



Common Voices

Issue 7

Knowledge: Beyond Dichotomies

Linguistic Diversity in the Knowledge Commons

The Loss of Ecological Knowledge

Stewarding the Commons: Biocultural Rights

Traditional Knowledge and 'Commons' Sense

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Cover Illustration:

Illustration from *Hortus Malabaricus*, a comprehensive treatise in Latin on the plant wealth found in modern day Kerala, compiled by the Dutch Governor of Malabar Hendrik van Rheede with inputs from a large number of local physicians over a period of nearly 30 years and published during 1678-1693.

Cover representation created by Arjun Shankar (www.arjunashankar.com)

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Editorial

A few months ago, on a field trip across the Andaman islands, a friend introduced us to a large number of local fishermen. The islands are dotted with settler communities: the Telugu fishermen who largely fish the open sea, settlers from Bengal and Bangladesh who fish for crabs and mangrove fish, and the Karen from Burma—inveterate shell divers, spear fishermen, dugout makers and jacks-of-all-trades. Using technology that predates recorded history, the indigenous Jarawa and the Sentinelese also fish and forage off the reefs. As do the fishermen in the Nicobari ‘tuhets’—joint family groups that manage the islands’ resources based on customary systems. From across the sea, fishermen from Burma, Indonesia and mainland India also frequent the waters off the islands: each using different technologies and techniques of fishing for sea cucumbers, tuna, groupers and sharks. We witnessed a seascape inhabited by a diversity of knowledges and technologies, both ‘traditional’ and ‘modern’, indigenous and adaptive, each one employed to learn, control and harvest the treasures of the sea.

In this issue of *Common Voices*, we bring you a variety of perspectives on the knowledge possessed by local communities and their relevance to the commons. We begin with a summary of existing debates surrounding traditional and scientific knowledge and the problems involved in dichotomising them. Our editorial contributions also include a discussion on the drivers of loss of traditional ecological knowledge systems as well as an example from the fisheries sector. Among invited perspectives, A. Giridhar Rao traces the role of linguistic diversity in the knowledge commons. Following an editorial article outlining traditional knowledge in the context of intellectual property rights, Shalini Bhutani and Kanchi Kohli further discuss these issues with respect to India’s legal instruments that can impact the knowledge commons. Sanjay Kabir Bavikatte traces the discourse on stewardship of traditional knowledge in the commons and the development of biocultural protocols by local communities to protect and share their knowledge. Venkatesh Hariharan’s commentary as a software professional explores issues around intellectual property, privatisation and patenting.

To do justice to the complex subject of traditional knowledge and its significance to the commons, we are delighted to present to you articles which are comprehensive and significantly longer than earlier issues. We hope that you enjoy them and we welcome feedback and comments.



Perspectives on Knowledge...

Going Beyond Dichotomies

O*nce viewed as an inferior form of knowledge, with little potential to contribute to development, traditional and indigenous knowledge is finding increasing mention in the development discourse. This turnaround has been partly due to the failure of large-scale, state sponsored development agendas, and the search for solutions that are more grounded in place, time and context.*

In this respect, the knowledge and practices of indigenous communities, minority groups and marginalised peoples are being promoted as solutions that are practical, sustainable and alternative to what has been commonly considered as scientific solutions and technological fixes derived from Western science. Local practices, lifestyles and governance systems of communities who use the commons and common property resources are often labelled as falling under the traditional realm of knowledge. Pastoral governance systems that regulate stocking and migration, local agricultural practices, communal water management, and the rituals and seasonal taboos of communities that practice hunting are examples.

While the resurgence and renewed acceptance of traditional systems is long overdue and a welcome move, in order to be effective in any fashion, it is important to understand the challenges associated with dichotomising knowledge as traditional vs. 'scientific'. To many, the contrasts between traditional knowledge and scientific knowledge seem obvious. Wikipedia's description of science and traditional knowledge is a good example of such widespread thinking which considers science as a separate entity from traditional knowledge:

Science (from [Latin](#) *scientia*, meaning "knowledge") is a systematic enterprise that builds and organizes [knowledge](#) in the form of testable [explanations](#) and [predictions](#) about the [universe](#).^[1] An older and closely related meaning still in use today is that found for example in [Aristotle](#), whereby "science" refers to the body of reliable knowledge itself, of the type that can be logically and [rationally](#) explained.

(Source: <http://en.wikipedia.org/wiki/Science>. Accessed on January 6, 2012.)

Whereas,

Traditional knowledge (TK), **indigenous knowledge** (IK), **traditional environmental knowledge** (TEK) and **local knowledge** generally refer to the long-standing [traditions](#) and practices of certain [regional](#), [indigenous](#), or local [communities](#). Traditional knowledge also

encompasses the [wisdom](#), knowledge, and teachings of these communities. In many cases, traditional knowledge has been [orally passed](#) for generations from person to person. Some forms of traditional knowledge are expressed through [stories](#), [legends](#), [folklore](#), [rituals](#), [songs](#), and even [laws](#). Other forms of traditional knowledge are expressed through different means.

(Source: http://en.wikipedia.org/wiki/Traditional_knowledge. Accessed on January 6, 2012.)

The above two descriptions are very different from each other, with emphasis on dissimilar keywords. Words and phrases such as testable explanations, prediction, reliability, logic and rationality, which characterise the description of science, are absent from that of traditional knowledge which includes tradition, wisdom, stories, legends, folklore, etc. The divide between science and traditional knowledge is not the only dichotomy in popular perception. Many others can be listed. For example, Western science vs. that of Oriental civilisations, modern vs. traditional, primitive vs. civilised, and numerous others. In the current scheme of things, all or most of our views and assumptions also tend to place modern science as a largely Western contribution.

In popular perceptions and scholarly discourses on the differences between indigenous/traditional and Western/scientific knowledge, the attempt has been made to understand if there are at all clear cut differences. For example, in *The Savage Mind*, Claude Levi-Strauss attempts a comparison of two modes of thought towards gaining knowledge. Using the comparison of the bricoleur and the engineer, he outlines two stages of development of thought. The first—mythical thought—alludes to activities carried out by a handy-man who works with his hands, carries out a variety of odd-jobs, improvises to make do with what is available without recourse to concepts. The engineer, on the other hand, is presented as a person dealing with concepts and structure. Though these metaphors are used to characterise 'primitive' and 'modern' societies, Levi-Strauss does not intend one to be supercilious to the other, and the notion is a good one to explain the dichotomy between a 'savage mind'

and a 'scientific mind'. More recently, looking at traditional ecological knowledge (TEK), Fikret Berkes for example, lists some substantial ways in which TEK differs from scientific ecological knowledge. According to him, TEK is mainly qualitative (as opposed to quantitative), has an intuitive component (as opposed to being purely rational), is holistic (as opposed to reductionist), considers mind and matter together (as opposed to a separation of mind and matter), is moral (as opposed to supposedly value-free), is spiritual (as opposed to mechanistic), is based on empirical observations and accumulation of facts by trial-and-error (as opposed to experimentation and systematic, deliberate accumulation of fact), is based on data generated by resource users themselves (as opposed to that by a specialised cadre of researchers), and is based on diachronic data, i.e., long time-series on information on one locality (as opposed to synchronic data, i.e., short time-series over a large area).

However, despite extensive attempts, these differences (and similarities) remain difficult to pinpoint along multiple dimensions or along a finite set of measurements. Berkes himself cautions the reader to be aware of the exceptions to the generalisations. These and other investigations that have been carried out try to characterise the dichotomy based on three broad categories: substantive, methodological, and contextual. Substantive differences allude to differences in the subject matter that is dealt with. Western knowledge and modern science are assumed to deal more with abstract ideas, general explanations and philosophies, whereas traditional systems presumably deal with the day to day business of living. However, a closer look reveals that this type of distinction is difficult to substantiate as there are hardly any aspects of daily life in the West which are devoid of applications of general principles and abstract science.

Similarly, one can think of any number of traditional systems which go beyond devising solutions to everyday problems. At a more fundamental level, humans, regardless of which part of the world they live in, are intrinsically the same and are surely capable of abstract and logical thought regardless of their geographical and contextual situations. The argument that these systems employ different methods of understanding also doesn't hold water when we examine this along generic lines. The methodological characterisation of science as experimentation and observation (considered to be a hallmark of modern science) can be extended to include the practices of local communities which involve continual trial and error, observation of outcomes, and ultimately modification, adaptation and change. The argument that traditional knowledge is more rooted in context is often juxtaposed with the universal applicability of technological solutions put forward by modern science. However, if we look at the variety of technologically oriented solutions that have failed, we realise that these too are embedded in the social and political contexts in which they work. Characterisations along a number of other angles have also been attempted. Notable among these is the insistence from some quarters that practices stemming from traditional knowledge are always environmentally sustainable; however, we also have a large number of instances where modern science has dealt admirably with contemporary environmental challenges. Another bone of contention is about the value and respect that practitioners accord their own knowledge. While it is assumed that scientists and researchers proudly take advantage of their position in their communities, local practitioners are embarrassed by their knowledge and consider it lacking. Sociological studies however, reveal otherwise: a range of attitudes—positive, negative and neutral—may exist and be expressed by both sides. To summarise, for every example of

Photo credit: Mark Katzman



characterisation of traditional knowledge using a particular variable or dimension, there seem to be many counterexamples from modern science and vice versa.

Again, there is the additional question of culture, blurred boundaries and shared histories, as science is not a culturally disembodied form of knowledge. Western science and traditional systems have not developed in vacuums or in contexts exclusive of each other either. Interactions spanning a few centuries have been recorded among many cultures of the Americas, Asia and Europe. These interactions—ranging from intermittent to frequent contact, communication and exchange—also make it difficult to attribute separate evolutionary pathways for different types of knowledge. For instance, Archimedes, often held up as a shining example of Western science and invention, is believed to have been influenced by the knowledge systems of Egypt and Asia. The treatise *Hortus Malabaricus*, which describes the medicinal plant wealth of the Malabar coast, is considered to be a collaboration of sorts (albeit an unequal one) between local physicians and the Dutch colonial authorities. Similarly, historical examples of exchange and influence between and within the West and the East abound in the fields of art, sculpture and engineering, in which either one or both have benefited.

Critics caution that creating such a divide, i.e., separating traditional knowledge from modern science, could in itself be problematic. The focus on traditional knowledge has been well intentioned and has without doubt brought some of these issues into the international development arena. However, by creating such a dichotomy, we are acknowledging that the two are indeed different, regardless of the limited evidence in support of this division. It could be argued that such a demarcation could reinforce the tendency to place modern science on a pedestal and undermine the knowledge of indigenous, poor and marginalised communities. In other words, by insisting on treating them as different, we are only reinforcing hierarchies and abetting compartmentalisation. Critics also point out that *ex-situ* measures, which are often the only solutions adopted to preserve these forms of knowledge, are not the most effective ways of empowering the knowledge givers; rather, they are the most convenient solutions. The preservation of traditional knowledge in centralised facilities and clearinghouses without context, dynamism or milieu in which it is developed is likely to promote obsolescence and museumisation. Archiving without appropriate safeguards is also likely to resurrect barriers for those without the power to access such knowledge and bring it under the control of elites. Most critically, such scenarios warrant the adoption of effective *in-situ* strategies that interlink the interests of the knowledge givers in terms of power, control and autonomy. This would entail a much greater degree of political engagement—working at various levels to facilitate self-determination for marginalised local communities and developing policies that

safeguard their rights and roles in the development process.

The intent here is not to add to the already voluminous literature on these issues or to polarise the debate further. Rather, this article is a call for introspection about the perceived dichotomies between traditional knowledge and Western 'science' and the enormous power differentials that are a consequence of these dichotomies. It is also a call to recognise the complexities surrounding them and to move beyond these worldviews to devise a more inclusive paradigm of knowledge. This learning process which would bring together communities with multiple viewpoints would be beneficial from the perspective of a 'symmetry of ignorance' and an opportunity for creativity. The learning generated during such processes could be employed to develop the possibilities associated with different knowledges, to strengthen the position of indigenous peoples and local communities and facilitate appropriate shifts in power. The differentials in power are even more exacerbated when we look at communities who are sustained by the commons and common property resources. Historically, it has been the marginalised and the poor who have been most dependent on the commons. In countries such as India, the situation is further complicated by factors such as colonialism as well as enclosure by the post-independence state, where these hierarchies are even more drastic. The revival of these knowledge systems needs to be accompanied by political engagement and empowerment.

