Commission on Intellectual Property Rights

CONFERENCE

"HOW INTELLECTUAL PROPERTY RIGHTS COULD WORK BETTER FOR DEVELOPING COUNTRIES AND POOR PEOPLE"

DAY 1

BACKGROUND DOCUMENTS

21st – 22nd FEBRUARY 2002

THE ROYAL SOCIETY
6 Carlton House Terrace, London SW1Y 5AG

SESSION 2: AGRICULTURE AND GENETIC RESOURCES

Paper 3a. Executive Summary – Access to Genetic Resources, Gene-based Inventions and Agriculture

Paper 3b. Executive Summary – Access to Genetic Resources, Gene-based Inventions and Agriculture

Workshop 3. Minutes – Access to Genetic Resources, Gene-based Inventions and Agriculture – 19th November 2001

Commission on Intellectual Property Rights

Study Paper 3a

Access to Genetic Resources, Gene-based Inventions and Agriculture

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Executive Summary and Recommendations

I. Seeds and Seed System Transformations

Identifying the key properties of the 'seed' is a useful starting point for a study on intellectual property rights in plant genetic resources as it brings together the literature on seed systems with that of intellectual property rights. Embedded in the seed are two distinct and separable properties: (a) genetic information and (b) physical properties. Of particular significance is the malleability of plants, on account of changes achieved in its genetic software (i.e. varietal characteristics), which lead seeds to occupy the unique position of the platform for the techno-economic transformation of agriculture.

Varietal development, i.e. plant breeding, is the core purpose of seed systems. However, a number of other activities, viz. seed production and multiplication, and processing, storing and marketing seeds, are also crucial in delivering new varieties to the farmer. In addition, the public sector performs many supporting activities (e.g. germplasm collection and documentation, background research) that enable plant breeding. Strong recommendations for putting in place policies to promote increasing privatisation of different components of seed systems have been made in the literature. These recommendations require urgent re-evaluation in light of awareness of (a) factors defining the demand conditions for seeds and (b) the supporting role of public sector breeding-related activities.

Recommendations

1. Donor agencies (e.g. World Bank, NGOs and relevant developed country government departments) should closely review policies aimed at fostering the privatisation of seed systems in developing countries. This should focus on the farmers' seed sourcing behaviour and the state of public sector breeding-related activities and evolve a strategy of long-term support of national and international public agricultural research.

2. Donor agencies (e.g. World Bank, NGOs and relevant developed country government departments) should either undertake or commission studies that focus on science/technology developments in plant breeding and farm-based activities to highlight strategies aimed at tying-in seeds with other farm inputs.

3. Donor organisations and agencies, government departments associated with rural developmental activities and non-governmental organisations, should commit to widening participation and partnership in agricultural research so as to include farmers.

II. The Economic Impact of Plant Variety Protection

Economists studying plant breeders' rights tend to be less theoretically sophisticated when compared to available analysis in the area of patents. In particular, the absence of a theoretical approach, the literature only provides empirical research. In the case of developed countries this literature can be reviewed along three themes:

R&D Impact: It is often claimed the availability of PBRs incentivised private investments in plant breeding. The evidence, as recent contributors note, is that of a modest and uneven impact of PBRs on private sector breeding investments. First, older companies, i.e. companies with breeding expertise and pre-existed the legislation, reveal higher R&D-intensities and broader crop portfolios. Second, the investment spread unevenly across crops, with wheat and soybean attracted the most investment. Yet, economists have failed to analyse a range of factors that must have contributed to the change in investment patterns, viz., scientific opportunities (e.g. discovery of heterosis in wheat), appropriability conditions (i.e. the fragility of the soybean seed), demand (e.g. international trade in these crops).

