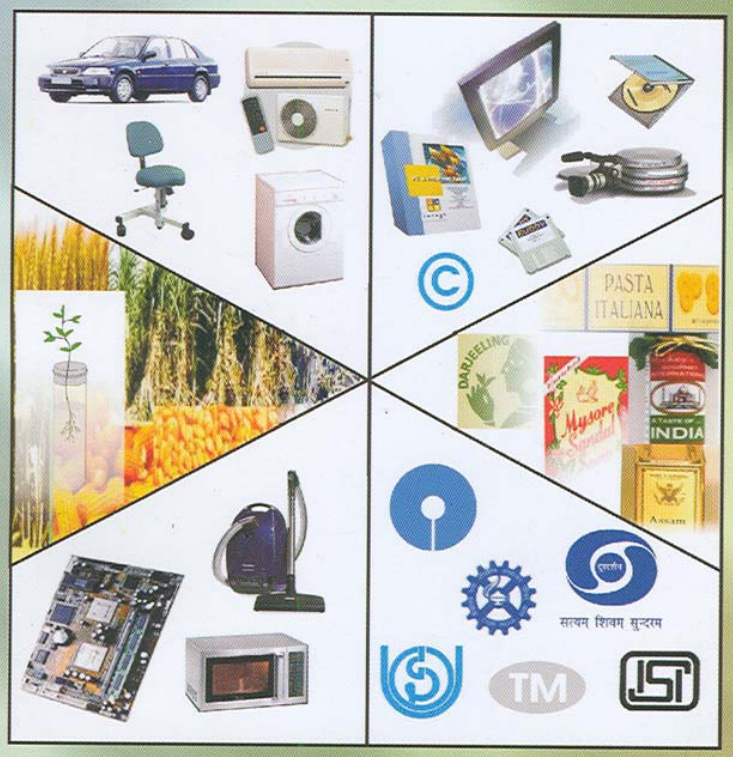
Intellectual Property Rights, Biodiversity and Traditional Knowledge



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Monographs on Globalisation and India – *Myths and Realities*, #13

#0706

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Preface

Given the increasingly open international trade and investment regime, protection of intellectual property rights (IPRs) assumes significance. According to many experts, a functional domestic system of protecting IPRs could enhance more investment and trade leading to more growth of an economy. However, the moot question is: will it necessarily lead to poverty reduction? The importance of this question can be gauged from the fact that the new regime of protecting IPRs following the Agreement on Trade-Related Aspects Intellectual Property Rights (TRIPs) by the World Trade Organisation (WTO) Members is intrinsically related with the livelihood issues of farmers and other marginalised sections of our society.

This monograph attempts to address this question without making an effort to create any opinion. In other words, a set of questions related to this overarching question has been addressed by placing some facts in simple language so as to enhance public knowledge on the relevant issues. Over the last one and half decade, CUTS International has been offering reader-friendly information on such issues relating to globalisation and its impact on India and other developing countries. A series of monographs (besides other publications such as briefing papers, research reports) is being published since the year 2001. This is the 13th monograph in this series.

This document starts with a brief account of different types of IPRs, including a brief overview of the WTO TRIPs Agreement. Next, it focuses on biodiversity and its relationship with the IPR regime. The benefits of biodiversity and the Convention on Biological Diversity (CBD) have been explained in the following section.

The relationship between the CBD and the WTO TRIPs Agreement has been analysed, including comparing the relevant provisions of these two regulatory regimes. Given that in recent times, biotechnology has assumed a significant role in affecting our biodiversity, its importance and relevance have been analysed.

Different regimes and models of protecting the IPRs of farmers and other marginalised communities (such as traditional knowledge, *sui generis* system) have been explained in detail. Issues relating to biopiracy and its relationship with traditional knowledge and other forms of IPRs have been dealt with.

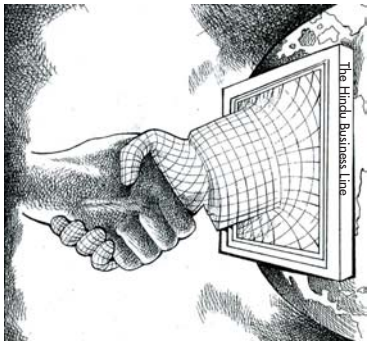
Finally, the relevant Indian laws in this respect and context have been explained in brief. All questions have been addressed by citing examples so that this monograph can become an effective tool for enhancing economic literacy in countries like India.