The ideas for this article are drawn from various sources including:

Agrawal, A. 1995. Dismantling the divide between indigenous and scientific knowledge. *Development and Change* 26: 413–439.

Berkes, F. 1993. Traditional ecological knowledge in perspective. In: *Traditional Ecological Knowledge: Concepts and cases* (ed. Inglis, J.T.). Pp. 1–9. Ottawa: International Program on Traditional Ecological Knowledge and International Development Centre.

Levi-Strauss, C. 1962. *La pensée sauvage* (*The savage mind*). Paris: Plon.

Nader, L. (ed.). 1996. *Naked science: Anthropological inquiry into boundaries, power, and knowledge*. New York, NY: Routledge.

Rittel, H. 1984. Second-generation design methods. In: *Developments in design methodology* (ed. Cross, N.). Pp. 317–327. New York, NY: John Wiley & Sons.

Sillitoe, P. (ed.). 2007. *Local science vs. global science: Approaches to indigenous knowledge in international development*. New York, NY: Berghahn Books.

Linguistic Diversity in the Knowledge Commons



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Indigenous languages encode a considerable amount of traditional environmental knowledge—knowledge about biodiversity management. As Ganesh Devy (2012) wisely says: “To keep the Earth going, we must keep the languages of the Earth going.” Thus, from even a purely instrumental point of view (setting aside ethical and rights-based considerations), indigenous languages need to flourish.

How serious is the situation of indigenous languages? What are some of the major reasons why languages become endangered? And what can be done about it? These are some of the questions this essay will address, largely from the Indian experience (Rao 2010a).

The database 'Ethnologue' lists in its 2009 edition 6,909 languages (Lewis 2009). Africa has 30.5% of these languages, the Americas 14.4%, Asia has 33.6%, and Europe has 3.4%. Nearly 6% of these languages have more than 1 million native speakers each. These big languages account for 94% of the world's population.

A similar picture obtains in India. Ethnologue lists 452 languages for India, 438 of which are "living". Researcher Annamalai (2006) estimates that India has about 200 grammatically distinct languages. Around three-quarters of the population speak Indo-Aryan languages (derived from Sanskrit), around 20% speak Dravidian languages, and the rest speak languages of the Austroasiatic, Tibeto-Burman, and Andamanese families. At least 10 scripts are used in the country. Besides, India has 22 "official" languages (plus English as the "Associate official language"). These 22 languages "cover" over 96% of the speakers; all other languages are spoken by less than 4% of the population. But even 4% is large in a country with more than a billion people: thus, many minority languages have more than a million speakers; for example, the indigenous language Bhili is spoken by nearly 9.6 million people (GOI n.d.a). But as we shall see below, estimates of numbers of speakers are often problematic. (See also Skutnabb-Kangas 2000, Chapter 1, for a discussion on the problems with various estimates.)

Most of these "small" languages are endemic to a single country. Indeed, David Harmon (1995) estimates that 80–85% of the world's languages are indigenous ones. On another estimate, at least 4,500 of the world's spoken languages are indigenous (Ovideo & Maffi 2000). As Ethnologue notes, there is a huge difference between the mean and median number of speakers of the world's languages—862,600 versus 7,600; half the world's languages have fewer than 10,000 speakers.

A further fact about the distribution of these small languages is that areas of high linguistic diversity are often areas also of high biodiversity. This has led to the notion of "biocultural diversity" which "comprises the diversity of life in all of its manifestations: biological, cultural, and linguistic, which are interrelated (and possibly coevolved) within a complex socio-ecological adaptive system" (Maffi 2007: 269). In the context of the knowledge commons, it is this eroding biocultural diversity that needs addressing.

How badly are indigenous languages doing?

A large amount of qualitative evidence points to an impending mass extinction of languages. The quality of this evidence ranges from merely anecdotal to very accurate narrative accounts based on firsthand knowledge of the language demographics of individual speech communities. It is a highly valuable body of

evidence, leaving no room to doubt that the entirety of the world's languages—not just their number, but also the linguistic and cultural diversity they represent—is being severely diminished. For a host of complex reasons, people are abandoning their mother tongues and switching to other languages, almost always ones with larger numbers of speakers; thereby, more and more people are being concentrated into fewer and fewer languages (Harmon & Loh 2010: 97-98).

Threats due to small numbers

The death in January 2010 of Boa Sr., the last speaker of Bo, once again reminds us that one threat comes from the small numbers of speakers (VOGA 2010). Although several linguistic minorities do have hundreds of thousands of speakers, India also has many languages with very few speakers: the UNESCO atlas of "the World's languages in danger" gives 196 languages for India at various levels of endangerment (Moseley 2010), but I will discuss more about this number later. These languages are particularly vulnerable to catastrophes, whether natural or man-made. In this context, it is worth mentioning the death of King Jirake of the Andaman and Nicobar Islands. After an almost miraculous rescue after the tsunami in December 2004, Jirake and his 49 fellow tribespeople began to live in a guest house in the state capital Port Blair, where Jirake died, four months after that terrible tsunami.

He was the last person who knew all 10 variants of the language Great Andamanese. Researchers say that Jirake also knew the languages of several other extinct tribes. Researcher Anvita Abbi was working with him in compiling a three-language dictionary—in Great Andamanese, Hindi and English (VOGA n.d.). Thus, his passing away was mourned not just by his tribe, but also many others. The story becomes even more depressing on learning that there was alcohol abuse in the tribe. A 2007 report tells us that there are only seven "heritage speakers" left; they are all well over forty; and are not "fluent speakers as understood in normal parlance" (Abbi *et al.* 2007).

These problems, of course, may be seen amongst several indigenous peoples throughout the world. The trajectory is well known. It starts with a disappearing habitat due to "development" needs and pressures of a country undergoing rapid and savage globalisation. This radically transforms the indigenous community from sustainable users of natural resources to unwilling exploiters of nature. Soon, they leave the forest, becoming so-called "environmental refugees", who must now find a place in the margins of society's mainstream; Arundhati Roy (1999) estimates that some 33 million people have been displaced in India alone during the construction of big dams since 1950. These environmental refugees live in poverty and misery, losing steadily all the social and cultural capital that they possessed just one generation ago. Indeed, Abbi *et al.* (2007) report that:

The few persons, who speak the language now, did not remember any native stories. It was noticed that story

telling as an activity does not exist any more. Neither the mothers nor the old people of the community ever narrate any story to their children. The loss of mother tongue has very serious implications as the very genre of narration has been lost also in the contact language. Thus, the present generation of Great Andamanese never heard any story from their elders neither in their heritage language nor in Andamani Hindi.

A generation that has not heard a story from their elders? Scarcely credible.

Threats due to language politics

Relatively less vulnerable languages also face various threats. For example, a diasporic, non-indigenous—even “official”—language like Urdu (with 51.5 million speakers in 2001) is caught in a bigger religious politics of the relations between Hindus and Muslims in India. Indeed, in 1837, when the colonial government substituted Persian with Urdu as the official language in north India, the conflict between Hindi and Urdu became sharper. In 1900, the colonial government declared that Urdu and Hindi had the same official status. Gandhi strongly argued that they are in fact the same language (which he later called “Hindustani”). In 1909, in *Hind Swaraj*, Gandhi argued that “A universal language for India should be Hindi, with the option of writing it in Persian or Nagari characters.”

But, from the time of the country’s independence from the British Empire, and the Partition of the country into India and Pakistan, Urdu has been successfully marginalised as a “Muslim” language; systematically starved of funds, and the responsibility for its well-being has been left to the Muslim communities in the country. If one adds to this the fact that Muslims in India are for the most part very poor, and have practically no voice to counter the State’s official language policies, one can easily understand the ill health of the language (Gujral Report 1975; Shahabuddin 2003; Khalidi 2010). In the face of the State’s and the majority’s hostility, the lot of the Urdu-speaker is quite unhappy. As scholar C.M. Naim (1994) declares, “writing in Urdu in India is now definitely a political act. It may not empower you much, but it still lets you assert the fact of your existence.” Or as the poet puts it:

न मैं किसी का, न कोई मेरा,
मैं भी जी रहा हूँ उर्दू की तरह।

*na mai.n kisii kaa, na koi meraa,
mai.n bhii jii rahaa huu.N urduu kii tarah.*

“I belong to no one nor can call anyone mine, / I too live on, like Urdu.”

Threats from exclusionary policies

Even a richer community like that of the speakers of Konkani is struggling against complex language-political realities. Indeed, Konkani too is an “official” language. This Indo-

European language does not have a script of its own. As one travels south along the western coast of India, one finds Konkani written in Devanagari, Kannada, the Roman script, Malayalam and Perso-Arabic—depending on the main script of the region. The decision of the government of Karnataka to introduce Konkani as a subject in government schools rekindled the debate on the script for Konkani—Devanagari, Kannada or the Roman script?

Since the question is partly about the number of speakers of this diasporic language, we return to the census problems which we alluded to earlier. In the case of Konkani, we have imprecise information on the total number of speakers: estimates range from 2.5 million (GOI n.d.a) to 7.6 million speakers (Lewis 2009).

This uncertainty is a good example of the problem researcher Tove Skutnabb-Kangas (2002) complains about. After acknowledging the difficulty of defining precisely the terms “language” and “dialect” (this difficulty she calls an “acceptable reason” for our ignorance about the languages of the world), she says:

The unacceptable reason for our ignorance [about numbers of speakers of a language] is lack of resources for the study of languages. In Denmark where I live there are some 24 million pigs and some 5 million people. At any one point there is exact information about each pig, their age, weight, life-span, etc. But there is NO idea of how many languages people in Denmark speak and who speaks them. Bacon is a major export item in Denmark but people’s linguistic capital in languages other than Danish and English has so far been treated as invisible or even as a handicap.

To return to Konkani, after extensive consultations, the government concluded that it should use the Kannada script to teach Konkani. But the politically powerful Devanagari lobby opposed this decision arguing, among other things, that the central government’s academy of letters, the Sahitya Akademi, recognises only the Devanagari form of Konkani. Meanwhile, a third lobby is recommending the Roman script. This lobby argues that one should adopt the Roman script since not only is it widely used among the Konkani in Goa, but it would also serve well the considerable (and influential) Konkani diaspora outside India.

Although we should acknowledge that lobbying in language politics is a valid (and even valuable) decision-making mechanism in a democracy, one should also realise the time, money and energy that is wasted in such political battles where one is discussing exclusive solutions: either use Kannada, or Devanagari or the Roman script. Instead, we need more nuanced solutions, which promote the co-existence of diverse language strategies in a multilingual democracy.

The non-mother tongue education system

In Konkani’s case, there is at least agreement about the medium of education—namely, the mother tongue, Konkani. That is not the case with most linguistic minorities. The



typical indigenous or lower-caste or immigrant community—in a word, a marginalised community—simply does not have a choice in the medium of education. The various State guarantees notwithstanding, in India, the media of education for indigenous peoples remain the large regional languages. As Minati Panda (2009) observes, “the state’s official language is treated as the default mother tongue of all children.” This is the “Vernacular – Other Language Divide” that Ajit Mohanty (2010) analyses.

Language barriers thus are a further barrier for children of linguistic minorities and indigenous peoples. Combine these language barriers with the other systemic, infrastructural problems: lack of schools, teachers, learning materials. Now add to this sorry state the following summary by researcher Pamela MacKenzie (2003) about the educational environment:

Besides this, the state curriculum bears little relationship to the tribal child’s culture or to his or her previous knowledge and understanding. Children are not only learning in a language they do not know, they are also attempting to learn concepts, which have no familiar foundation, in that language. Teachers rarely speak the community language and few appreciate the children’s traditional culture. They have had no training in teaching second language learners and so the children are taught as first language speakers. Many teachers are unwilling to live in the tribal communities.

Not surprising, then, that of India’s 22.35 million indigenous children enrolled, over a third are pushed out before grade 5 (GOI n.d.b, SE 37 and SE 65). In Andhra Pradesh, government statistics show that within the first 10 years of schooling, 82% of the indigenous children leave school (SSA-AP n.d.a). (Activists rightly argue that one should call the phenomenon “push-out” not “drop-out”.) Not surprising, also, that there is illiteracy of crisis proportions amongst the indigenous peoples: in Andhra Pradesh, illiteracy among the general population is already 40%; among the indigenous peoples, it reaches 63%, and amongst the women there, 74% are illiterate (SSA-AP n.d.b).

