbol of India's determination to be independent and self reliant. The KVIC sells handspun cotton , silk and woolen materials and all manners of products produced in the villages of India. These include honey collected by Adivasis, sandalwood oil, Agarbattis(incense sticks) made from the fragrant Agar wood of the North East, wild silk, objects made from lac collected from the forest and hundreds of kinds of craft objects. The KVIC perhaps more even than the national and state handicraft emporia, is a demonstration of India's commitment to preserving its indigenous knowledge base by providing markets for it in the country and outside.

Steps to increase commercialization and range of benefits

1. Standardization and quality control:

Herbal products and medicines can command better prices in international markets if portions and formulations are standardized and quality of the components is ensured. As against the fresh preparations dispensed in classical Ayurveda or the fresh preparations of biopesticides, the urban market will require products to have a longer shelf life. The patent taken out by WR Grace, subsequently challenged, on a Neem based biopesticide was to increase the shelf life of the product so it could retain its viability for a longer period. Value addition in the form of better processing and slick packaging can increase the reach and durability of the product as also increase incomes for the communities.

Another good strategy for increasing the commercial scope of products is to analyse their relevance for current health concerns. For example, traditional products, which are known to suppress appetite and reduce weight, could be marketed successfully as 'weight loss' formulations. Phytolaca is one such plant known in homeopathy. The importance of aromatic oils and herbal teas as stress busters are beginning to find urban clients in this grossly stressed out world.

2.Create new markets and market niches

1. Indigenous knowledge in different societies has a potential range of products that lend themselves for a different kind of marketing and therefore of better incomes for the holders of that knowledge.
2. Take vegetable dyes. India could revive its ancient tradition to provide a natural substitute for chemical dyes. This possibility comes into sharp focus after the ban imposed on the Azo group of textile dyes since they were thought to be potentially carcinogenic. This is the kind of opportunity that should be exploited to create a new market for an indigenous product or skill. There are some efforts underway to revive vegetable dyes in a serious way. Some agencies have prepared a list of dye bearing plants as known in indigenous tradition and the UP Handloom Corporation is making efforts to extract and market pigments derived from dye sources.

3. Apply modern designs to traditional materials and crafts.

1. There is a sophisticated repertoire of skills, designs and knowledge of materials within communities. These are used to make objects of utility and decoration for daily use

adapted to the lifestyles and dwellings of rural and Adivasi people. If these skills and materials could be meshed with modern design, then products made from these could reach a large and international market. A case in point are the baskets woven in Zimbabwe and Rwanda which have found appreciative western audiences and sell for good money.

2. In India, bamboo, palm leaf, wheat stalk, reeds and other plants are used to make several objects including furniture. 'Moonj', a rope woven from grass of that name is used to weave Charpais (bed) and Machias which are low stools used by the women for cooking and household works. These materials and craft skills can be designed to create utility objects for the home and modern furniture for a vast middle class.

Modes of legal Protection for the Intellectual Property of communities

There is a lot of debate on the systems of protection that can be adopted to provide legal protection to the intellectual property of indigenous people and communities. Most of these discussions have tried to adapt the existing forms of IPRs like patents, trade secrets, copyrights etc. to the field of IK and bioresources. This is not going to work because of the inherent mismatch between the protection that was created for finite, inanimate objects coming out of industrial activity and the flowing, mutable and variable properties of biological materials.

With respect to indigenous knowledge, how can a patent, with its life of 20 years be applied to an intellectual property that has existed for a few hundred if not a few thousand years ! As for copyrights, case law shows that copyrights are not adequate to protect IK. Courts have ruled that the idea is not important, just the mode of expression of the idea and that even if the defendant in a suit has used a common stock of knowledge, no action can be brought.

Some form of Trademarks or Certification (Authentication) Marks however lend themselves to the protection of IK. Products of tribal communities can be given a Mark certifying it as genuine. This form of protection could be easily applied to textiles and tapestries. For biological materials which in a lot of ways are the centre of controversy and around which spins a multi-million dollar industry, some sui generis forms need to be developed.

The lead in this case has already been provided by the Convention on Biological Diversity (CBD). Of special relevance are Articles 8(j), 15 and 16. These deal with rights of communities, benefit sharing and transfer of technology specifically.

In order to protect IK, national legislation in each country should compulsorily require the following conditions:

- Disclosure of origin of materials or knowledge used. For example, the use of a farmer variety in breeding a new variety; use of a medicinal or aromatic plant to make products or extracting vegetable dyes from certain minerals and plants.
- Evidence of Prior Informed Consent (in standard format) before using the bioresource.
- Evidence (in standard format) of the nature (monetary, non-monetary) mode and method of sharing benefits derived from using IK.

It needs to be kept in mind that the range of benefit sharing will vary from sector to sector. Benefits in the pharma and herbal sector will be high compared to agriculture where profits will not be of the same scale and share of benefits will be more modest.