Jaipur
April 2007

Bipul Chatterjee
Deputy Executive Director

1

What are Intellectual Property Rights and what are the different types of Intellectual Property Rights? What is the TRIPs Agreement?



The inventor of a machine, the author of a book, or the composer of music 'own' their work. As per this ownership, their work cannot be copied or purchased without consideration of their rights. Similarly, original industrial designs of furniture, wallpaper and the like seem naturally to be owned by someone or some organisation. Each time when such 'protected' items are bought, a part of what the buyers pay goes back to the owners as recompense for the time, money, effort and thought they put into its creation.

IPRs are awarded to individuals or organisations mainly for inventions and creative works, giving the creator/inventor the incentive of a right to prevent others from unauthorised use for a limited time period.

IPRs can be defined as a composite of "ideas, inventions and creative expressions", plus the "public willingness to bestow the status of property" on them. It allows people and organisations to own their creativity and innovation in a manner that allows them to buy and sell it, just as physical property. The owner of an IP has a right to control and be rewarded for its use. It is based on the premise that such a right to ownership and reward would encourage further innovation and creativity, to the benefit of all.

The main legal instruments for protecting IPRs are patents, copyrights, industrial designs, geographical indications and trademarks.

Besides the above-stated forms of protection, s*ui generis* (means "of its own") forms of protection have also emerged, addressing the specific needs of knowledge producers (for example, utility models, plant breeder's rights, integrated circuit rights). These systems are useful for protecting innovations that cannot fit into the classical forms of IPRs.

Furthermore, in many countries "trade secrets" are enforced to protect undisclosed information that gives a competitive advantage to its owner. It is another form of IPRs.

The various types of IPRs and a short description of each are given below.

Patents are the best-known form of IPRs. The patent holder has the right to exclude anyone else from using, making and selling the patented subject matter, for a certain period of time, unless authorised by the holder. Patent owners are vested with exclusive, monopoly ownership rights over the patented subject matter. For instance, Ciprofloxacin of Bayer was a patented drug for Anthrax and the patent was valid until 2003. *Neem* tree has 90 patents granted on it worldwide.

Trademarks are distinctive signs, such as words, logos, shapes, slogans, etc., provided to identify certain goods or services as those produced or provided by a specific person or enterprise. They aid the consumers in distinguishing between goods and services of one producer from another. Brands are also trademarks. 'Tata Tea', 'Microsoft', 'Coca Cola', 'Boroplus', 'Godrej' are examples of well-known trademarks.

Geographical Indications are granted on the basis of the specific quality, name and reputation of a particular good originating in, and/or attributable to, a particular geographical region. They are close to trademarks, as they do not protect the good, but prevent false use of its name. Goods such as Mysore Silk, Darjeeling Tea, Champagne (originating in Champagne, France), Scotch whisky are examples of geographical indications of products.

Industrial Designs protect the artistic aspects of an object such as the shape, texture and pattern, instead of technical features such as the design of jewellery, the particular shape of a car, the designs on a wallpaper or carpet, the shape of a watch, etc.

Trade Secrets cover information that is commercially valuable, such as production methods and business plans. They are protected, as long as they

remain secret by laws, which prevent acquisition by commercially unfair methods and unauthorised disclosure. However, discovery of information by accident, or reverse engineering, is not deemed illegal. Examples of well-known trade secrets are the formula for Coca Cola and the source code for Windows of the Microsoft Corporation.

All the above-stated IPRs are categorised as "industrial property", since they are functional, commercial innovations. The other category of IPRs is categorised as "artistic and literary property" such as copyrights.

Copyrights are similar to patents, which identify the creator of artistic or literary works or computer programmes as the author of the work and to derive royalties from its use. It prevents unauthorised copying, translating, broadcasting, etc, without the permission of the creator. However, limited use of copyrighted material is allowed without prior permission. All academic books, novels, music and movies available as CDs or audiocassettes are copyright protected, unless otherwise mentioned.

IPRs are closely related to trade and a right balance is to be achieved to promote legitimate trade without the misuse of protection and enforcement by countries and organisations. Therefore, the Agreement on TRIPs, was agreed by the General Agreement on Tariffs and Trade (GATT) members during the Uruguay Round of multilateral trade negotiation. The TRIPs Agreement gives the WTO – the successor of the GATT, limited authority to enforce IPRs and obligates the WTO Members to IPR laws according to the provisions of this Agreement.