And if indeed one succeeds in keeping kids in school, the results are terrible. The large-scale educational survey ASER (2011) found that in rural schools, only 48% of learners in class 5 were able to read a class 2 textbook: 52% could not do even that. Another recent survey, PROBE, found during unannounced visits that in 50% of the schools, no teaching was happening on the day the researchers visited (De *et al.* 2011).

Two inspiring interventions

In a country with a rich, activist history in the non-governmental sector, there are of course in India various initiatives that address linguistic inequalities as well. In fact, as I have argued elsewhere, the role of the non-governmental sector has increased to such an extent in the last few decades, that it is now one of the chief motors of India’s search for sustainable development (Rao 2008).

In Andhra Pradesh, in some 2,500 schools in eight districts, learning materials have been developed in eight indigenous languages. Similarly, in neighbouring Odisha, in 504 schools across eight districts and 10 indigenous languages, children are being taught in their mother tongues. The mother tongue is the medium of instruction in the first grade. There is then a gradual shift to the dominant, regional language (Odia), so that by the fifth grade, the child is learning everything in Odia, although the mother tongue may continue as a language subject.

A longitudinal study of Adivasi Odia and Konda in Andhra Pradesh, and Saora and Kissan in Odisha compared schools where the mother tongue was the medium of instruction with schools where the dominant languages (Telugu and Odia) were the media of instruction. The results are quite clear: indigenous children learning in their mother tongues performed better than their counterparts learning in Telugu or Odia in the curricular areas of Mathematics, Language, and Environmental Studies (Panda *et al.* 2011).

In Odisha, the coordinator of the project, Mahendra Mishra, keeps an “education diary” where he recently touchingly documented the large gap between the enlightened policies of the federal government in New Delhi and the situation in the schools which Koya children go to. After Mishra’s patient explanations, the teachers realised that it is possible for the children to learn both the mother language and acquire the chief regional language (Mishra 2008).

Both the experts and the community recognise that this move to the regional language is necessary for better economic prospects. Some even argue that it is necessary to go from the mother language directly to English, that “window on the world”. In India, English also carries with it the possibility of by-passing the caste system (see Mukherjee 2009 for one recent take on this theme). In any case, experts agree that this multi-stakeholder cooperation is the most effective way forward.

“Bhasha” is yet another non-governmental intervention, this one already a decade old, working on many fronts with

indigenous (adivasi) and nomadic communities in Gujarat. Indeed, as the founder-director Ganesh N. Devy (2006) reports in his review-report:

A purely academic study of an adivasi language or a merely aesthetic appreciation of the adivasi art may have been attempted in the past; but in our time, if these interests do not go firmly together with the concern for the economic empowerment and human rights protection, the project ought to be seen as a deeply flawed one. Bhasha naturally decided to weld together the aesthetic and the socio-economic concerns.

And among those “aesthetic” ventures is the magazine *Dhol*, which appears in 10 indigenous languages (as well as Gujarati and Marathi). Its blurb declares, “The periodical *Dhol* may be described as a movement of letters by and for the adivasis in adivasi oral language.... [T]he editors of *Dhol* are themselves from the respective tribes” (*Dhol* 2008).

Devy (2006) adds:

Subsequently, in order to highlight the oral nature of adivasi culture, we launched a weekly radio magazine which was relayed throughout the adivasi areas of Gujarat and Maharashtra. All these initiatives together gave birth to a small but focused publishing and book distribution house, which now works under the name ‘Bhasha Publication for Social Transformation’, and which is the first community owned publishing programme for adivasis and nomadic communities of India. It is not so much a commercial venture as a cultural and literary platform for intellectual concerns and a forum for expression in people’s own languages.

Thus, almost without exception, the work of non-governmental organisations is one of multisectoral interventions—that is, to work not just in the education sector, but also, for example, in the areas of health, livelihood, micro-finance, human rights, agriculture, environment, etc.

Some lessons

So what can we learn from the various examples that we have seen? The case of the Great Andamanese tribe is one that demands urgent, critical help: a delay of even a few months can be catastrophic. We acutely need more information on the linguistic and cultural state of such languages. Abbi’s recent work (2009) arguing that Great Andamanese is perhaps even a sixth language family in India shows us how much work remains to be done. Besides, as another researcher argues, “The process of language documentation itself arouses enthusiasm for language use among the community and this can be easily utilized by the people involved in language revitalization” (Avtans 2007). Precisely here, the People’s Linguistic Survey of India (PLSI 2012) has a crucial role to play. This government

initiative is expected to document in detail the linguistic landscape of India. And the more effectively it does its job, the better one can plan the conservation of these endangered languages.

Meanwhile, as the Commissioner for Linguistic Minorities (CLM) recommends, one should mention every language in the census; not just those that have more than 10 thousand speakers (GOI-CLM 2004, paragraphs 38.47 and 39.4). The reports themselves are impressively detailed, often indicting state governments of violating linguistic human rights. But the CLM website tells us that the Commissioner’s, Deputy Commissioner’s, and two Assistant Commissioners’ positions are “vacant”, with a Joint Secretary in the Ministry of Minority Affairs “looking after the work”. Bemoaning such negligence, an earlier Commissioner remarks that “this very vital organization... has been allowed to decay into a dysfunctional limb of bureaucracy” (GOI-CLM 2007).

On the other hand, the current state and the future of Urdu is complicated because of the historically much larger frame of Hindu-Muslim relations in which one must see the current state of the language. Here, the policy has simply become hostage to right-wing religious politics—dangerous forces which occasionally even turn fascist. One sees an indication of this in the 1991 census when the chauvinistic Hindu parties were especially strong. The number of speakers whose mother tongue was Sanskrit suddenly shot up by 715%. In the 2001 census, it again fell to the “normal” census levels (Kidwai 2008).

Even the more fortunate Konkani is entangled in complex language politics, but those knots would be more tractable if one were to adopt more flexible positions. Attempts to strengthen one’s own language while accommodating diverse voices seems to give good results. In Tripura, the Left party promotes the Sino-Tibetan language Kokborok, but it is carrying out the project of normativisation of this language without cultural homogenisation. As a result, in the 2001 census, 762,000 people called Kokborok their mother tongue. In contrast, in the 1961 census, only three women declared Kokborok their mother tongue (Kidwai 2008).

Finally, in the case of education for indigenous peoples, as everywhere in the world, the gap between policy and practice is really huge. Indeed, education is a deeply contested terrain. In Meyer and Alvarado’s collection of essays (2010), Noam Chomsky dialogues on indigenous resistance with over 20 activists and intellectuals from North, Central and South America. The book contains many examples of “silent ethnocide—a low-intensity warfare through formal education” (Pérez *et al.* 2010). As many in that volume point out, in a period of neo-liberal policies, the task of resistance becomes more urgent and more difficult.

In India, notwithstanding an enlightened legal framework, notwithstanding well-worded educational policies, notwithstanding the fact that India is a signatory to several



international conventions which protect the rights of minorities, indigenous peoples, immigrants, women and children, there remains a huge amount to be done to protect the linguistic human rights of these vulnerable groups. The recent Right to Education (RtE) Act too is not of much help. In saying that the medium of instruction “as far as practicable” shall be in the child’s mother tongue, India’s RtE is in a long tradition of what Skutnabb-Kangas (2008) calls “opt-outs, modifications, alternatives, claw-backs.” Indeed, RtE was passed into law in the face of much criticism from civil society (Sadgopal 2009).

As is evident in the UN declaration on the rights of indigenous peoples (UN 2007), governments know that they need to protect the rights of indigenous peoples. At the same time, UNESCO alerts us to the role of mother-tongue based education to conserve linguistic diversity. And as the UNDP 2004 report shows, governments know the advantages of a mother-tongue based multilingual education in achieving sustainable development (Rao 2010b).

To achieve the aim of a high-level multilingualism in society, especially in the case of children of minorities and indigenous peoples, here is the recommendation distilled by Skutnabb-Kangas from the world research literature on the subject: 8 to 10 years of education mostly in the mother language, accompanied by graded and high-quality teaching of the main language of the region, taught by bilingual teachers in non-fee-paying, government schools. According to this researcher, this is the most effective, inclusive and just package of practices in order for the children to acquire firmly their own languages as well as the ‘livelihood’ language (Skutnabb-Kangas 2008). Research shows that this mother-tongue based multilingual education works in contexts as varied as Odisha, Nepal and Ethiopia, to name just three (Heugh & Skutnabb-Kangas 2010).

The experience of the various groups working in this field seems to show that sustainable development cannot happen along only one axis; one must create and nurture conditions on many fronts. And flexibility is very important here too. One should remember what researcher Lachman Khubchandani wisely said: “When dealing with plural societies, we shall do well to realize the risks involved in *uniform* solutions” (cited in Groff 2003).

The world’s knowledge commons—its linguistic diversity—is under severe threat. We know what needs to be done. And we need to act now.

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The Loss of (Traditional) Ecological Knowledge among Communities



The natural environment provides the basic canvas for a variety of cultural processes. Places and landscapes play a significant role in shaping the lives of communities that live within them. This long-term intimate contact is manifested in the ecological knowledge of communities. Labelled traditional ecological knowledge and abbreviated as TEK, this knowledge reflects the collective, cumulative understanding of a community and its relationship with the natural environment. TEK is both dynamic and evolving, i.e., capable of adaptation and change, especially in the contexts of resource use and in its potential to aid in the survival of communities across generations. However, in a pattern which is disconcertingly similar to that of loss of biodiversity, over the past two centuries, traditional knowledge systems worldwide have been experiencing demonstrable setbacks. Rapid changes surrounding the industrial revolution and its aftermath have acted as catalysts of ecological destruction as well as equally widespread social, economic and cultural transformations among communities all across the world. The rapid march of technology which we have witnessed in the past century is perhaps paralleled only by an equally startling loss of cultural diversity. Abrupt severing of ties with lifestyles, culture, environments and locality and the onset of globalisation have been tied to this loss of knowledge and diversity. In fact, many traditional knowledge systems that survive now do so thanks to the location of their communities in areas that are marginal or untouched by modern development.

Loss of ties to land and nature

TEK has been primarily environment- or place-based, and local communities have evolved practices rooted in place. A large number of forest-based, pastoralist and fishing communities depend on their intimate knowledge of locality and environment to derive their livelihood. Many of these sea and landscapes have been common systems where locally incorporated knowledge evolved context-specific governance mechanisms. However, a loss of sustained contact with land has resulted in the erosion of place-based cultures, loss of associated knowledge and the breakdown of institutions. Contributing factors that have brought about loss of ties with land include enclosure, migration, and shifts from agricultural, pastoral and other land-based occupations. Changes in agricultural practices include loss of diversity in food crops and traditional agricultural practices, spread of monocultures, proliferation of high yielding varieties, and above all, a transition to a market economy. As societies modernise, homogenisation in agricultural products and practices has had a negative impact on the diversity and resilience of agricultural systems as a whole. In some cases, a toss up between 'scientific' and traditional practices is also evident. In northeastern India, which is home to over a hundred different linguistically and culturally distinct ethnic groups, shifting cultivation or *jhum* has been the norm for centuries, providing sustenance as well as social and cultural benefits. In the past few decades, however, its sustainability has been called into question despite the fact that local people have an in depth appreciation of the dynamics of this practice. Labelled 'primitive', this practice has been

reviled as an inefficient form of agriculture which destroys land and forests. Although the jury is still out regarding the efficiency of *jhum* (or its alternatives), its practitioners are being encouraged to practice sedentary agricultural practices such as terraced farming. These and other forms of state mediated agricultural change are commonplace in many countries. The knowledge which is lost with the erosion of some of these agricultural forms has poor chances of revival even if the verdict is in favour of the practice. Such irreversible scenarios are also reminiscent of large scale state interventions like the Green Revolution where, as a result of agricultural modernisation, farmers lost control of crop varieties, traditional practices and the different forms of knowledge which accompanied them.

The same applies to local medicinal knowledge. Knowledge about medicinal plants is still critical to many societies. Among communities where culturally inappropriate modernisation of healthcare has taken place, the loss of traditional medicinal knowledge has been detrimental to the community. Western medicine owes a huge debt to traditional healing systems, and a loss of ethnomedicinal knowledge could mean significant losses in terms of future use value. In many parts of the world, ethnomedicinal knowledge is tied with religion and land; sacred groves in many parts of India very often double as sanctuaries for medicinal plants, and access is often restricted to traditional healers. As these sacred spaces undergo conversion, the knowledge about these sacred practices also tends to disappear.