New Varieties Released: A common claim in the literature is that the availability of PBRs leads to an increase in the number of new varieties released. Empirical evidence from the US and the UK do seem to support this claim; however, deeper methodological issues remain in terms of confirming the role of IPRs. First, there is mixed evidence about the changes in the *historical* rate of release of varieties in a pre- and post-PBR world, which suggests that other factors are also important. Second, it is quite obvious that a general increase in the number of varieties released is of meaningless value; rather of importance are the agronomic qualities of the varieties. Field trial data confirms a general view that more recent vintages of varieties are more productive; though questions remain about the role of varieties and the package of inputs. Third, increases in the rate of release of varieties are part of wider appropriation strategies of breeding companies and directed at reducing the useful economic life of varieties. Evidence from wheat in the UK shows that average age of varieties has fallen from 12 years to about 6 years in the 1960-95 period.

Market Concentration: Concerns about changing levels of market concentration are integral to this issue. Evidence from the US and UK adequately demonstrate a high and increasing level of concentration in the number of granted issued in a crop. This concentration in grants acts as a deterrent to market entry; thus, the evidence of concentration in the seed market, which has increased with the consolidation in the industry. It is the exercise of the resulting market power that raises public policy questions. Evidence of increases in seed price suggests an undue exercise of market power by breeding companies.

Many commentators recognise the differing circumstances in developing countries; thus questioning the appropriateness of existing models of PVP.

This report reviews the limited evidence of private sector breeding activities in developing countries.

Research Priorities: Private sector breeding tends to limit itself to high value/low volume crops and hybrids. Further, the agronomic qualities indicate that the target areas are characteristically the post-Green Revolution areas. Accordingly, it appears unlikely that the crop and agronomic needs of the wider farming populations, particularly low external-input use communities, are consistent with this research priority. Neither is there convincing evidence that dominant trends from the release of genetically-modified field crops are directed at these populations. As such, a 'chicken-and-egg' problem persists: 'is it that an absence of effective demand is the hurdle for the supply of suitable varieties? Or is that lack of suitable varieties has inhibited the generation of demand in these areas?'

Access to Varieties: It is said that the availability of PBRs will allow legitimate access to foreign-bred genetic material. This appears to be the case from studies based in Latin America and Kenya. The case of Kenya raise public policy questions: has the access to foreign bred genetic material enhanced national capacity in plant breeding and what is the impact on food security. Existing literature on Kenya does not provide encouraging evidence on either of these two issues. Finally, there remain questions about the impact of PBRs on the terms of access to finished varieties by farmers. Given established seed exchange networks and its role in distributing varieties and maintaining diversity, there are apprehensions about the adverse impact of PBRs.

National and international public plant breeding is the mainstay of most developing countries. Not only does develop new varieties, but it also provides the general scientific and technological environment for plant breeding. Many policy analysts raise questions about the future role and orientation of public sector breeding in an era that is increasingly being characterised by the presence of the private sector. Discouraging trends in funding patterns for public agriculture research indicate that a smaller role might be one key result. The report identifies three salient points. First, research conducted in the private and the public sector are non-substitutable as they are targeted at different farming groups. The shrinking resource base of the public sector and the low possibility of cost recovery, place ever greater demand for external revenues. Second, closer institutional linkages between the public and the private sector raise public welfare questions in terms of accountability and transparency. Third, the spread of proprietary control in research tools and uncertainty in the limits of ownership make the conduct of agricultural research all the more difficult by requiring complicated negotiations.

Recommendations

4. A substantive review of the functioning of plant breeders' rights, at national and international levels, must be conducted to identify and analyse the impact on agricultural research, agronomic qualities of new varieties released and market concentration. This work can be

conducted through relevant international organisations (e.g. UPOV, UNCTAD, and FAO)

5. Developing country governments are recommended to review the evidence from the above-mentioned report as a first-step towards conducting similar national-level study. This study should inform the policy process of making new law to implement article 27.3b.

6. National and international agricultural research centres are recommended to review the impact of intellectual property rights on their conduct of agricultural research (e.g. ISNAR studies) and evaluate their collaborations with the private sector.