India being a signatory of the Marrakesh Agreement establishing the WTO was obligated to bring its laws and enforcement efforts with regard to the IPRs as TRIPs-compliant as on January 01, 2000.

The most important aspect of the TRIPs Agreement is that it imposes certain minimum requirements in relation to the protection of IPRs that the WTO Members must implement as per their national laws and other provisions.

The TRIPs Agreement covers a broad range of IPRs, including patents, trademarks, geographical indications, trade secrets, coyright. It also includes a number of forms of IPR, which have implications for biodiversity conservation, such as *sui generis* systems for the protection of plant varieties.

Box 1: A Tale of Two Jewellers in a Battle of Trademarks

Titan Industries Ltd started a jewellery brand called *Tanishq* and opened many boutiques and outlets in India. *Tanishq* is a registered trademark of the company. A jewellery showroom in Chennai, near the *Tanishq* showroom, started operating under the name *Kanishk*. The company filed a case restraining the latter from using the name since it is phonetically similar to *Tanishq* and, hence, deceptive and misleading for the public. The defendant argued that the name had no relation with *Tanishq*, since it is the name of an ancient Indian ruler, *Kanishka*. The case was dismissed on the grounds that there was no evidence to suggest that the name *Kanishk* was causing any false impression or confusion amongst the public regarding the company or its products.

2

What is Biodiversity? What are the benefits of Biodiversity? What is the Convention on Biological Diversity?

Biodiversity is the sum total of living things, with their associated ecological processes, and specifically refers to the variability and variety within species as well as among the ecological processes that connect them. In simple words, biodiversity is the variety of life: the different plants, animals and micro-organisms, their genes and the ecosystems of which they are a part.

More specifically, biodiversity means processes that create and maintain variation. It is concerned with the population, the diversity of species within communities and the range of ecological roles within ecosystems. There is no single answer to what exactly biodiversity means. It can refer to genetic diversity, species diversity or the diversity of environments or habitats. Some believe that it has simply replaced the terms 'nature' or 'wilderness'.

Biodiversity has provided many benefits. Some of these benefits come in the form of goods that can be directly valued because they provide something that can be extracted and sold. These goods include everything – from all the domesticated agricultural crops that form the basis of our food supply to medicines that protect and cure us – as well as the fibres that make the clothes that we wear.

Thus, biodiversity is widely valued as a food pantry, genetic storehouse for biotechnology and a place to retreat from hectic life.

The conservation of biological diversity seeks to maintain the life support system provided by the nature in all its varieties, and the living resources essential for ecologically sustainable development.

Biodiversity also provides critical indirect benefits to humans that are difficult to quantify, because they could not be valued in terms of money. These benefits encompass ecosystem services, such as air and water purification, climate regulation and generation of moisture and oxygen. The world cannot afford to replace these services. Therefore, ecosystem should be protected.

There are two primary causes for the large-scale destruction of biodiversity. First, habitat destruction due to mega-projects such as building of dams and highways and mining operations in forest regions rich in biological diversity. Second, the technological and economic push to replace diversity with homogeneity in forestry, agriculture, fisheries and animal husbandry.

The CBD is an international agreement, which was signed by 150 governments at the 1992 Rio Earth Summit and to which India is also a signatory. This Convention is dedicated for promoting sustainable development and ensuring fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. It provides a mechanism to ensure conservation and sustainable use of biodiversity for the present as well as the future generations.

It recognises that biological diversity is about more than plants, animals and micro-organisms and their ecosystems. It is about people and their need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment to live in. Incidentally, many of these needs are also enshrined in the United Nations Guidelines for Consumer Protection, 1985 – particularly under the Right to Basic Needs and the Right to Healthy Environment. Thus, protection and sustainable use of biodiversity means enhancement of consumer rights.

The objectives of the CBD are threefold:

- conserve biological diversity;
- use the components of biological diversity in a sustainable manner; and
- provide fair and equitable sharing of the benefits arising out of the world's genetic resources.

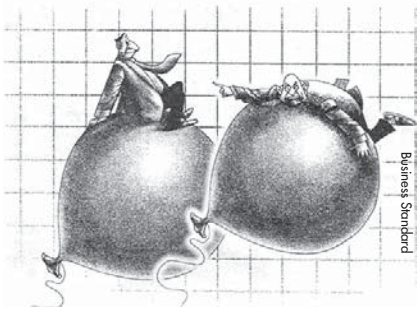
Box 2: Basic Principles of the CBD

The CBD affirms:

- The importance of the contribution of the peoples of developing countries to the world's biodiversity.
- That Biodiversity is not a gift of nature, but the result of community activities where women in particular play a vital role.
- The fact that biological diversity is intrinsically co-dependent with diverse cultures, knowledge systems, and lifestyles, which generate and maintain it.
- That rights for local communities as well as states are necessary to protect biological resources and to encourage conservation.
- That programmes and policies must be implemented to promote conservation and sustainable use, as well as the sharing benefits arising from the use of biological resources.