Examinations of transformations in land-based occupations and their links to knowledge are incomplete without the mention of pastoralists. Pastoralist communities, once characterised by highly mobile lifestyles, are increasingly being forced to adopt sedentary ways of life. In many countries, sedentarisation—whether partial or total—has resulted in reduced migratory routes, inappropriate land tenure and alienation from traditional lands. In some instances, this curtailment on mobility has been imposed or encouraged by the state. Indigenous pastoral systems, most of which are common lands, are governed by customary institutional arrangements and are increasingly coming into conflict with state policies. Technological advances also play a critical role in disrupting indigenous pastoral knowledge. For example, among the Arctic indigenous Sami, the use of multi-utility vehicles, snow mobiles, fencing and the proliferation of cash have ushered in demand for a new set of skills and knowledge required to herd/farm reindeer. Changes in family structure and education systems also mean that children no longer have daily contact with the herd, making them increasingly vulnerable to a loss of Sami identity. Closer to home, we have examples among the Van Gujjars, Gaddis, Bakrewals, Raika, Charan and Bharvad, all of whom are affected to some extent by shifting ties with land. Transhumant communities such as the Gujjars, Gaddis, Bhotias and Changpas practice complicated livestock grazing cycling, utilising pastures at different elevations based on their detailed knowledge of climate as well as stocking related information. Recent curbs on their movement as well as relocation from ancestral grazing lands to and from



Photo credit: Mark Katzman

which they migrate are bound to bring about an erosion of their land- and livestock-based knowledge, not to mention a breakdown in customary management practices when they lose their context.

Language, education and learning

Strongly intertwined with culture and identity, language plays a critical link in storing and transmitting the knowledge of communities. Language not only facilitates the transfer of local ecological knowledge relating to the practical aspects of day to day life, but also ensures the transmission of stories, songs, narratives and oral histories across generations. However, in the current scheme of things, first triggered by colonisation and then by globalisation, the world's languages are undergoing a mass extinction of sorts, triggering a series of impacts that precipitate the loss of culture. Optimistic and pessimistic estimates peg worldwide language loss at 50% and 95% respectively by 2100. Most at risk are the indigenous languages with few speakers. In India, the fate of the Andamanese groups of languages is a perfect illustration of the loss of languages and cultural identities as a consequence of colonisation, migration of settlers and assimilation. Believed to be the last representatives of pre-Neolithic languages in South East Asia, only a few speakers of Jero or a mixed version of Great Andamanese remain. The language of the Jarawa (a member of the Great Andamanese group) still survives on account of limited contact with their speakers, and Sentinelese remains unattested as there is vigorous resistance to any attempts of contact.

Paradoxical as it seems, modern education systems have played, and continue to play, a role in the degradation of language and associated local knowledge. Modern formal education systems in most countries are typically biased towards dominant languages and dominant community groups, thereby facilitating the marginalisation of languages spoken by minority communities. Such active marginalisation and homogenisation by the state can be disastrous for

traditional languages, indigenous communities and their associated knowledge.

Although language may be regarded as a critical aspect in transmitting knowledge to a new generation, there are a number of other significant cultural and social components to the loss of knowledge which are related to learning. For example, Ruddle and Chesterfield identify a number of general patterns that characterise the transmission of knowledge to the younger generation. The existence of specific age divisions for training in different tasks, differences in gender in learning and teaching, specificity in geographical location and time periods for the performance of certain tasks and rituals, the existence of rewards and punishments for certain tasks, a progression in teaching (and learning) from simple tasks to complex activities, etc., are consistent across a large number of local communities.

This type of transmission is critical as over many generations it is this institutionalisation which leads to a set of customary ways which dictate how things are done in a society. An example of such transmission is illustrated by Robert Johannes in *Words of the Lagoon*, where he relates in detail the rigorous training that young boys on the island of Tobi (in the Palau District of Micronesia) undergo before they can become master fishermen. Tobian boys are initiated into fishing when they are just seven or eight. The initial years are characterised by the use of simple low cost fishing gear, which could be used effectively only if they were successful in observing the behaviour of target species of fish at close range, especially in tidal pools. In the meantime, they are taught to carve fishhooks out of shell or bone, following which they are allowed to use them in shallow waters. The final phase, which typically coincides with late adolescence, involves casting and fishing in deeper waters off the reef and the procurement of larger species of fish. However, Johannes notes that with changing times, this traditional training schedule has also undergone a transition, being more attenuated, less rigid, and having fewer rituals.



What happens when we lose knowledge?

The accidental or active dissolution of traditional practices results in the obsolescence of traditional local knowledge. Technological shifts in a number of fields such as agriculture, industry, etc., have already rendered a number of traditional systems obsolete. With respect to ecological knowledge, there is also a range of initiatives that stem from a lack of appreciation, understanding and accommodation of local ideas and practices. Often, these well-intentioned, ill-informed initiatives have the potential to undermine both traditional knowledge systems as well as ecological sustainability. For example, lobbying by animal rights activists and conservation professionals in some instances against the whaling, sealing and hunting traditions of certain indigenous groups, shifting cultivation, low level extermination of vermin by traditional farming communities, etc., which fall outside the realm of mainstream resource use, are often targeted.

The fate of those who were once classified as the 'criminal tribes' of India is a case in point. The Bhanu and the Bawariya who roamed the *terai* and *bhabar* reaches of the Indo-Gangetic plain, the Banjara, the Pardhi and numerous other nomadic tribes were expert hunters and trappers. Their continual mobility, coupled with the necessity to eke out an existence from common spaces including forests, scrub and marginal lands, provided them with an in depth knowledge about flora, fauna and the land in general. However, branded as 'habitual criminals' and 'predatory tribes' on account of their propensity for crime (which itself was attributable to the fact that they were ostracised on the basis of caste and class which made it all the more difficult to make an honest living), most were discriminated against for centuries. Their marginalisation during the colonial period is still evident many decades later in the way communities such as the Pardhi are still stereotyped as thieves and poachers. Recent attempts to forcibly settle and 'normalise' these communities under projects such as the Pardhi 'gentrification' project smack of a lack of understanding about their lifestyles or history. In such attempts, the unique culture of the Pardhi finds no mention, nor is there any remorse for the loss of knowledge and identity gained over centuries of wanderings. The same applies to numerous nomadic tribes: Kalandars, Saperas, Madaris, Kuravars, Narikuruvars, the list goes on.

The loss of knowledge is not just detrimental to local communities or particular indigenous groups which possess

a certain form of knowledge. Along a broader perspective, the practical significance of such knowledge is to the wider world community. Its loss is most likely a loss of future benefits and options, impacting the availability of possibilities. The cultural transmission of knowledge also plays a very important role in adaptation and problem solving. This is also significant because of its parallels with nature. In the same way diversity of ecological systems is known to promote resilience and perhaps stability, cultural diversity is capable of enhancing the resilience of social systems. This could be by way of providing multiple possibilities, choices and alternatives to cope with different contexts and to have available the potential to adapt to change—a sort of cultural insurance to fall back on during events of stress. However, the transmission of knowledge among generations is most viable when there is continuity—continuity of language, social and cultural interactions and a variety of contexts which together make the milieu. It is also important to understand in this context, the value of systems where knowledge has been gained by trial and error, experimentation and experience.

Although investigations into the knowledge systems of local communities are gaining in prominence, the way traditional knowledge is treated is still somewhat questionable from a number of perspectives. First, there is a tendency to treat the knowledge of local communities as anecdotal, unsubstantiated and therefore inferior to modern scientific knowledge. This is a widespread viewpoint even among scientists, resource managers and development professionals. At the other extreme, are the extremely romanticised notions about the wisdom of local communities living in 'harmony' with nature. Both these viewpoints are problematic. Rather than being considered as opposites, where one form is scientific and the other marginal, it would be prudent to consider a more pluralistic paradigm of knowledge, one which acknowledges the importance of context, democratisation, justice and problem solving.

If the management of the commons and common property resources could benefit from both traditional and modern systems of knowledge, such integration should be attempted. Lastly, it is also important to note here that TEK need not necessarily be the sole possession of indigenous communities, minority groups, settler communities, and a number of other groups have knowledge which is unique to their culture.



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Stewarding the Commons: Rethinking Property and the Emergence of Biocultural Rights

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Introduction

The legal discourse around conservation of biodiversity during the colonial and post-independence period has been based on a 'fines and fences' approach. Lands and waters that had been historically stewarded by communities were fenced off and classified as national parks, wildlife sanctuaries and other kinds of protected areas. Communities who had historically stewarded these ecosystems were dispossessed in the name of conservation and penalised for carrying on their traditional livelihoods and customary practices (see for e.g., Suich *et al.* 2009).

In the late nineteen sixties, the excesses of the 'fines and fences' approach was 'scientifically' justified on the basis of a theory of the 'tragedy of the commons' (Hardin 1968). The theory argued that where consequences regarding commonly held resources are borne by the community as a whole, individuals would maximise self-interest to the detriment of the community and sustainability of the resources. The theory therefore proposed that long-term sustainability of common-pool resources is best ensured when such resources are privatised or state controlled.

Extensive research since the nineties on governance of the commons by political scientists and economists such as Elinor Ostrom (Ostrom 1990) and Arun Agarwal (Chhatre & Agrawal 2008) unequivocally established that state control or privatisation of common pool resources are not necessarily the best solutions to ensure conservation, and in many cases are counter-productive. Contrary to the 'tragedy of the commons' assertion of the destruction of common pool resources due to mismanagement by communities, researchers working on the commons established that under certain conditions (Ostrom 1990)¹, communities are best able to conserve ecosystems.

Recent research evaluating the effectiveness of protected areas under different kinds of management regimes traced forest change in three diverse landscapes: the Chitwan district of Nepal, the Mahananda Wildlife Sanctuary in West Bengal, India and the Tadoba-Andhari Tiger Reserve in Maharashtra, India. Findings suggest that a protectionist approach that excludes local communities is likely to fail without expensive government inputs. Conservation is also likely to fail in cases where outsiders or dominant insiders impose rules on the community for the use of resources. However, the studies also proved that effective management of forest resources occurs when community members are genuinely involved in decision-making and in developing rules for the use of these resources (Ostrom *et al.* 2010. See also Ostrom 2010).

Against this backdrop, the question that we will address here is the legal ramifications of such paradigm shifting evidence regarding effective governance of common pool resources.

The Convention on Biological Diversity and the discourse of stewardship

Perhaps the most far-reaching legal instrument recognising the role of indigenous peoples and local communities

(hereafter referred to as 'communities') in conserving ecosystems is the Convention on Biological Diversity (CBD). The CBD entered into force in 1993 and currently has 193 States that are parties to it. The CBD advocates a 'rights and incentives' approach to conservation and sustainable use of biodiversity. This approach seeks to recognise certain rights over genetic resources and associated traditional knowledge while ensuring the fair and equitable sharing of benefits arising from the commercial and research utilisation of such resources and knowledge.

While Article 15.1² of the CBD is explicit regarding the rights of States over genetic resources, Articles 8(j)³ and 10(c)⁴ recognise the rights of communities to their knowledge, innovations and practices, and customary sustainable use of biological resources relevant for the conservation and sustainable use of biodiversity. Through Articles 8(j) and 10(c), the CBD firmly lays the foundation for a discourse of stewardship, affirming the rights of communities to local ecosystems and ways of life that nurture these ecosystems. Articles 8(j) and 10(c) are based on the principle that biodiversity is best conserved when common pool resources are governed and managed by communities whose lifestyles are integrally intertwined with these resources.

The principles and the framework of the CBD have spawned a range of other legal instruments, all of which underscore the role of communities in conserving ecosystems and affirm community rights to common pool resources as a way to stem the alarming loss of biodiversity. These include decisions adopted by the 193 State parties in the form of detailed guidelines, principles and codes, recognising the right of stewardship of communities to the lands and waters they have traditionally occupied, such as the Akwé: Kon Guidelines⁵, the Addis Ababa Principles⁶ and the Tkarihwaí:ri Code of Ethical Conduct⁷.

