



Intellectual, Biological, and Cultural Property Rights in the HKH

The notion of property is being extended to indigenous knowledge, cultural traditions, and biological diversity. Mountain communities have evolved a tremendous range of practices to suit their diverse ecological and socioeconomic environment and are so positioned with strength. However, their interests are not adequately addressed in many of the recent trade agreements; although they find a place in some of the non-binding principles such as Agenda 21. The issue of intellectual property rights (IPRs) over bio-cultural resources is a matter of great concern in this respect. This paper attempts to introduce issues and developments in the arena of IPRs and implications thereof upon the local mountain communities in the HKH region.

The Context: Changing Concept of Property

The global trend of progress demands that countries be a part of the world market economy and thus each country is subject to various international agreements that are expected to ensure a steady development in this direction. The eight countries of the Hindu Kush-Himalayan region fall into the lowest rung of economic development with five countries falling in the least developed country category (Afghanistan, Nepal, Bhutan, Bangladesh, and Myanmar) and the other three in the low income developing country category (Pakistan, China, and India). If the scale of economic activities in the mountainous regions alone of the latter three countries is considered, the Gross National Product (GNP) of these regions in each country is comparable with the other LDC neighbours. The reasons for such a sorry state of affairs are many and diverse; but they include the continuing process of the flow of resources from the mountain regions without involving much local value addition, thus rendering them virtually free.

For most of human history, security and the path to power have been vested in land: land to graze animals, to gather food and medicine, collect fuelwood, and build shelters. While this is true for individuals in settled communities, nomadic ways of life invested more authority in community decisions. However, in all these variations from individual to community control, the access to and the use of common land was governed by rules that were often linked to seasonal, biological, and cultural factors. This scenario rapidly changed with the onset of industrial revolution and increasing commercial value of the common resource. In the context of the HKH countries, much of the community land was brought under government control to meet the raw material requirements; initially by the colonial rulers and later by the national bureaucracies. While there has been some success in the recent past to revert the control over common property to communities, a new form of invasion has taken place.

This time, it is the unearned use of indigenous knowledge, cultural traditions, and biological diversity (which are considered to be the 'raw material' for future industrial needs, particularly the biotechnology industry).

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Emergence of IPRs as a Means of Economic Dominion

The world's present intellectual property system has its roots in 19th century European efforts to promote the interests of private industry in scientific and industrial growth. There are five major forms of intellectual property rights: patents, plant breeders' rights, copyright, trademarks, and trade secrets (as explained briefly in Box 1). These laws give inventors monopolies and discourage competitors.

Box 1: The Five Major Forms of Intellectual Property Rights

1. *Patent*: A legal monopoly that covers a wide a range of products and processes, including life forms. To be patentable, inventions must meet three basic criteria. They must be novel, useful, and non-obvious.
2. *Plant Breeders' Rights*: A law that grants a plant breeders' certificate to those who breed new plant varieties. PBR is governed by two international agreements under the Union for the Protection of New Varieties of Plants (UPOV).
3. *Copyright*: A legal framework intended to protect artistic and cultural works, such as books, illustration, photographs, and television programmes, from being duplicated and/or transmitted without the authors' permission.
4. *Trademarks*: A legal monopoly over a name or a linguistic or visual symbol.
5. *Trade Secret*: An intellectual property right used when inventors do not wish to patent in order to protect themselves from competitors. Unlike patents, these do not require that inventors register them and have no time limit.

In return for depositing a sample of the patented product or process and describing it so that others skilled in the art can replicate it, inventors get the right to:

- exclusive monopoly over the invention for 17 - 25 years,
- royalties (a surcharge above the normal sale price) on the use of their invention, and
- control access and set the conditions for the sale of the invention - the right to deny or vary costs depending on the customer and market conditions.

One of the first international agreements, the Union for the Protection of New Varieties of Plants (UPOV), was signed in 1961 to protect the plant breeders' rights (PBR). This was the time when public and private seed corporations were beginning to expand business across the globe as part of the Green Revolution technological package. There are two operative UPOV conventions, dated 1978 and 1991. The 1978 convention allows farmers to save and replant PBR-protected seeds from their harvest, while the 1991 version restricts the rights of farmers to save seed and make PBRs more like patents, extending the scope of the monopoly granted to the certificate holder. The first patent on a genetically engineered microorganism was granted in the United States in 1980. In 1987, the US Patent and Trade Mark office ruled that animals are patentable too.

Current patent regimes allow for exclusive monopolies, meaning that patent-holders may arbitrarily set the conditions for access to their inventions. Many patent-holders resort to manipulative practices by setting different prices and conditions for marketing their products through other companies, thereby excluding some buyers completely. Small and upcoming companies are faced with restrictive trade practices as they do not have the market or product range of the bigger firms. Patents, therefore, are scale-biased in favour of transnational corporations.