3

What is the relationship between the TRIPs and the CBD?



The adoption of the CBD, which provided a framework for the realisation of sustainable development, was followed by the TRIPs Agreement where the emphasis was on protecting the rights of the inventors. The relationship between the TRIPs Agreement and the CBD is multifaceted and complex.

Three primary issues deserve consideration in examining this relationship:

- promotion of environmentally sound technology, access to and transfer of such technology;
- provision of incentives for conservation and sustainable use of biological resources; and
- handling of technology that may adversely affect the environment.

Technology transfer is highlighted as a method for achieving one of the CBD's three principal objectives, and IPRs are identified as a significant aspect of technology transfer.

The TRIPs Agreement is also relevant to other aspects of the CBD. For instance, the possible impact of the TRIPs Agreement on providing incentives for the conservation and sustainable use, or the possible use of IPRs in recognising the contribution of traditional knowledge and practices of indigenous and local communities.

IPRs are important under both the TRIPs Agreement and the CBD, although they approach the issue from different perspectives. Both the CBD and the

TRIPs Agreement provide some degree of flexibility in national implementation of their provisions. Therefore, there is considerable scope for implementation of both agreements in a complementary manner.

There are three specific issues of conflict between the CBD and the TRIPs Agreement:

- where patentable inventions are based on biological material, the TRIPs Agreement does not clearly provide for either the disclosure of the source of the material utilised in the inventions or the obtaining of prior informed consent (PIC) of the country of origin of the material;
- the conventional forms of IPRs included in the TRIPs Agreement are inadequate to protect traditional knowledge in an effective manner; and
- the patenting of plant varieties.

The TRIPs Agreement tends to support patents on all things and disregard PIC and disclosure of country of origin. This erodes the sovereign rights of a country over its biodiversity and encourages biopiracy, whereby a person or a corporation can transfer and own bio-resources of a country and be associated with traditional knowledge.

The CBD recognises community rights over biodiversity and traditional knowledge, and the need for the protection of such knowledge with adequate benefit-sharing with the source communities. This is not recognised by the TRIPs Agreement, which can facilitate wrong granting of patents and/or grant of patents based on a disregard for existing traditional knowledge in the public domain.

Furthermore, a strong IPR regime promoted by the TRIPs Agreement grants IPRs on the basis of uniformity and stability in a plant variety, which tends to encourage further erosion of biodiversity. Strong IPR regimes also tend to encourage private control and excessive commercial exploitation of the existing Plant Breeders Rights (PBRs).

Box 3: Comparison of the Provisions of the CBD and the TRIPs Agreement	
Provisions of the CBD	**Provisions of the TRIPs Agreement**
Nation states have sovereign rights over genetic material.	IPRs over biotechnological inventions have to be granted without any consideration as regards the source of the genetic material.
Local communities have to be recognised for their contribution to the conservation and sustainable use of biodiversity.	*Corporate interests or individuals can alone be assigned IPRs. There is a limited scope for granting collective rights.*
Any use of genetic material requires PIC of the nation states or the local communities, which are identified as custodian of the biodiversity.	Patent holder need not disclose the source of genetic material on which a patent may have been granted.
Use of genetic material must be accompanied by the sharing of benefits between the stakeholders.	*Patent holder would be the sole beneficiary of any rights arising out of the IPRs.*
Sustainable development is the key objective of the treaty and the prime motive for the regime of CBD.	Realisation of the objectives of free trade is the key objective.

4

What do we understand by the term Biotechnology? What are the relevant provisions in the CBD?

Biotechnology is the short form of biological technology. Technology can be defined as scientific knowledge used in practical ways to better utilise our surroundings. Biotechnology applies the same principles to living organisms, as do other technologies. Biotechnology can be defined as the application of our knowledge and understanding of biology to meet practical needs.

In other words, biotechnology means the use of biological processes through the process of exploitation and manipulation of living organisms and biological systems for the development or manufacturing of a product or in the technological solution to a problem. As such, biotechnology is a general category that has applications in pharmacology, medicine, agriculture and many other fields.