Furthermore, in 2004 the parties to the CBD unequivocally endorsed the Programme of Work on Protected Areas (PoWPA), which enshrined the development of participatory, ecologically representative, and effectively managed national and regional systems of protected areas. Element 2 of the PoWPA underscored the role of communities in stewarding ecosystems by identifying governance, participation, equity and benefit sharing as areas of focus for the programme of work.

The most recent legal instrument to recognise community rights to stewardship of their ecosystems is the Nagoya Protocol on Access and Benefit Sharing. The 193 parties to the CBD adopted the Nagoya Protocol in October 2010. The preamble of the Nagoya Protocol notes "the interrelationship between genetic resources and traditional knowledge, their inseparable nature for indigenous and local communities, the importance of the traditional knowledge for the conservation of biological diversity and the sustainable use of its components, and for the sustainable livelihoods of these communities." Articles 6 and 7 of the Nagoya Protocol go further than the CBD and explicitly recognise the rights of communities to their genetic resources and associated traditional knowledge commons⁸.

Rethinking property and the emergence of biocultural rights

The rights of communities in the swathe of legal instruments birthed by the CBD are rooted in the principle that effective conservation and sustainable use of ecosystems can only be ensured by recognising the rights of those who manage and govern these ecosystems as common pool resources. These rights are increasingly referred to in law as 'biocultural rights' (Bavikatte & Robinson 2011) and are justified not on the basis of communities having a formal legal title to certain lands and waters, but on the basis of historical stewardship founded on cultural practices and spiritual beliefs.

The emergence of biocultural rights forces a rethink of the conventional understanding of property as private property. Biocultural rights make a case for the right to commons by arguing that property need not be perceived purely as a thing that one has absolute rights over, but can also be viewed as a network of use and stewarding relationships amongst a number of rights holders (see for e.g., Macpherson 1978: 2). Within a rights discourse, biocultural rights can be contextualised as a subset of the third generation group or solidarity rights.⁹

A visual depiction of a discourse of biocultural rights would resemble a wheel with the circumference being the objective of conservation and sustainable use, the central hub being the ethic of stewardship, and the spokes being the different biocultural rights that communities require to protect their ways of life. This depiction emphasises the ethic of stewardship or care that pulls together the seemingly disparate rights in order to achieve the objective of conservation. The notion of stewardship is critical for a discourse of biocultural rights, for it provides the ethical content for these rights and thereby creates a paradigm shift whereby rights to land, culture, traditional knowledge, self-governance, etc. are informed by a set of values that are not anthropocentric but biocentric.

Realising biocultural rights - Towards biocultural community protocols

The steady recognition of biocultural rights in international environmental law has led to questions about how best to affirm these rights to steward common pool resources. The dilemma in law presents itself as: "When there are multiple stewards of common pool resources, how can decisions regarding these resources effectively take on board the diverse concerns and interests?"

This question became particularly relevant in the context of the international negotiations towards the Nagoya Protocol. State parties on many occasions argued that when it comes to community managed genetic resources or traditional knowledge commons, it would be best for the State to make decisions regarding third party access to such resources and knowledge since communities are neither homogenous nor have homogenous interests. The private and the research sectors also raised concerns of high transaction costs in securing the consent of communities in accessing their



Photo credit: Natural Justice

resources and knowledge, especially due to the inability of companies or researchers to discern the customary laws or decision making structures.

It was in this context that the African Group of countries supported by the indigenous peoples groups in the Nagoya Protocol negotiations suggested biocultural community protocols (BCPs) as a solution. BCPs—or what later came to be known as community protocols in the Nagoya Protocol—are community-led instruments that promote participatory advocacy for the recognition of, and support for ways of life that are based on, the sustainable use of biodiversity according to customary, national and international laws and policies (Jonas *et al.* 2010a)¹⁰. The value and integrity of BCPs lie in the process that communities undertake to develop them, in what the protocols represent to the community, and in their future uses and effects (Jonas *et al.* 2010b: 62).

BCPs in essence begin with the end in mind, which is conservation and sustainable use of biodiversity. They then describe the way of life of the community, its customary laws, cultural and spiritual values, governance and decision making structures, etc., all of which contribute to the stewarding of the ecosystem commons. The community then identifies its current challenges and lays claim to a range



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of rights in domestic and international law. In essence, the broad rights claim allows the community to determine for itself its way of life, which in turn ensures the continuation of their stewardship practices.

The value of community protocols lies in their ability to act as the glue that holds together the total mosaic of a community life that is fragmented under different laws and policies, with the understanding that the conservation of nature is a result of a holistic way of life.

Article 12.1¹¹ of the Nagoya Protocol¹² requires parties to recognise BCPs or community protocols as legal documents that assert community claims over their common pool resources and provide clear rules and conditions of access to community commons by third parties. Increasingly, communities are now developing BCPs as charters of biocultural rights asserting stewardship claims over community managed commons in areas that extend beyond access and benefit sharing to potentially address situations of mining, carbon stocks and ecosystem services.¹³

Conclusion

While the Nagoya Protocol foregrounded BCPs as innovative legal tools for communities to assert stewardship claims over their resource and knowledge commons, communities are also advocating BCPs as effective safeguards in the context of REDD+¹⁴ under the UN Framework Convention on Climate Change (UNFCCC). At the recent 17th Conference of Parties

to the UNFCCC, a panel discussion was hosted by Natural Justice (Lawyers for Communities and the Environment) (www.naturaljustice.org) and indigenous peoples networks such as the Indigenous Peoples of Africa Coordinating Committee (IPACC), Indigenous Peoples Climate Change Assessment (IPCCA) and the Global Forest Coalition, that among other things, focussed on the importance of BCPs in addressing the risks posed by REDD+ to indigenous peoples.

The cross-sectoral application of BCPs was bound to happen since the critical issue that underlies all the innovative financing mechanisms for conservation, be it REDD+, ABS or other kinds of payments for ecosystem services, is one of recognising and incentivising stewardship of ecosystems through safeguarding the biocultural rights of communities. BCPs make the critical link in law between conservation of ecosystem commons and the recognition of the biocultural rights of communities stewarding these commons. The immense value of BCPs lie in their ability to act as effective legal vehicles engendering the discourse of biocultural rights thereby transforming the basis of property from ownership to stewardship.

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Notes

¹These conditions are what Ostrom terms as the eight design principles for effective common pool resource management. They are: 1) Define clear group boundaries; 2) Match rules governing use of common goods to local needs and conditions; 3) Ensure that those affected by the rules can participate in modifying the rules; 4) Make sure the rulemaking rights of community members are respected by outside authorities; 5) Develop a system, carried out by community members, for monitoring members' behavior; 6) Use graduated sanctions for rule violators; 7) Provide accessible, low-cost means for dispute resolution; 8) Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system. *Supra* n. 2, p. 90.

²Article 15: Access to Genetic Resources: 1. Recognizing the sovereign rights of states over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.

³Article 8(j): Each Contracting Party shall, as far as possible and as

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

⁴Article 10(c): Each Contracting Party shall, as far as possible and as appropriate, protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

⁵Akwé: Kon - Voluntary guidelines for the conduct of cultural, environmental and social impact assessments regarding developments proposed to take place on, or which are likely to impact on, sacred sites and on lands and waters traditionally occupied or used by indigenous and local communities.

⁶Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity.

⁷The Tkarihwaí:ri Code of Ethical Conduct to Ensure Respect for the Cultural and Intellectual Heritage of Indigenous and Local Communities.

⁸Article 6.2: In accordance with domestic law, each Party shall take measures, as appropriate, with the aim of ensuring that the prior informed consent or approval and involvement of indigenous and local communities is obtained for access to genetic resources where they have the established right to grant access to such resources. Article 7: In accordance with domestic law, each Party shall take measures, as appropriate, with the aim of ensuring that traditional knowledge associated with genetic resources that is held by indigenous and local communities is accessed with the prior and informed consent or approval and involvement of these indigenous and local communities, and that mutually agreed terms have been established.

⁹Under international law, the first generation of rights are commonly understood as civil and political rights attributed to the Universal Declaration on Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR). The second generation of rights are socio-economic and cultural rights covered to some extent by the UDHR but enshrined in the International Covenant on Economic, Social and Cultural Rights (ICESR). Solidarity rights or group rights which are considered as third generation rights have begun to gain increasing momentum through the Declaration on the Rights of Indigenous Peoples adopted by the UN General Assembly in 2007.

¹⁰A significant amount of work on the development and elaboration of BCPs was done by Natural Justice (Lawyers for Communities and the Environment), an international NPO working on community rights and biodiversity and headquartered in South Africa (see www.naturaljustice.org). The submissions of the African Group regarding the protection of traditional knowledge benefitted from the inputs from members of the Natural Justice team.

¹¹Article 12.1 of the Nagoya Protocol: In implementing their obligations under this Protocol, Parties shall in accordance with domestic law take into consideration indigenous and local communities' customary laws,

community protocols and procedures, as applicable, with respect to traditional knowledge associated with genetic resources.

¹²Article 12.1 of the Nagoya Protocol: In implementing their obligations under this Protocol, Parties shall in accordance with domestic law take into consideration indigenous and local communities' customary laws, community protocols and procedures, as applicable, with respect to traditional knowledge associated with genetic resources.

¹³Examples include the BCP of Alto San Juan, Chocó, Colombia (which among other addresses issues of illegal mining See: http://naturaljustice.org/wp-content/uploads/pdf/Alto_San_Juan_BCP-English.pdf); the Raika BCP in India (which addresses the issue of access to traditional grazing grounds. See: http://www.community-protocols.org/wp-content/uploads/documents/India-Raika_Community_Protocol.pdf); The Samburu Protocol in Kenya (which deals with protection of the red masai sheep, a breed developed by the Samburu: . See: http://community-protocols.org/wp-content/uploads/documents/Kenya-Samburu_Community_Protocol.pdf); The Protocol of the Traditional

Healers of Bushbuckridge (which deals with access to the traditional knowledge commons of the healers living in and around the Kruger to Canyons Biosphere Reserve. See: http://community-protocols.org/wp-content/uploads/documents/South_Africa-Bushbuckridge_Biocultural_Protocol.pdf);st January 2012; The Tanchara community in Ghana has recently developed a BCP in response to prospecting activities by an Australian mining company and the communities in Lamu, Kenya are currently developing a BCP to fight a multi-billion dollar port that will adversely affect the coastal ecosystem and their livelihoods.

¹⁴Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. 'REDD+' goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks <http://www.un-redd.org/AboutREDD/tabid/582/Default.aspx> (UN-REDD Programme 2009).

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Traditional Knowledge and Intellectual Property Rights

“Traditional Knowledge” (TK) and “Intellectual Property” (IP) are terms that encompass a wide range of meanings and implications. The term traditional knowledge is typically employed to refer to knowledge held within local, indigenous and/or traditional communities in their use of natural and cultural resources, and is often propagated from generation to generation through diverse means, especially oral traditions. TK, as it embodies the ways of life for these geographically and culturally diverse communities, is important to the communities that are its holders, and also to the wider global community through the application of this knowledge in the fields of industry, agriculture, medicine, etc. While the differences in defining what constitutes traditional knowledge, and thereby ‘non-traditional’ knowledge, are vast, the contentions regarding who owns and benefits from this knowledge take on more complex, intellectually and politically charged manifestations. While addressing the protection of TK, differences in opinions arise right at the beginning, in asking why such knowledge should be protected, to whom this knowledge ‘belongs’, who benefits from it and whether in sharing such knowledge, rights are safeguarded or abused.

It is argued by proponents of IPR that it emerges as a natural corollary to TK in that it seeks to counter the misappropriation of TK by ‘external’ actors. Proponents of the use of the IPR provisions to safeguard TK and the rights of TK holders believe that as a legal tool IPR mechanisms are better suited to address rights issues and provide legal recourse. They argue that the provision of economic incentives (such as patents) can bolster the attempts to preserve traditional modes of knowledge generation and use.

Those opposed to bringing TK under conventional protection and rights-based instruments list out a range of concerns which may cause such protection measures to impose limitations in excess of the benefits they provide to the holders of that knowledge. They point out that legal norms relating to formal intellectual property rights based on copyright, patent, design, etc., were developed to protect the rights of scientific developments in the West. Conceptual differences between a Western idea and ethic of knowledge and its transmission and a traditional one have often confounded attempts to harmonise legal frameworks that protect the rights of the “knowledge holder”. Often, TK is the collective knowledge shared by a community and is inseparable from the natural and social/cultural context in which it is generated and perpetuated. On account of its context-specificity, TK is dynamic and transient, and capable of adapting to changes in the local environment and availability of resources.