The late 20th century has seen the further development of the patent system around life forms that are products of biotechnology and industrial manipulation of genetic materials. **It is based on the idea that genes are inventions and products because the process of isolation, extraction, and *ex-vivo* replication of biological material requires techniques that human beings alone are capable of putting into practice and which nature is incapable of accomplishing itself.**

The newly established World Trade Organization has a mandate to implement the General Agreement on Tariffs and Trade (GATT), which has a specific covenant on Trade Related Intellectual Property Rights (TRIPS). The TRIPS section of GATT may be the most ambitious multilateral agreement ever made in the area of intellectual property. It stipulates that all signatories must conform to industrial country standards of intellectual property law. The TRIPS agreement includes a provision (Article 27, 3b) that excludes from patentability, '*plants and animals other than microorganisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes*'. The same provision also guarantees '*the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof*'.

Together with the above two, another provision of TRIPS, which makes it mandatory for all members to 'establish a system for the grant of exclusive marketing rights', has been viewed as a threat to the interests of local communities in third world countries. Developing countries have until the year 2000 to implement the intellectual property provisions and the least developed countries have until 2004; with possible extensions in both cases.

Implications of IPR Mechanisms for Mountain Communities

The above-mentioned concepts of intellectual property differ radically from most rural and indigenous systems of knowledge and innovation prevalent in mountain communities. Here, society perceives knowledge and innovation as a collective creation and not as commodities. This community creation of knowledge is held in trust for future generations and it is unheard of for farming communities to grant unlimited rights to land and resources, or to permit ownership of the process of life. Concepts such as stewardship or custodianship come much closer to rural realities than those such as exclusive monopoly or intellectual property. For example, it is widely recognised that traditional farming practices have contributed immensely to the promotion and management of agricultural biodiversity and in the development of modern varieties. However, genetic material from a landrace, patented by a breeder, gives him all claims to the material, whereas the farmer from whose farm the material was taken has no rights over it. The logic is that, even when a landrace is used in a commercial plant variety, breeders almost always extract and adapt a gene or gene complex to make one of several hundred components in a new plant variety. Considering the alternative option for a farmer trying to obtain PBR, to be eligible for protection, he/she would have to prove that the variety is:

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distinct: distinguishable by one or more characteristics from any other variety - the existence of which is a matter of common knowledge;

- stable: remain true to its description after repeated production or propagation;
- uniform: homogenous with regard to the particular feature of its sexual reproduction or propagation; and
- novel: should not have been offered for sale or marketed in the source country, or for longer than four years in any other country.

The farmer or his community would have to prove that they were the only ones to use the landrace or breed the cultivar in addition to all the above legal requirements. More so, some of the prerequisites are actually in conflict with the farmers' breeding priorities as they would prefer varieties that possess variability and adaptability and thus try to create cultivars with intra-variety genetic diversity. This is just one example of how the different forms of patents are biased towards the industrial society. A balanced picture of the advantages and disadvantages of the various forms of IPRs for local communities is presented in Box 2.

Box 2. Advantages and disadvantages of various IPR mechanisms for local communities

Mechanism	Advantages	Disadvantages
Patents	Can safeguard knowledge legally Available in most countries	Limited term of protection Applications expensive and require legal advice Protect knowledge of individual inventors, not collective knowledge of communities Difficult and expensive to defend
Petty patents	Can safeguard knowledge legally More traditional knowledge may be protected than under patent Compared with patents, less expensive application procedure and shorter and less stringent	Available only in a few countries No international agreements to facilitate application in different countries Shorter period of protection than patents examination
Copyright	Easy to obtain Long period of protection	Protects expression of ideas but not knowledge Protection period not indefinite Subject matter must be in a physical form
Trademarks	Inexpensive Indefinite protection period, although may have to be renewed periodically May attract more customers to products of indigenous traders and trading organizations	Does not protect knowledge <i>per se</i>
Trade secrets	Can protect traditional knowledge with commercial application Can protect more knowledge than the other IPR types Can be traded for economic benefits by contract Inexpensive to protect	Available in fewer countries than patents and copyrights

Source: Possey and Duffield 1996

Four member countries of the HKH region have already been accepted for membership in the World Trade Organization (WTO) and are thus required to reform their patent laws in accordance to the provisions of GATT and TRIPS. These countries are Pakistan, India, Bangladesh, and Myanmar; while China has the status of an observer and Nepal is also trying to gain membership. Further discussion on the likely implications of these agreements on the existing patent laws of most of these countries can be well illustrated by taking the example of India. While current Indian laws provide patent protection in the food and drugs sector for seven years only, the new provision would need 20 years protection. At the same time, new provisions prohibit a ceiling on the amount of royalty that can be charged on a patent. This would clearly imply longer monopoly periods and at substantially higher prices. A provision that goes together is that of abolition of the system of awarding 'process' patents in chemicals and pharmaceuticals to 'products' patents only. These will have tremendous impact on the domestic manufacturing industry. These changes are likely to affect everyone in society, particularly in terms of access to the two basic necessities of food and medicine, as the influence of new provisions would stretch right from farmers, scientists and breeders, consumers, and state-financed-research institutions to the overall state of markets and technology.