Biotechnology is a field of growing importance. Biotechnological inventions can have a very significant impact on our future, in particular in the fields of me1dicine, food, agriculture, energy and protection of the environment.

Biotechnology is as old as the cultivation of crops. Today's biotechnology is largely identified with its applications in medicine and agriculture based on our knowledge of the genetic code of life. Fermentation, used in making bread, beer, and cheese, is an example of biotechnology. Modern biotechnology allows scientists to be more specific in their work.

It may concern living organisms, such as plants, animals, seeds and micro-organisms, as well as biological material, such as enzymes, proteins and plasmids, which are used in "genetic engineering".

Biotechnological inventions fall into three categories:

- processes for the creation or modification of living organisms and biological material;
- the results of such processes; and
- the use of such results.

Biotechnology is one of the oldest technologies. For example, the production of wine or beer involves processes using living organisms and such processes have been known for a long time. Likewise, the breeding of plants and animals has an equally long history.

The objectives of the CBD delineate two sets of rights in respect of genetic resources. One of these states the rights that relate to technologies, which have been developed using genetic materials. This largely concerns the corporate interests that are engaged in developing the ever-growing range of biotechnologies. CBD signatories must ensure that access to and transfer of technology are recognised and are consistent with adequate and effective protection of IPRs.

Transfer of technology is another major issue dealt within the CBD. According to a CBD provision, a government can determine the right to physical access to genetic material. Another provision ensures that the developing countries are able to participate in the process of technological development where technologies utilise their genetic resources. Furthermore, there are provisions for the adoption of mechanisms for handling of biotechnology and distribution of benefits arising from the use of innovative or new technology. Some other provisions are concerned with technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources, and do no cause significant damage to the environment.

Box 4: India will Top in Biotechnology

In India, biotechnology sector has begun to come out of the closet, recording an annual growth of 40 percent in the last three years. This sector's turnover in the previous year was US$1.6bn and India was placed at number two among countries in Asia-Pacific.

The setting up of a separate Department of Biotechnology (DBT), under the Ministry of Science and Technology, Government of India gave a new impetus to the development of the field of modern biology and biotechnology in India. In more than a decade of its existence, DBT has promoted and accelerated the pace of development of biotechnology in the country. Through several R&D projects and demonstrations and creation of infrastructural facilities, a clear visible impact has been seen. DBT has made significant achievements in the growth and application of biotechnology in the broad areas of agriculture, healthcare, animal sciences, environment, and industry. The efforts are now culminating into products and processes.

Source: http://dbtindia.nic.in/aboutdbt/overviewmain.html and Business Standard, 01.10.2006

5

What is meant by a *sui generis* system and what is its significance?

Sui generis means unique, in its characteristics or one of its own kind. It denotes legal rights given to those things, which do not fit into the standard IPR system because of their nature. It has been used to provide alternative systems of recognition and protection of traditional knowledge related to cultivation practices, medicinal uses of plants and plant genetic resources.

The TRIPs Agreement mentions the need for a *sui generis* system for the protection of plant variety-related IPRs, but provides no explanation for the term in detail. However, it can be discerned that the aim of the TRIPs Agreement has been to ensure formal breeder's rights through *sui generis* systems, rather than the recognition of traditional knowledge or providing a benefit-sharing mechanism.

The TRIPs Agreement allows going beyond the minimum standards of protection. Therefore, many developing nations are attempting to incorporate farmers' and indigenous peoples' rights under *sui generis*, in addition to the protection of PBRs. Many other developing countries, realising the value of traditional knowledge, and are attempting to protect it under a *sui generis* system of benefit-sharing. However, even though *sui generis* laws can be tailor made to protect traditional knowledge, they have to follow the binding principles of the WTO Agreement, such as the most-favoured nation and national (MFN) treatment.

The Indian Plant Variety Protection and Farmers' Rights Act 2001 is an example of a *sui generis* legislation, which is TRIPs-compliant and recognises the rights

of farmers. It is being increasingly viewed as an alternative model to the International Union for the Protection of New Varieties of Plants (UPOV) by many other developing countries. However, the ambit of *sui generis* is large and it may not necessarily denote pro-developing country IPR systems. For instance, the UPOV is also a *sui generis* system, since it grants PBRs, which are not covered under standard IPR systems.