Acceptability and feasibility of provisions under conventional IPRs are practical factors that can impede the inclusion of TK under IPRs where conceptual differences have been resolved.

Often, the cost of obtaining licenses, long period of wait for permits, and the need to comply with externally imposed conditions can deter TK holders from seeking such protection in spite of the economic benefits they promise. Further, much of the knowledge that falls under TK does not lend itself easily to documentation, often a prerequisite to be considered for inclusion under IPR instruments.

Established IPR regulatory institutions more often than not ignore the local/customary laws of ownership that regulate the use of TK. The inability to resolve conceptual differences between knowledge creators and knowledge holders in the provision of rights based protection often leads to the classification of collective knowledge systems (under which TK is commonly categorised) as belonging to the public domain, as most TK holders are not its creators.

On the international scale, the debate, in its most polarised manifestation, pitches developing countries that are the primary sources of these resources against industrialised countries that appropriate and utilise these resources for various commercial products.

Protecting TK

It is important when deciding or debating upon appropriate protection measures for TK to specify the objectives of protection. A ‘defensive’ mode of protection (i.e., through the protection of rights of TK holders and prevent misappropriation of TK) need not be the only objective behind protecting TK. What many propose as ‘positive’ protection includes safe guarding and preserving the cultures, traditional practices and ways of life of community, promoting equity, and using this knowledge to aid in spheres of industry, agriculture, the arts, etc.—outside of where it was created or intended to be used.

Legal and institutional instruments to protect TK

Ideas for the protection of TK include IPRs (using existing or modified modes of protection) or developing a *sui generis* regime. Often, a combination of both is recommended to incorporate the various aspects of TK and TK holders’ rights. A third mode of protection involves acknowledging and enforcing existing customary laws which recognise other forms of ownership and possession rights (Correa 2001). A range of national laws and international/multilateral agreements have been developed to deal with the protection of TK, although many contentions exist regarding the efficacy and appropriateness of adopted measures.

Presented below is a quick look at the existing modes of protection under various legal and multilateral agreements below:

Convention on Biological Diversity

The 1992 Convention on Biological Diversity is credited with spearheading the debate on protecting the rights of TK holders and preserving TK. Through Article 8(j) of the convention, it establishes the responsibility of respecting, preserving and maintaining knowledge, innovations and traditional practices, and underlines the significance of: i) the state sovereignty through their territories and natural resources; ii) the prior informed consent and; iii) the fair and equitable benefit-sharing of the eventual commercial use of traditional knowledge systems (CBD n.d.a).

Although several signatory countries did not incorporate the principles of the Article I their national legislations (and some countries such as USA never ratified the CBD), the convention proved an important step in highlighting the issues around the equitable and fair use of TK and promoted its preservation and the protection of TK holders' rights. According to the outcomes of Article 8(j) as listed on the CBD website, the Working Group that was set up to ensure putting into practice its provisions has developed a set of guidelines, known as the Akwé: Kon Voluntary Guidelines, for the conduct of cultural, environmental and social impact assessments; has prepared composite reports on the status and trends of TK; designed suggested sui generis systems for the protection of TK, and ensured participation of indigenous and local communities in the convention process (CBD n.d.b).

World Intellectual Property Organization

The World Intellectual Property Organization (WIPO), an agency of the United Nations, was established in 1967 with the aim of developing a balanced and accessible international intellectual property (IP) system (WIPO n.d.a.). In 1981, the WIPO-UNESCO Model Law on Folklore was adopted which addressed the need for special laws and measures to address the protection of traditional cultural expressions (TCEs) of folklore and copyright and other rights laws which would provide the legal framework for TCE related rights (WIPO n.d.b.). As the issue of rights over TK gained prominence in international fora, in 1998, WIPO created a Global Intellectual Property Issues Division, which specifically addressed issues and concerns of TK holders by undertaking several studies on TK. Later in 2000, the WIPO Intergovernmental Committee on Intellectual Property and Traditional Knowledge, Genetic Resources, and Folklore was established, and the agency adopted more concrete steps to bring TK under the aegis of IPRs. Recognising TK and TCE as economic and cultural assets of indigenous and local communities, WIPO laid the roadmap for the protection of TK through the mechanisms of IP principles. The aim of such an exercise was to prevent the misappropriation of TK and TCE and generating and equitably sharing benefits from their use. A particular focus was on access to and benefit-sharing in genetic resources.

FAO International Treaty on Plant Genetic Resources and Farmers' Rights

The Food and Agricultural Organization of the United Nations (FAO) established the Commission of Plant Genetic Resources

in the 1980s with the objective of ensuring benefits to those engaged in conserving and developing plant genetic resources for food and agriculture (such as farmers) proportionate to the value of the germplasm originating from their fields (FAO 1996; Brush 2005). In 1994, the FAO began the International Undertaking on Plant Genetic Resources for Food and Agriculture, Article 9.2(a) of which was adopted as a new treaty by the FAO Conference in Rome in November 2001. The Article refers to knowledge "relevant to plant genetic resources for food and agriculture" and thus does not apply to knowledge relating to medicinal or industrial uses of plant genetic resources. In its scope it is considered to be narrower than Article 8(j) of the CBD. However, although it only concerns a specific component of TK systems, its underlying principle of recognising the importance of local farmers for conservation and development of genetic resources and their right to participate in decision making processes and benefit sharing can contribute substantially to the protection of agricultural TK and farmers' rights, especially when coupled with provisions of other instruments that extend to additional uses of plant genetic resources.

Agreement on Trade Related Aspects of Intellectual Property Rights

While multilateral agreements such as the CBD are essentially aspirational in character (McManis & Terán 2011), others impose concrete legal obligations on member states. The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), an international agreement administered by the World Trade Organization (WTO) is one such example. TRIPS sets down minimum standards for many forms of intellectual property (IP) regulation applicable to WTO member countries. Although it is lauded as a comprehensive (and the first) international agreement to introduce IP law into the international trading system, many see the commodification of TK assets and the liberalization of trade promoted by the WTO to be harmful to the nature of the knowledge and to the rightful owners/custodians of it.

Sui generis mechanisms

A legal regime "of its own kind" is often advocated as a suitable mechanism to address the protection and promotion of TK. *Sui generis* regimes are ideally designed to accommodate the nature and characteristics of TK, and can provide for adequate protection where more conventional IPR instruments might fail. However, such independent regulations may be a mixed blessing on account of their geographical limitations and highly variable protection. Debates concerning the establishment of sui generis regimes have focused not only on whether or not they are useful mechanisms and should override existing formal IPR modes of protection, but also on what the nature of such a regime should be and how various aspects of TK could be categorised and protected. As there are different kinds of knowledge included within the realm of TK, a sui generis model has to be flexible enough to cater to specific needs of each of these knowledge forms (Legalsutra 2012). Currently, only a few nations offer explicit sui generis protection for traditional knowledge (See for example, Romero 2005).

In India, a draft Traditional Knowledge (Protection and

Management) Act (2010) was prepared by the National Law School of India University in early 2010, and claims to be the “first ever attempt made in India for a separate and complete regime for protection of Traditional knowledge in India” (Brain League 2011). The Ministry of Environment and Forests has, in the past, advocated the need for finding alternatives to international IPRs to safeguard TK and TK holders’ rights within the country. As a first step towards protection of TK, India has created a Traditional Knowledge Digital Library. However, critics have brought to light the contradictory actions of the same ministry in its promotion of making accessible this vast repository of knowledge to patents seekers and copyright holders under international protection mechanisms (Kohli & Bhutani 2010).

A possible future for harmonised approaches

While the benefits of defensive protection of TK under existing IPR mechanisms purports to be the most effective way to prevent the misappropriation of knowledge even as it grants monopolistic rights in favour of external beneficiaries, the inclusion of TK under existing IPR regimes has severe limitations and has many critics. The most widespread opposition to this inclusion comes from concerns that the increasing commodification and commercialisation of TK only accelerates the loss of social and cultural diversity and capital.

Those who advocate the creation of independent regulatory instruments often fail to acknowledge that sui generis models that are developed to counter the endowment of rights under strict laws risk being inadequate modes of protection for the TK holders and practitioners (IIED 2005). What remains clear, however, is that international sui generis systems can only logically follow national-level sui generis systems, and the creation of a such multi-tiered rights based system can be successful if international guidelines can help harmonise national regulations, in order to avoid conflicts of interest when TK or its attributes are used or provided access to, outside of their location and culture specific contexts (Mathur 2003).

Importantly, it is imperative that the objectives of protecting and preserving TK be first defined, and that the holders of TK be involved in the decision making processes that ensue. Just as there are widespread differences between governmental and non-governmental organisations and academics and scholars regarding the creation of an equitable and just system of protection, indigenous and local communities themselves have been divided on how they choose to share their knowledge, and how they envision protection and promotion of their ways of life (WIPO 2001). While some have been more open to the idea of incorporating IPR modes of protection (through patents, copyrights, trade marks, etc.), others believe that only through a thorough revision of conventional instruments to incorporate intangible and transient characteristics of TK, can its protection be ensured.

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Traditional Ecological Knowledge: The Key to Effective Fisheries Management



Photo credit: Adam Jones adamjones.freesevers.com

Projects of colonisation and the dominance of certain streams of Western science viewed askance the validity of traditional knowledge (TK) of indigenous communities across the world. Such knowledge began to be termed 'primitive', and was thought to be based on superstition, with little to recommend its integration into the mainstream understanding of nature. This view found its way into state projects of conservation and modern methods of resource management, although the absence of TK did little to improve resource management.

Over the last two decades, an interest in what is widely called 'traditional ecological knowledge' (TEK) emerged. An array of anthropologists, conservation biologists, ethnobiologists and others began to point out the contributions that TEK could make to our modern systems of conservation and resource use. In this article, we feature specific conceptual contributions made by fisheries scholars such as Fikret Berkes and John Kurien in our understanding of TEK. We juxtapose this with the critical advocacy efforts of civil society organisations towards mainstreaming TEK into present day fisheries management.

In their paper titled 'Rediscovery of traditional ecological knowledge as adaptive management', Berkes *et al.* (2000) highlight the similarities between the approach to ecological management followed by various traditional communities and the discourse on adaptive management. According to the authors, TEK is a combination of observational knowledge, traditional practices and cultural beliefs handed down over generations through social mechanisms built into the community's culture. In the paper, TEK is broadly categorised into: a) practices found in conventional resource management as well as traditional societies; b) practices abandoned by conventional management but still found in certain local societies; and c) practices related to complex systems that are found in traditional societies but rarely in conventional management. Examples of the former category include regular monitoring of resources as seen in the Tukanó people of Columbia; total protection of species or protection during vulnerable life stages such as breeding, and seasonal restriction of harvest as seen in the Hindu-Kush.

Practices such as multiple species management seen in the case of integrated farming practices, resource rotation as practised by many pastoral groups and succession management were once removed from the conventional management handbooks, but are slowly being rediscovered. Several indigenous groups have also evolved ways to manage complex ecosystems such as the Sahel herders of Africa, whose movements are adapted for the unpredictability of the landscape.

Another feature of TEK and its transmission is that of cultural internalisation. TEK is dependent on local social institutions becoming embedded in cultural practice and being adopted into a society's particular worldview. The presence of strong traditions and institutions help transmit this knowledge to future generations through the practice of ancient rituals, celebration of yearly festivals and mythology. In some societies, this TEK is carried by elders, local leaders or shamans, while in others, transmission of knowledge takes place through apprenticeship and hands-on learning. The practice of rituals and traditions, for instance, can eliminate the need for communities to consciously preserve this knowledge, since it is transmitted merely by them practicing their culture.

Contrasting conventional scientific approaches to resource management which assume the ecological stability of systems, Berkes *et al.* state that traditional resource management practices are more flexible since they assume that ecological

surprises are a given. TEK, with its locally crafted management rules and qualitative approach allowing for responses to ecosystem change, may help light the way to a more adaptive management system. In fact, emerging adaptive management experiments have many similar characteristics to traditional management practices. For instance, both management strategies accept that environmental conditions will change and management practices must evolve and change with it. While Berkes *et al.* do not state that adaptive management and TEK are one and the same, they argue that adaptive management could be considered the scientific counterpart to TEK as it integrates uncertainty into management strategies and focuses on increasing resilience and not on maximising yield.