To begin with, farmers will have to pay expensive patenting fees to be able to buy genetically-engineered seeds, and these will not only be more expensive than the conventionally-bred seeds but also cannot be saved for the next crop as the patented variety belongs to the patent holder. A higher price for practically all other inputs, particularly agrochemicals, would be baneful to small farmers. Only a small section of farmers with relatively large land holdings will enjoy the economies of scale and will be able to sustain themselves.

Mountain farmers are particularly disadvantaged on account of being small and working with low capital and high risk. The vagaries of the weather conditions predominant in mountain areas will place undue stress and risk on farmers. The lifting of the existing regime of subsidies being advocated under the GATT provisions would further deprive farmers. At the same time, the capabilities of national and state agricultural research agencies to provide new varieties would diminish as scientists and breeders would be denied access to patented varieties for further breeding. Progress and innovations in breeding will depend on the affordability of patent fees. Live resources, such as genes and living cells as well as characteristics such as these of 'high protein' and 'dwarf' would become the private property of biotechnology companies. Research and extension will suffer further because of restrictions on the free exchange of information, and increased privatisation of research will lead to further internalisation (secrecy) of research results. As a consequence, the current problem of global food supply may be further aggravated and are likely to influence those communities most that are not self-sufficient in food production such as the population of the HKH region.

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Significant Steps to Safeguard the Future Interests of Mountain Communities

In the context of the above discussion and emerging issues, considerable thinking and advocacy campaigns to safeguard the interests of local communities are underway throughout the world.

To begin any sound argument, a more systematic analysis of the contribution that local knowledge and resources have made and continue to make should be understood in economic terms. Box 3 provides a brief overview of the role of community knowledge in global development and Figure 1 provides the royalty losses to the northern countries on account of pirated pharmaceuticals and agricultural products being manufactured and sold in the south; and this is compared with the reverse royalty losses to southern countries if the north paid royalty on the use of indigenous knowledge taken from the south by the north. Although, the IPR regime being promoted currently is trying to overcome the losses to the industrial north, it fails to provide mechanisms to financially safeguard the contributions of local communities.

In the wake of these sharp realities and rising awareness on these issues, many alternative views are being promoted. One significant development on these lines is the concept of Farmer's Rights. As



Source: RAFI

Box 3: The Role of Community Knowledge in Global Development

Health and Medicine	Food and Agriculture	Environment and diversity
Local: 80% of the South's medical needs are met by community healers using local medicine systems.	Almost 90% of the South's food requirements are met through local production. Two-thirds are based on community farming systems.	Almost 100% of the biodiversity hot spots are in areas nurtured by indigenous communities and/or bordering the South's farming communities.
Global: 25% (and growing) of western patented medicines are derived from medicinal plants and indigenous preparations.	90% of the world's food crops are derived from the South's farming communities and continue to depend on farmers' varieties in breeding programmes.	The wild relatives of almost every cultivated crop are found in biologically-diverse regions of the South and are nurtured by indigenous communities.
Market: The current value of the South's medicinal plants to the North is estimated conservatively at US\$32 billion annually.	The direct commercial value derived from farmers' seeds and livestock breeds is considerably more than US\$5 billion a year.	90% of the world's most biologically-diverse lands and waters have no government protection and are nurtured exclusively by rural communities.

Source: RAFI

introduced in the FAO's International Undertaking on Plant Genetic Resources, farmers' rights mean rights arising from the past, present, and future contributions of farmers to conserving, improving, and making available plant genetic resources. These rights aim to:

- assist farmers and farming communities, in all regions of the world, especially in areas of origin/diversity of plant genetic resources (useful for HKH farmers), in the protection and conservation of plant genetic resources and of the natural biosphere; and
- allow farmers, their communities, and countries in all regions to participate fully in the benefits derived, at present and in future, from the improved use of plant genetic resources, through plant breeding and other scientific methods.