Box 5: Forms of Biodiversity-related *Sui Generis* Approaches in Prevalence

IPRs for Communities
This approach seeks to provide communities with IPRs for their informal innovations and biodiversity-related skills that cannot be protected by conventional IPR systems. However, many have criticised that vesting such rights will lead to further commodification and monopolisation of life forms.

Community Intellectual Rights and Collective Rights
This approach protects the rights of indigenous communities from being usurped by other interests. All biodiversity-related rights of local communities (farmers as well as indigenous peoples) are to be protected by adequate legislation, which the state has to abide by. Its primary objective is to prevent bio-piracy. It is not intended to be in full compliance with the TRIPs stipulations.

Modified Plant Variety Protection
This approach is grounded on the stipulations of the plant variety protection system, as laid down in the UPOV conventions, with slight modifications to improve the situation of farmers. Instruments can be Community or Farmers Rights Funds, which are based on royalties on protected seeds. Other measures are grace periods for filing applications on farmers' varieties and the exclusion of certain categories of farmer-controlled plant materials.

Comprehensive Biodiversity Legislation
This is an encompassing legislation, which deals with the protection and sustainable use of biodiversity. It aims at defining coherent policy measures in the national context. The aspects covered in it include access to genetic resources, bio-safety, IPRs and community rights.

Sectoral Community Rights Regime
This regulation system is designed especially to deal with the interests of local communities concerning specific categories of biodiversity. National

legislation does not encompass all the biodiversity-related problems coherently, but concentrates only on specific areas that have to be protected, for instance, medicinal plants and the related indigenous knowledge systems. Such an approach does not exclude attempts to implement broader legislation.

Source: http://www.biotech-monitor.nl/3402.htm

6

What is UPOV and why is it controversial?

The Hindu Business Line

The International Union for the Protection of New Varieties of Plants (UPOV) is an inter-governmental organisation, established in 1961, with its headquarters in Geneva. It was established with the objective to protect new varieties of plants by IPRs. There are over 30 members (mostly developed countries) in the UPOV, which is a platform through which industrialised nations regulate the implementation of PBRs and it is the only platform of its kind today. One possible *sui generis* system likely to be recognised as effective is the UPOV system of PBRs.

The purpose of the UPOV Convention is to ensure that its members acknowledge the achievements of breeders of new varieties of plants by granting them an IPR on the basis of a set of clearly defined principles.

PBRs are rights extended to plant breeders to own and market new and improved varieties of plants that they develop. These rights are closer to patents. In order to protect the IPRs of breeders, the TRIPs Agreement has mandated all WTO Members to incorporate PBRs in their domestic IPR laws, either as *sui generis* systems or through patents. Therefore, PBRs have assumed a great deal of significance.

An example of PBRs is the Indian Plant Variety and Farmers' Rights Act 2001, which prevents unauthorised sale of protected varieties of plants using the company brand name. Prior to this Act, India did not have specific PBRs and farmers freely used new varieties of seeds.

The main problem with the UPOV model is that it bestows more than full commercial control of the protected variety. It provides plant varieties protection by conferring patent-like rights. Its coverage extends beyond seeds, encompassing the products obtained from the harvested material as well.

The UPOV 1978 version made exceptions, by allowing farmers to save seeds for re-sowing, which is known as *farmers' privilege*. Breeders were also allowed to use protected varieties to develop newer ones and this is known as *breeders' exemption*. However, the UPOV 1991 version severely restricts these exemptions, while further strengthening breeders' monopoly. It provides a breeder full rights over the products of a seed or the harvest. However, both the versions of the UPOV do not provide farmers the exemption of selling harvested seeds, or exchanging these seeds amongst themselves or conducting any form of varietal improvements.

On the other hand, farmers in the poor countries (mostly depending on subsistence agriculture) have traditionally sold and exchanged harvested seeds and made improvements on them. This is the way they helped promote genetic diversity and productivity of crops. The culture of purchasing seeds for sowing is new and expensive for most farmers in the developing world. More than 80 percent of seed supply continues in an informal way in the developing countries, providing income to supplier-farmers. Stringent monopolistic rights conferred to formal breeders, through the UPOV model, deny them the rights that they have traditionally enjoyed.

The value system of the UPOV model also tends to vest power to large corporations by encouraging monopolies. Such control can have negative impact on national food security, reduce self-sufficiency of farmers, increase seed prices and result in higher product costs for consumers.