- Applications for use of IK should be published in all major newspapers, specially the vernacular press.
- Proof of IK will be entertained in both written and oral form and in the form of community knowledge conveyed by third parties.
- The onus of proving compliance (burden of proof) should be reversed. In the case of a dispute, the user agency will be required to prove that all conditions of disclosure and benefit sharing have been met.
- The penalty for infringement should be severe enough to be an effective deterrent.
- Access to bioresources should be linked to the provisions of Article 16 of the CBD relating to transfer of technology. The Material Transfer Agreement needed for access to bioresources should be linked to an agreement to transfer technologies in various categories related to biodiversity, including biotechnology.

Only a few countries have begun to address the conceptual and operational problems involved in the recognition of communities' rights over their knowledge. The exceptions are countries like the Philippines and the Andean Pact which require the community's consent to provide access to genetic resources found in their territories. The Philippines Executive Order No. 247, and the Andean Pact's Common System on Access to Genetic Resources empower the communities to participate in the process of admission of access requests, but do not create any type of rights in the knowledge or materials under the communities' control. There is no conflict, hence, with existing IPRS, or with the TRIPs Agreement.

The Thai draft bill would recognize rights of traditional healers and medicinal natural resources. The draft is based on the concept of 'collective rights' and includes the registration of traditional medicines and some form of benefit sharing in cases where medical or scientific researchers make commercial use of the protected knowledge. This proposal was challenged by the United States Government even though creating a new mode of protection for indigenous/local communities, does not violate any international convention, including the TRIPs Agreement.

The Indian draft bill on Plant Variety Protection and Farmers Rights gives recognition to the knowledge of farming communities and requires this knowledge to be both protected as also paid for. In the draft Biological Diversity bill similarly, the rights of local communities are acknowledged and provisions made for sharing benefits with local communities. Prior informed consent is needed to access community knowledge and resources.

Proposed Traditional Knowledge Bill (India)

In India, there is some thinking on a draft bill specifically for traditional knowledge. A 'Traditional Knowledge (Preservation and Protection) Bill has been drafted by NS Gopalakrishnan. This provides a Community Traditional Knowledge Trust to be established at the Panchayat, District, State and National level. Ownership of traditional knowledge will vest with the respective Trust. The functions of the Trusts are to preserve, promote, document, and conduct research on traditional knowledge, as also to create units for commercial exploitation.

Proposed National Body for Traditional Knowledge (India)

The concept of a National Gene Fund or the National Biodiversity Authority, as contained in the draft Plant Variety Protection and Farmers Rights Act and the draft Biodiversity Act respectively, can be expanded to include functions that will protect the rights of communities still further and facilitate income generation for them. There are ongoing discussions between Gene Campaign and legal experts, to craft the structure of a kind of 'National Body' (name still to be decided!) To which communities will assign their rights.

This Body will have the following functions:

- To monitor use of IK and collect revenues on behalf of the communities.
- To implement the rights of communities, to enforce compliance with guidelines and to chase and prosecute violators.

Since local communities are unprepared to deal with the new developments relating to their resources and their knowledge, such a structure would act on their behalf and secure their interests. An added advantage of such a National Body would be to provide a kind of 'single window' system with which outsiders can deal if they want to access IK and bioresources from a community or country. This would help to regulate access to bioresources and cut down biopiracy and make the system of access and benefit sharing transparent.

Capacity Building as a means of protecting IK

Capacity building is an important component of long term conservation of bioresources and equity in the subject of IK. Local communities do not have the knowledge or the means to safeguard their property in a system, which has its origins in very different cultural values and attitudes. Communities have wealth of knowledge about their flora and fauna, their habitats, ecosystems and properties. It is only logical and in consonance with natural justice that their rights over their property be recognised and they get a major say, as a matter of right, in all matters regarding the research, extraction and commercialisation of biodiversity. We need to put in place a policy that promotes the advancement of knowledge and sustainable use but which first protects the Intellectual Property of communities and ensures just benefit sharing.

Policy on IK must include training and technology to enable value addition to this knowledge so that more efficient and sustainable use of bioresources can yield higher incomes for communities. National and international commitments are needed to achieve this goal. There is a need for providing institutional support to enhance technical competence and self reliance of these innovators, through various kinds of partnerships like public- private partnerships and establishment of promotion funds.

The core problem of IK protection

The real problem of protecting IK is the refusal of the developed countries to formally recognise IK and pay for its use. There is therefore a fundamental lack of parity between IK and IPR treaties at the international level.

The subject of Intellectual Property rights in the formal sector has been set out in a series of international agreements, all of them legally binding and enforceable. Some like the

WTO force compliance with the threat of trade sanctions. In the case of protecting indigenous knowledge, most treaties are non binding and can not be enforced. Every clause that deals with benefit sharing is contested and refused. ILO Convention No 169 which says a lot about legal standards for indigenous rights fails to protect the IPR of indigenous people. Whereas the UN Declaration on the rights of IP recognises the rights and aspirations of the IP, it will be a non- binding document which can not be legally enforced.