Adaptive management and TEK in fisheries

The fisheries sector in India is a good example of conventional, top-down management. In his paper, 'Alternatives to conventional management: lessons from small-scale fisheries', Berkes (2003) argues that developing countries with large populations of small-scale fishers are not benefitted by the current Western approach, which largely focuses on stock assessments and tends to overlook the socio-economic needs of fisherfolk, integrated management of coastal resources and the potential for participatory management. Conventional management seeks to reduce variation in the ecosystem so as to improve predictability and maximise yield, inevitably leading to a loss in resilience. Small-scale fishers on the other hand, usually depend on a variety of species allowing them the flexibility to adapt to changes in stock size of a particular species by temporarily moving on to another. This allows for resilience both for the ecosystem and in terms of their livelihood.

Alternate management strategies for small-scale fisheries have been developed over the years with the idea that resource managers can work with users to create solutions. These approaches utilise participatory methods to access the local knowledge of fishers, which is integrated with existing knowledge and used to make management decisions. Traditional knowledge along with information from marine protected areas has been proposed as a substitute for stock assessment data, given the paucity of resources available to most small-scale fisheries managers. The chances of achieving consensus on management decisions are often improved when users are also involved in the decision-making process. Integrating TEK into the already available data ensures that there is a wider range of information available for decision-making, which is important when dealing with complex systems such as fisheries.

**'Our struggle is for the future:
ours and that of the fish" -
proverb from Asia**



Towards a world of proverbs

In his examination of various Asian coastal proverbs, Kurien (1998) establishes not just their ecological relevance, but also illustrates the social mechanism of the ‘world view of environmental ethics’, as explained in Berkes *et al.* (2000). After the 1950s, most Asian states started modernisation programmes which promoted Western craft and gear. Endogenous technology and cultural practices were discarded. Over the years, the new methods led to resource overexploitation, social conflict and decreased ecosystem resilience. In order to discover new approaches to manage Asian fisheries, researchers are now looking to the traditional knowledge of communities. Coastal proverbs, according to Kurien (1998), can sometimes provide deeper insights into solutions that encompass both social and ecological perspectives.

For instance, the saying ‘Where there is water there are fish, if we care for the water the fish will take care of us’, is an indication of the holistic approach to ecosystem management followed by coastal communities. The targeted approach of modern management focuses on specific species, forgetting to look at the ecosystem as a whole. When new, more modern technology was introduced, managers failed to take into

account the characteristics of tropical aquatic systems and as such did not allow for selectivity in catch. The ecological, social and political impacts of introducing bottom trawling have been well documented in India, Indonesia and Thailand, and stand testimony to Kurien’s appraisal of the sector.

Another proverb, ‘The sea begins in the mountains’, reflects fishers’ awareness of the link between the aquatic and terrestrial ecosystems. Fishing communities from different parts of the world have tried to highlight this link and the effect that management practices on land, especially waste management practices, have on the sea. For example, the National Fishworkers’ Forum (NFF) in India, as well as fisherfolk in the Philippines and Indonesia, have been campaigning against poor official pollution control measures that are adversely affecting aquatic systems.

A third proverb, ‘The wealth of the sea belongs to the dead, the living, and those yet to be born’, reflects communities’ understanding of the need for sustainable use of resources in order to preserve them for future generations. For most fishing communities, the act of fishing is not just a source of income but a way of life. This worldview is reflected in the proverb, ‘Our struggle is for the future: ours and that

of the fish', indicating the strong connection fishers feel with the sea. Their fate is completely intertwined with the fate of the fish. It is this recognition that fuels numerous fisherfolk campaigns to influence the approaches to fisheries development and management and to gain more control over the resources they depend on. Various fishworker federations such as the NFF in India, National Coalition of Fisherfolks for Aquatic Reform (NAFCAR) in the Philippines, the National Collective of Artisanal Fishworkers (CNPS) in Senegal, the National Confederation of Artisanal Fishworkers of Chile (CONAPACH) in Chile and the Maritime Fishermen's Union (MFU) in Canada, have been lobbying for changes in the fisheries policy of their nations.

Recognising the reservoirs of traditional information that many coastal communities possess, attempts are being made in different parts of the world to create a more participatory approach to fishery management. A study commissioned by the International Collective in Support of Fishworkers (ICSF) in Indonesia investigated the potential for integrating local knowledge and fishing practices into formal fishery management (Adrianto *et al.* 2009). Several areas in fisheries management were identified wherein local knowledge and practice should be incorporated, namely in delineating resource boundaries, allocating access and user rights, regulating fisheries activities, enforcing the law and in monitoring and evaluation of fisheries management.

Kurien, Berkes and other academics have established the role of culture and local knowledge in maintaining social-ecological order through the years. The argument for recognising TEK as a valid management knowledge-practice-belief is building with fishworkers and their support groups, adding to the

academic evidence. Together, academics and activists have established sufficient grounds for resource managers to accept resource users as part of management solutions.

In spite of the difficulty that lies in establishing them, adaptive management systems that provide spaces for inclusion of TEK in decision-making may be the key to maintaining productive capacity and resilience of socio-ecological systems like fisheries. Berkes (2003), however, cautions that such partnerships between resource managers and fishers are not easy to build. Such partnerships require the presence of strong community-based institutions; for fishers to be organised enough to be effective over longer time frames of such arrangements; for appropriate policies; and most importantly, for a state that is committed to the idea of power sharing.

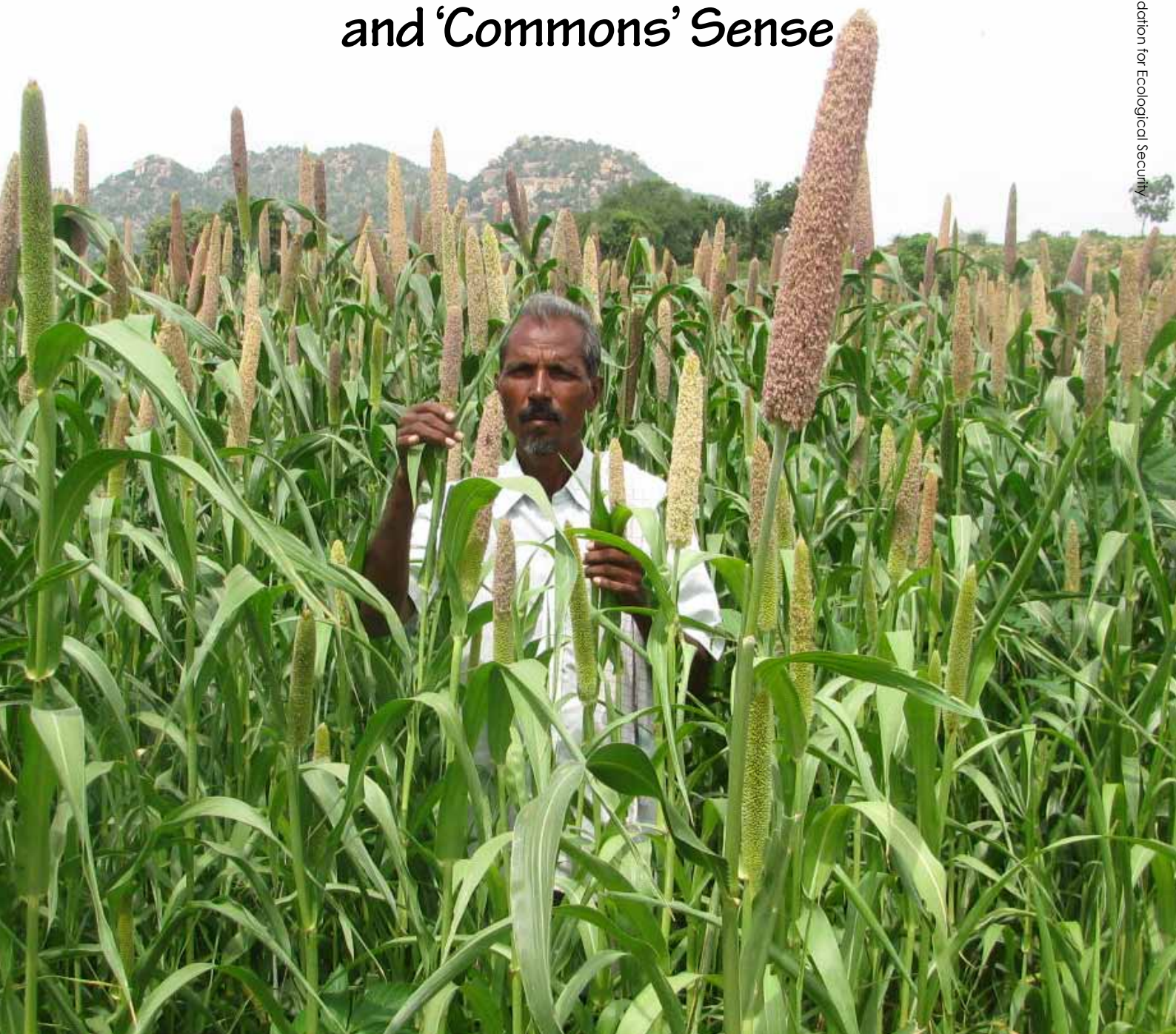
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Traditional Knowledge and 'Commons' Sense



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Traditional knowledge (TK) is the living and evolving heritage of local peoples. TK is the very identity of these peoples. It is something indigenous communities, tribal people, forest-dwellers, fisherfolk, traditional healers and just any natural-resource-dependent groups live by. They live by their own self-organised institutions, customary practices and local norms. The element of TK is not separate from them or their societies.

National legal systems may not always be in line with customary laws. The former may either ignore or be incapable of capturing in the letter of the law the real essence of the relationship that people have with their knowledge. India's legal system deals with different aspects of TK across various domestic legislation on biodiversity conservation, social welfare and intellectual property (IP). In the prevalent knowledge-based economy, national laws are giving distinct and separate treatment to knowledge. But despite the plethora of laws, there is little "legal" protection today for TK. Across these laws, TK is approached from different and sometimes even conflicting conceptual standpoints.

Perceptions about TK largely border on regarding it as public property, held in common and to be enjoyed by all. But knowledge cultures of ancient origin have not been entirely 'free for all' to use. Traditional systems of medicine, for instance, while making their cures available non-exclusively, are known to only select members of a community. The local rules determine the continuance of TK and define the traditional rights defining the sharing. These have duties built into them to guarantee that the physical resource and the intellectual know-how would pass on to future generations in at least the same condition, if not in an improved state. Yet, for ease of administration, TK is often classified by governmental agencies into that which is in the 'public domain' and that which is only known to a TK-holding community. This is also the approach taken in the draft Protection, Conservation and Effective Management of Traditional Knowledge relating to Biological Diversity Rules, 2009 (http://www.nbaindia.org/docs/tk_rules2009.pdf). Borrowing from Peruvian law, it classifies TK into two categories - 'public' and that which is 'confidential'. These Rules have not yet been finalised or notified.

The existing law to deal with India's TK related to biological resources is the Biological Diversity Act, 2002 (BDA) (http://www.nbaindia.org/act/act_english.htm). Under the BDA, the Central Government has a statutory duty to respect and protect the *knowledge of local people* relating to biological diversity. Neither the Act nor its implementing BD Rules (2004) define TK. In other countries such as Bangladesh and Costa Rica, there have been attempts to render a definitive legal status to TK that points to whom it belongs to. In India, what the legislature and the government regard TK as has to be extracted from not only a full reading of the text but also its practical treatment.

The BDA regards creators and holders of TK as rightful 'benefit claimers'. This does not necessarily imply that the law acknowledges that the TK is 'owned' by them. Most governments acknowledge TK-holders as sources of information, which gives valuable leads for the biotechnology or pharmaceutical industry. And in order for benefits to accrue to the world from TK, it is required that TK be presented in a comprehensible manner to the world in order for it to

be useful - for a "global good". In its benevolence, the state considers it only fair, just and equitable that TK-holders be given a share of the benefits (usually only monetary) that arise from the use of such TK by others. The institutional set up under the BDA - National Biodiversity Authority (NBA) is, amongst other things, tasked to effect that benefit-sharing in screening applications for both access to TK and for intellectual property (IP) rights on inventions that might be based on knowledge of a biological resource from India.