Box 6: Some Controversial Features of the UPOV 1991

Harvest belongs to the breeder
The breeder is provided with control over the harvest of a farmer's crop. If a farmer sowed her/his field with a plant variety protection (PVP) variety without paying the royalty fee, the breeder can claim ownership of the output (for example, wheat) and the products of that output (for example, wheat flour). This means that breeders can directly control trade in processed foods, ornamentals and other high-value commodities.

Further breeding is restricted
Anyone using a PVP variety in creative research has to make major changes to the genotype or else the 'new' variety will not be considered as 'new' and it will be considered an "essentially derived" variety – the ownership will be with the first breeder. This is to discourage small changes from being passed-off as true innovations.

Farmers cannot freely save seeds for their own use
The UPOV 1991 version does not protect the rights of farmers to freely use their harvest as further planting material. In practice, the right to reuse seed will be restricted to those countries that make special provision for it.

Varieties can be patented
Other than the PVP, varieties can also be patented. Under previous version of the UPOV, there was a specific ban on such "double protection".

Source: Ten reasons not to join UPOV, Global Trade and Biodiversity in Conflict, GAIA/GRAIN 1998

7

What is Traditional Knowledge and Biopiracy? How have they established significance within the IPR issue?

The Economic Times

Traditional knowledge (TK) means knowledge, innovations and practices of indigenous and local communities embodying traditional life-styles; the wisdom developed over many generations of holistic traditional scientific utilisation of lands, natural resources, and environment. It is often passed on orally or with few written records or with the information being available in the public domain and, at times, as trade secrets within communities and/or individuals.

TK may be of two kinds:

- as localised knowledge; and
- as knowledge that is virtually in the public domain.

TK continues to play a key role in the lives of people in ensuring food security and healthcare. For instance, traditional medicines provide affordable healthcare to more than 80 percent of the population in the developing world.

The commercial value of TK in biodiversity lies in the fact that it provides useful leads for scientific research, particularly in pharmaceutical and agricultural sector, and sales based on TK have touched billions of dollars annually. However, the source countries or communities, mostly from the South, are rarely provided with any benefits arising out of the sale of these end products. Moreover, through IPRs, particularly patents, commercial interests are usurping control and ownership of TK, which has usually stayed in the public domain.

Biopiracy is misappropriation of knowledge from traditional and indigenous communities or individuals. It occurs when patents are wrongly granted on innovations that are not novel, since the knowledge has already existed as TK in the public domain. It can also occur when patents are correctly granted, but are based on pre-existing TK. Such grants are often made because PIC was not taken from the source communities or an adequate benefit-sharing mechanism was not created. Correct patents also granted because of low standards in domestic IPR laws, such as patents granted to minor modifications in existing TK is also another form of biopiracy. The presence of regressive domestic IPR laws also contributes to biopiracy, such as those in the US, which do not recognise non-published TK unless it is originated in that country.

Box 7: Some Examples of Biopiracy

An American patent was granted to the University of Mississippi for the use of turmeric in wound healing. The Government of India (GoI) challenged the patent on the basis of ancient texts and research papers attesting the non-contemporary nature of the knowledge held in the public domain. The US Patent, now rejected, could have prevented Indian companies from marketing turmeric-based products.

The European Patent Office granted a patent to W. R. Grace and Company for its 'discovery' of fungicidal effects of *neem* oil. The GoI challenged the patent on the ground of its being a part of India's TK. The patent was rejected, due to lack of novelty and inventive step.

In 2002, the agro-biotech giant, Syngenta, secretly attempted to appropriate thousands of varieties of Indian rice germ plasm deposited in an Indian agricultural university. The germ plasm exhibited drought, flood and pest resistance, and farmers locally cultivate these varieties. While the timely intervention of civil society and media thwarted the process, such a takeover would have aided the corporate in developing and patenting numerous genetically engineered rice varieties.

Banaba, a well-known herbal medicine, is widely used in the Philippines to treat many ailments. A Japanese company, Itoen KK, has been granted a patent for its anti-diabetic property, even though many traditional healers know it and is well documented in national literature.

Indigenous people of the Amazon have used *Ayahuasca* for medicinal and religious purposes. Yet a US patent to Plant Medicine Corporation was

granted. The patent bestowed exclusive sale and marketing rights to new varieties of the plant and the corporation developed drugs to treat psychiatric and cardio-vascular aliments. A sustained campaign by an Amazonian Group against the patent led to its initial cancellation, but was again reinstated, without any benefits to the source community.