In the International Undertaking on Plant Genetic Resources (IUPGR), developed nations have successfully blocked an international recognition of Farmers Rights for the last 12 years. They also contest any notion of paying for the use of traditional germplasm in a benefit sharing arrangement. The CBD which has attempted to push through the interests of Indigenous Communities has been thwarted by the American refusal to ratify it and accept its conditions. In the CBD, the most contentious and so far unaccepted Article is Article 16 which deals with transferring technology as part of the deal to use the IK and biodiversity of local communities in different countries.

Need for international action to protect IK

It is clear that national level action can not be adequate to protect IK. Despite a strong position on Farmers rights in national legislation, if the IUPGR can not reach an international understanding on Farmers rights, traditional materials of farmers will continue to be pirated by western users and the farmers will receive no benefits. In the same way, even if national legislation in developing countries provides for the protection of communities and their IK and the US carries on granting patents on Turmeric, Neem and Basmati, then the rights of communities will continue to be violated. Far from receiving any benefits for the use of their knowledge, they will lose any future options they might have, to develop it commercially for themselves. So, any serious and genuine effort to acknowledge the contribution of Indigenous People and play fair with them, will also have to be at the international level..

Some suggestions for action at the international level:

1. Implement sincerely the relevant provisions of the international commitments like the ILO Convention, the IUPGR, the UNESCO/WIPO Guidelines for Protection of Folklore, the UN Draft Declaration on the Rights of Indigenous Peoples and the CBD.
2. Remove Article 27.3.b from WTO/TRIPS which deals with patentable subject matter applying to biological materials. To start with, retract the demand for patents on life forms.
3. Do not remove the flexibility of countries to draft their own sui generis legislation for plant varieties by now insisting on compliance with UPOV. This flexibility is part of the WTO agreement.
4. Apply Article 29 of TRIPs which requires disclosure in the case of patent applications, to genetic resources and traditional knowledge used in inventions for which IPRs are claimed.

5. In the Convention on Biological Diversity (CBD), give primacy to conservation since that is what will conserve the basis of IK and continue to provide livelihoods and value addition opportunities to communities.
6. In the CBD, link Articles 8(j), 15 and 16 , dealing with the rights of communities over biodiversity and their right to share in the benefits of its use, as also 20 and 21, (providing finances to implement the CBD) in all discussions relating to *access* to bioresources.
7. Use all possible national measures to strengthen the Biosafety Protocol to prevent contamination of genetic resources, till science can demonstrate safety of GM foods.
8. Enhance the scope of Article 23 of TRIPs which is concerned with providing protection to special products associated with a special geographic region to include products like Basmati rice, Darjeeling tea. Article 23 is so far applied only to wines and spirits.
9. Ensure that any agreement on databases like the proposed Database Treaty recognises the ownership of communities and includes provisions for Prior Informed Consent (PIC), Material Transfer Agreement (MTA) and benefit sharing when granting access.

Appendix: 1

The different Declarations and treaties made on Indigenous peoples.

1. Declaration of Principles of The World Council of Indigenous Peoples
Ratified by the IV General Assembly of the World Council of Indigenous Peoples.
2. Charter of The Indigenous-Tribal Peoples of The Tropical Forests.
Malaysia, 1992
3. The Kari-Oca Declaration
The World Conference of Indigenous Peoples on Territory, Environment and Development. Brazil, 1992.
4. The Indigenous Peoples' Earth Charter
5. The Mataatua Declaration on The Cultural And Intellectual Property Rights of Indigenous Peoples
New Zealand, 1993.
6. Recommendations From The Conference 'Voices of The Earth: Indigenous Peoples, New Partners and the Right To self-determination In Practice
Netherlands, 1993
7. Julayinbul Statement on Indigenous Intellectual Property Rights
Australia, 1993
8. Declaration of The International Meeting Around The First World Gathering of Elders And Wise Persons of Diverse Indigenous Traditions
Bolivia, 1994

9. Statement from the COICA/UNDP Regional Meeting on Intellectual Property Rights and Biodiversity
Bolivia, 1994

10. UNDP Asian Consultation Workshop on The Protection And Conservation of Indigenous Knowledge
Sabah, Malaysia, 1995

11. Declaracion De Jujuy
Argentina, 1995

12. Final Statement From The UNDP Consultation on Indigenous Peoples' Knowledge And Intellectual Property Rights
Fiji, 1995

13. *Charter of 'Farmers Rights'*
India, 1997

14. Statement from Indigenous Peoples Participating At The Fourth Session of The Commission on Sustainable Development (CSD-4)
New York, 1996

15. Declaration of the Consultation Meeting 'Indigenous Peoples, Mother Earth And Spirituality
Costa Rica 1996

16. The Leticia Declaration and Proposals For Action
Colombia 1996.

17. International Workshop on Indigenous Peoples and Development (Ollantaytambo)
Peru, 1997.

18. UN Draft Declaration on the Rights of Indigenous Peoples
1993.

19. Principles and Guidelines For The Protection of The Heritage of Indigenous Peoples
1995

20. Indigenous Peoples and Knowledge of The Forest

Contribution submitted by the International Alliance of the Indigenous-Tribal Peoples of the Tropical Forests to the Intergovernmental Panel on Forests .Geneva, 1996.