As the Indian patent law, that 'which in effect, is TK' or 'which is an aggregation of duplication of known properties of traditionally known component or components' is not regarded as an invention and cannot therefore be patented. The patent legislation also makes 'prior art' a ground to revoke a claim for novelty.¹ But there are provisions in other IP laws in India for registering products made from TK. For example, farmers are invited to seek plant variety protection (PVP) for crop varieties developed using their know-how. Artisans are encouraged to apply for geographical indications (GIs) for their traditional paintings, artifacts, and fabrics. Providing for local communities in such a way lures them into the IP system. It also pushes TK management into trade-oriented forms of organisation, which are premised on exclusive property.

TK faces perhaps its biggest challenge from modern day IP systems. With TK being commodified, IP law renders rights to that commodity. In doing so, it creates private rights over the products created from the application of TK. This diminishes the so-called 'commons' associated with TK, it now being someone's *de facto* private property. Moreover, the expiry of the term of IP protection transports that TK to the public domain, which the TK-holders might never have intended.

Confronting these challenges demands creative ideas for truly *sui generis*--their own kind of systems of knowledge treatment that are locale-specific yet recognised by international law. Each state has the space to design its state-specific Biodiversity Rules. One of the first states to make its Rules was Madhya Pradesh. It enjoins the State Biodiversity Board "[t]o devise methods to ensure protection of rights including intellectual property rights over biological resources and associated knowledge including systems of maintaining confidentiality of such information as appropriate, including the protection of the information recorded in People's Biodiversity Registers." This is also mirrored in the Kerala State Biodiversity Rules, 2008 (<http://www.keralabiodiversity.org/images/pdf/keralabiologicaldiversityrules.pdf>). This indicates that the State accepts that 'confidentiality' is necessary in some cases. It follows that TK is seen as belonging to a few who hold the knowledge in the community and that it is not desirable for the state agency to compel disclosure.

Kerala is also the only state in India to articulate its own IPR policy in the context of bio-based TK. The policy expressly puts

¹Prior art constitutes all information (see: <http://en.wikipedia.org/wiki/Information>) that has been made available to the public in any form before a given date that might be relevant to a patent's claims of originality. If an invention (see: <http://en.wikipedia.org/wiki/Invention>) has been described in prior art, a patent on that invention is not valid (http://en.wikipedia.org/wiki/Prior_art).



all TK and practices in the domain of “knowledge commons”. This has two practical implications: first, while such knowledge is available for non-commercial use by anybody, its commercial use can only be through negotiations with the existing right-holder. Secondly, any improvement made on the basis of this knowledge will have to be put back into the “commons”. Another State, which is rich in both traditional knowledge and traditional structures, is Nagaland. In the draft Nagaland Biodiversity Rules (2010), ‘(c)ommunity intellectual property’ has been defined as TK or practices *of the community...that exclusively belong to the community*. Once the TK is regarded as intellectual heritage as against ‘property’, the basic presumption is that its treatment should be different from something that is propertised. For a start, it cannot simply be a system based on rights alone.

There is a reference to TK in the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA) (<http://www.frienviis.nic.in/sdnp/actTA06.pdf>). Chapter II of the Act, which recognises and vests forest dwellers’ rights, also makes mention of the “right of access to biodiversity and *community* right to intellectual property and traditional knowledge related to biodiversity and cultural diversity.” There is little evidence of this provision having been invoked. The implementation of the FRA is pre-occupied with processing individual claims of rights to land or residence. Despite their good intentions,

some NGOs facilitating the claims process and even pro-people government officials are focused too narrowly on the rights of one person or one household. Individual claims can actually run counter to the protection of the collective intellectual heritage of local people. The specific category of ‘community forest reserves’ (CFR) in the ambit of the law could be vital to keep shared practices and the culture of sharing alive. There is genuine concern in some quarters that the extreme individualisation of rights could lead to the neglect of ‘customary common forest land’ in the traditional or customary boundaries of the village. There can be no commons sans a community and vice versa.

In India, while the Ministries of Environment (MOEF) and Tribal Affairs (MoTA) grapple with these issues, the Ministry of Commerce is also extending itself into policy-making on TK. Its agenda is driven by the imperatives of trade in TK-based products. The Ministry’s positions on TK are responses to the global marketplace. TK also surfaces in the country’s treaty negotiations, international trade and diplomatic relations. This Ministry (oriented towards industry) frames the national debate on TK protection with reference to the country’s external interactions. For instance, it covers the Inter Governmental Committee on Traditional Knowledge, Genetic Resources, and Traditional Cultural Expressions (the IGC) of the World Intellectual Property Organization (the WIPO), bilateral free trade and

investment agreements, and any multilateral trade treaties such as at the World Trade Organisation. Following a Round Table conducted by the Ministry's Department of Industrial Policy and Promotion (the DIPP) in 2009, a Task Force on Traditional Knowledge was constituted. The Task Force was meant to submit its report along with a draft enactment, if required, for 'protecting' TK, including traditional cultural expressions.

While the law and policy issues are still to be sorted out, practical measures at the national level supposedly in the name of 'protection' of TK are underway. Government-sponsored inventorising of genetic resources and related practices are going on in various departments in India. Among these, the most showcased the world over is the Traditional Knowledge Digital Library (TKDL) (<http://www.frienvicis.nic.in/sdnp/actTA06.pdf>). This electronic database collects existing literature in Indian systems of medicine—*Ayurveda*, *Unani*, *Siddha* and *Yoga*, re-recording it in digitised formats in five foreign languages, to enable international patent offices that grant patents based on Indian TK to be able to screen out applications that are not genuinely new and inventive, on the basis of the proof of pre-existing knowledge that the TKDL provides. In doing so, the TKDL

does not challenge the IP system but instead justifies its own existence. In the bargain, the common heritage of peoples is put away in another world. Given that the many 'digital divides' keep these worlds apart.

In India, there is a danger of TK becoming increasingly privatised. But in reaction, to start treating TK as "common property" would be tantamount to reverting to the colonial monarchical claim over resources by which the sovereign ruler had absolute rights. Today, this would be the modern State. The laws of this sovereign entity would then determine the terms of use, be it for the TK-holder, the public institute or the private corporation. (In any case, governments have distorted the sovereignty principle of CBD, making claims towards owning resources themselves, while they were instead, to hold them 'in trust' for the people.) Often, this is guised in the language of 'public purpose'. Those who can see through this will find that current day laws are only a civilised front for the conversion of what was 'common' into 'property'. A mere legal approach is therefore not sufficient to 'protect' TK. A more commonsense approach would be to ask the TK-holders themselves how they regard their knowledge cultures. The solution may simply lie with the common people with uncommon know-how.

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Photo credit: Kanchi Kohli



Is IP Another Bubble about to Burst?

A View from Another Civilisation

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As a child growing up in India, one of the first things I learned is a hymn to Saraswati, the Goddess of Knowledge:

Wonderful is your gift of knowledge. The more we share, the more it grows, the more we hoard it, the more it diminishes

As a grown up living in a globalised world, I am constantly bombarded by the term “intellectual property” (or IP). Policy makers repeatedly say that India should create more IP. Countless seminars extol the virtues of IP even as patents are granted, for example, for “Method for swinging on a swing” and “Method for Concealing Partial Baldness”. In the computer industry, patents are routinely granted for things that are obvious and have been known for years. Things have come to such a pass that even an industry veteran like Andy Grove was forced to say, “The true value of an invention is its usefulness to the public. Patents themselves have become products. They’re instruments of investment traded on a separate market, often by speculators motivated by the highest financial return on their investment....”

“The patent product brings financial derivatives to mind. Derivatives have a complex relationship with an underlying asset. While there’s nothing wrong with them in principle, their unfettered use has damaged the financial services industry and possibly the entire economy.”

“Do these patent instruments put us on a similar road? I fear our patent system increasingly serves those who invest in the patent products.”

When a veteran like Andy Grove becomes paranoid, you and I better watch out!

Patents were meant to reward innovation, so the question is, “How did we lose our way?”

The current model of trying to “propertise,” “privatise” and “commoditise” knowledge comes from a very mercantile, reductionist model of treating knowledge. That may be okay for other countries, which have “intellectually propertised” their

Source: <http://en.Wikipedia.org/wiki/Saraswati>



Source: http://fr.wikipedia.org/wiki/Fichier:A_Medical_Thangka_-_Root_of_Health_and_Disease.jpg



knowledge and hold the balance of power in IP Rights, but not for India which has had a long, rich tradition of free knowledge cultures like yoga, Ayurveda, mathematics and many other disciplines. It would not be far-fetched to say that many Indian traditions place a moral imperative on sharing knowledge.

Each society evolves systems that suit its own needs. Most of India's traditions of knowledge spring forth from a spiritual base, whereas America's treatment of knowledge has a mercantile bias. This is not to pass a value judgment on either. The problem arises when, in a globalising society, the two systems clash and are unable to harmonise with each other.

One of my favorite stories illustrates the importance accorded to the sharing of knowledge. After the brutal battle of Kalinga, the Emperor Ashoka was so overcome with remorse that he renounced bloodshed and embraced Buddhism. As part of his penance, Ashoka went to monasteries across the country. At each monastery, he would leave munificent donations of gold coins. At one monastery, the emperor left behind one solitary gold coin. When his perplexed followers asked him to explain, Ashoka said that the abbot of the monastery was a great man but he did not share his knowledge with others.

This is a deep-seated ethos that is thousands of years old. This is the ethos that created open knowledge traditions like yoga, Ayurveda, etc, that are freely used by all. However, when India seeks to use Western "their" "intellectual property" (allopathic medicine, software and business method patents, etc.) we are told, "pay up or else..." Talk about an unequal exchange!

The contrast is best illustrated by what happened with Bikram Yoga taught by celebrity yoga teacher, Bikram Chowdhury, who makes a fortune teaching yoga to Americans. Bikram copyrighted a series of 26 postures and two breathing exercises practiced in a room heated up to 105 degrees Fahrenheit. Note that Yoga is a body of knowledge which has been free from copyrights, patents and "intellectual property" for more than 2,000 years. When asked why, Bikram said that he sought legal protection because "it's the American way."

Each society evolves systems that suit its own needs. Most of India's traditions of knowledge spring forth from a

spiritual base, whereas America's treatment of knowledge has a mercantile bias. This is not to pass a value judgment on either. The problem arises when, in a globalising society, the two systems clash and are unable to harmonise with each other.

Sadly, most of India's thinking around legal protection of knowledge has been "derivative" in nature, a shoddy cut and paste job from the "mature IP systems" of the West. However, as the Bilski case shows [Bilski v. Kappos, 130 S. Ct. 3218, 561 US ___, 177 L. Ed. 2d 792 (2010)], even these "mature IP systems" have second thoughts about how they treat knowledge, or in this specific case, business methods. I have argued before as well that the litigation-ridden path followed by the US in granting software and business method patents is something India must avoid at all costs.

I could go on, but let me just end with one small piece of evidence. As I mentioned earlier, I have grown up in an Indian tradition that believes that knowledge grows by sharing. Does this wisdom hold true in the Internet era?

In September 1991, Linus Torvalds released 10,000 lines of code for building an operating system, under the General Public License. The GPL license encouraged people to take these 10,000 lines of code, modify it and share the resulting improvements with the rest of the world. A recent study by the Linux Foundation estimated that the code base for the Fedora 9 Linux distribution is now 204 million lines of code! This is one of the finest examples of collaborative innovation that has been made possible by the growth of the Internet. With 1.4 billion people connected to the Internet and another 600 million set to join up in the next two years, the Internet is the greatest collaborative platform in the history of mankind. The attempt to "propertise" knowledge in the Internet era therefore is doomed to fail. Instead, we will see knowledge returning to its rightful place in the commons and the open source principles of collaboration, community and the shared ownership of knowledge being applied to thousands of disciplines. As the commercial distributions of Linux demonstrate, even when knowledge lives in the commons, it is possible to build profitable business models around it.

When we look back on our times, we may find that the term "intellectual property" has taken its place along side another archaic term, "horseless carriage". Both are attempts to impose metaphors of the past on the future. And the folly of our times is that we treat inexhaustible resources like knowledge as finite resource and treat finite resources like oil and forests as infinite resources. The sooner we turn these attitudes around, the better it will be for the future of mankind.

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