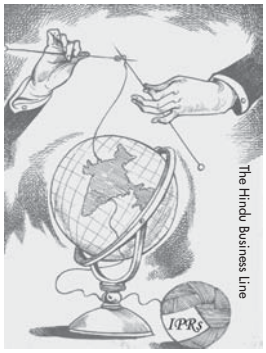
Box 8: Benefit-sharing Mechanism or Corporate Social Responsibility?

Shaman Pharmaceuticals of US has sought to provide compensation to communities and countries in which it works, by returning to them a portion of the profits from its products. For instance, it negotiated with local groups in the Amazon for long-term supplies of raw material for their products, aiding local economies and livelihoods. A long gestation period for deliberations within the community for negotiations on benefit-sharing was encouraged and viewed as beneficial for pharmaceutical product development. Some of the benefits negotiated were commitment to procure raw materials from the community at higher purchase prices and providing resources for conservation and healthcare.

However, the company is not committed to providing royalties with communities and, in the absence of it, it is difficult to discern whether this arrangement resembles a true benefit-sharing mechanism or is a case of corporate social responsibility (CSR).

8

What are the Indian laws on IPRs?



The Patents Act 1970 and its Amendments

To become TRIPs-compliant, the Patents Act 1970 was amended several times: in 1999, 2002 and 2005. While the main changes brought through the amendments do not substantially affect traditional knowledge, farmers' rights and biodiversity, there are a few provisions, which attempted to reduce biopiracy. For instance, the scope of an 'invention' has been broadened to cover all aspects of new scientific creations. However, new uses of known substances, including the duplication of traditional knowledge have been specifically excluded from patentability. In addition, the non-disclosure of the source of geographical origin of a traditionally known material has been made a basis for the challenge of a patent.

The Plant Variety Protection and Farmers' Rights Act 2001

This Act, while protecting the rights of the breeders, also attempts to protect farmers' rights. The recognition of their rights is unique and has been regarded as a pro-farmer *sui generis* system of plant variety protection. Under this Act, farmers have the right to conserve, exchange, sell and breed protected seeds. However, they are not allowed to sell the protected seed using the company brand or name. Under this legislation, they are also protected against false claims and spurious seeds that lead to crop failure. The liability clause in it entitles them to compensation from the provider.

The Act also grants them the right to register their own varieties of seeds like breeders and mandates PIC of farmers for using their varieties for breeding. A

mechanism for benefit-sharing between the community and breeders is also mentioned. For upholding public interests, certain varieties have been excluded from protection and a facility of compulsory licensing is also present. In most cases, the Act gives researchers the right to use protected varieties to breed new varieties.

The Biological Diversity Act 2002 and Rules 2004
This law attempts to address India's commitment to the CBD. It mandates the setting up of institutions at the national, state and local levels, for the purpose of regulation of biological diversity. For access and transfer of biodiversity data, foreigners and commercial establishments have to take permission from the national body, while the local body will conserve and document biodiversity and related traditional knowledge. Pre-grant of all related IPRs has to be routed through the national body.

The Act attempts to regulate access to biodiversity for commercial purposes, to fight biopiracy, and recognises community rights over traditional knowledge and biodiversity. However, it does not authorise local community, the actual owners, to decide on granting IPRs to others or sharing benefits, since all powers are vested in the national body. Therefore, the legislation is not that participatory.

The Geographical Indications Act 1999
This Act was enacted as a *sui generis* system, post the *Basmati* rice case in which India challenged the patent grated to the US corporate, Ricetec, on its claim of producing *Basmati* rice grains. The Act was brought in to protect the unauthorised use of geographical indications and the rules of origin (RoO) with respect to agricultural goods, which are in Indian names, not to be patented, and/or other misuse for economic gains. The name, Mysore Silk, has been recently provided with protection under this Act. Thus, even domestic silk manufacturers from any region, other than the designated one, are legally prevented from using the protected name on their product.

Box 9: Geographical Indications for Pochampally Handloom Fabric

Pochampally gets its name from the region of its origin in Hyderabad in Andhra Pradesh and the design recently won protection in the geographical indications category. This will protect the Pochampally handloom *sari* from unfair competition and counterfeiting. About a 100,000 weavers in Andhra Pradesh may benefit from the granting of IPR to the traditional tie-and-dye fabric, which has seen falling demand due to competition from cheaper power loom fabrics, which copied the designs and sold them cheaply.

If a *sari* made by a weaver costs about Rs 900 (US$20), the same design copied by a power loom costs only Rs 450 (US$10). As a result, almost 50 percent of the estimated 500,000 Pochampally weavers had to switch to other vocations.

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