While the directives and principles mentioned above are soft laws, there are more legally binding treaties such as the Convention on Biological Diversity (CBD). All the eight HKH countries have either signed and/or ratified the CBD and its Article 8(j) states that Parties are obliged to:

- ensure that a fair share of the benefits go to indigenous and local communities when others use their knowledge or the resources that they have conserved;
- ensure that people of indigenous and local communities receive recognition and acknowledgement for their contributions to universal knowledge and welfare;
- help indigenous and local communities develop their own economic uses of their traditional knowledge and associated biological resources, consistent with traditions of sustainable use; and
- ensure protection of the rights of indigenous and local communities over their knowledge, innovations, and practices as a part of the broader goal of achieving protection of their cultural heritage.

Advocates of these clauses are arguing (Downes 1997) that the term 'equitable sharing of benefits' should be defined by reference to the costs incurred by indigenous and local communities in conserving their knowledge and associated biodiversity, rather than by reference to the value patents or an 'effective sui generis system' or both.

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enous and local communities. In a special report of the UN Economic and Social Council (ECOSOC) on cultural and intellectual property rights, heritage is defined as "everything that belongs to the distinct identity of a people and which is theirs to share, if they wish, with other people. It includes all things which international law regards as the creative production of human thought and craftsmanship, such as songs, stories, scientific knowledge and artworks. It also includes inheritances from the past and from nature, such as human remains, and naturally occurring species of plants and animals with which a people has long been connected." This concept of heritage is applicable to both the CBD and the FAO International Undertaking on Plant Genetic Resources.

This brings us to one of the greatest drawbacks of the currently promoted property rights' system which assumes that property rights are individually or privately held. It is easy to challenge this

Box 4: ICIMOD/UNESCO Project on Ethnobotany

UNESCO and ICIMOD, with financial support from DANIDA, have launched a three-year project on 'Promotion of sustainable and equitable use of plant resources in the Hindu Kush-Himalayan region through the application of Ethnobotany'. The project seeks to assimilate the following public policy issues and principles in its approach.

- The principle that all development projects addressing issues related to agriculture, livestock and pasture, agroforestry, forestry, land-use planning, watershed management, and other natural resources' management fields should take into account the **traditional wisdom and expertise of the local inhabitants**.
- The principle that the interaction between people and nature must be addressed in conservation projects that propose setting aside productive lands as protected areas for the conservation of biodiversity. They should take into account the **perceptions, uses and traditional methods of management of natural resources by the local inhabitants**.
- The principle that the **intellectual property rights of people with indigenous knowledge, including special ethnobotanical knowledge, should be respected**.

The project so far has carried out training workshops in five of its member countries in collaboration with national institutions specialised in this field. In the context of intellectual, biological, and cultural property rights, these workshops have helped develop a better understanding of the intricacies involved and what can be done at the local level by indigenous community groups to protect their own rights, invited experts involved in such processes to speak to the participants primarily on farmers' rights, and thereby also helped establish networks of those interested in, as well as working on, this aspect.

under the ECOSOC provisions that *'the protection of cultural and intellectual property is connected fundamentally with the realisation of the territorial rights'* and tenurial rights are recognised by the 1989 ILO Convention 169: *'the right of ownership, collective or individual, of the members of the population concerned over the lands which these people traditionally occupy shall be recognised.'* Both heritage and territoriality are elements of communal rights that have been recognised for indigenous communities by international law. The HKH region has a vast diversity and spread of indigenous communities, and respective national governments should translate the provisions of these directives and principles into policy and action while negotiating other international agreements. These elements of communal rights must also be extended to other local farming communities in the HKH. The experience generated in the region clearly demonstrates that increased community control over resources is critical to the improvement and widening of development options (ICIMOD 1996). ICIMOD projects, such as the Participatory Natural Resources' Management, the HKH-Ethnobotany (Box 4), Tourism for local Community Development, are contributing towards increased involvement of local communities in safeguarding their rights through micro-and macro-policies. The fight for greater intellectual, biological, and cultural property rights is central to the wider struggle for people's rights to gain control over their livelihoods; and this is basic to the sustainable development paradigm.

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Acknowledgements

This paper is based on the information available in many public interest publications brought out by Rural Advancement Foundation International (RAFI), Canada; Genetic Resources Action International (GRAIN), Spain; Gene Campaign, India; Southeast Asia Regional Institute for Community Education (SEARICE), Philippines; and Programme for Traditional Resource Rights, Centre for the Environment, Ethics and Society, Oxford University, UK.

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Established in 1983, ICIMOD is dedicated to the cause of poverty alleviation and environmental conservation in the Hindu Kush-Himalayan range of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. ICIMOD is a focal point for documentation and information exchange, training, applied research, and demonstration on a wide range of issues affecting mountain people.

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MARCH
1998