7. Donor agencies (e.g. World Bank and developed country departments of international development) are recommended to strengthen their long-term commitment to funding public sector agricultural research.

III. The TRIPs Agreement and Plant Innovations

The TRIPs Agreement aims at establishing minimum standards and does not seek to globally harmonise standards and norms of intellectual property protection. Yet, there are examples of political and economic pressure being applied on developing countries to secure the implementation of 'TRIPs-plus' legislation.

With respect to plant genetic resources, three central legal and technical issues require close scrutiny: (a) what is the criterion for granting patents? (b) what is the scope of, and limits to, the exclusions from patentability in the Agreement? and (c) what are 'plant varieties' for the purpose of article 27.3b?

The patentability of plant genetic resources depends on the subject matter fulfilling the normal tests for patent grant, viz. novelty, inventive step and industrial applicability. While the Agreement does not provide any explicit definition, wide variations exist between different jurisdictions in the application of these principles, reflecting differences in interpretations and subjectivity in application. While many countries grant patents on subject matter involving genetic material – on the grounds that adequate human intervention has occurred – there is nothing in the Agreement that oblige members to accept the isolation of genetic material as qualifying for a patent.

Article 27.3b obliges member countries to provide intellectual property protection (patents, or sui generis or some combination) for plant varieties. However, there is no definition of plant variety in the Agreement nor does it refer to the pre-existing international template – UPOV. Consequently, there is no obligation to join this or any other, multilateral treaty on plant variety protection. It is useful to consider a variety of options in establishing a legal definition of plant variety, keeping in mind national priorities. In this respect, a simultaneous analysis of the conditions for the grant of protection is considered useful.

Recommendations

8. Developing countries should take full opportunity to exercise their national sovereignty in developing and implementing national intellectual property right legislation. In this respect, the TRIPs Council should review the use of bilateral treaties as mechanisms to secure 'TRIPs-plus' standards in developing countries.

9. A clear agreed interpretation of the obligation with respect to the patentability of plant genetic resources should be developed at the TRIPs Council, wherein the non-patentability of naturally occurring plant genetic resources (including gene sequences and genes) should be established. Countries should be free in opting to disallow patents on plants.

10. Member countries of the WTO should direct the TRIPs Council to take cognition of the different, and at times conflicting, views on the patentability of plant genetic resources and the difficulties facing developing countries in implementing their obligation under art. 27.3b of the Agreement. Appropriate extension periods for compliance to the Agreement should be made available.

IV. Implementing Article 27.3b – The Case of Plant Varieties

The obligation under article 27.3b is for an intellectual property right and must include provisions for national treatment, most favoured nation and (as yet unclear) requirement for effective protection. A variety of options are available for developing countries: (a) exclude plants (including plant varieties) from patentability, (b) not exclude plants (including plant varieties) from patentability, (c) not exclude plants from patentability and simultaneously provide for the protection of plant varieties via a dual system (i.e. patents and *sui generis*), and (d) exclude only plant varieties from patentability, thus providing for a *sui generis* system. These options must be examined in terms of national priorities, in particular the need to maintain access to genetic material for breeders to continue plant breeding and for farmers to ensure seed diffusion. Consequently, the sui generis option is considered the best alternative.

The paper reviews three key components of the sui generis system, viz. coverage of the law, the conditions for protection, and the scope of protection, which are all undefined in the Agreement. In addition, the term 'effective sui generis system' is undefined in the Agreement and has led to wide speculation on the required scope of protection. In contrast, there are views suggesting that it will be the standards of protection that determine whether a sui generis system is effective. With respect to the three components, the following points are made:

Coverage of the law: The Agreement does not indicate the required coverage, nor does it state that protection should be limited to a defined list of plant species or botanical genera. Consequently, the popular interpretation that all

plant species and botanical genera must be included within the ambit of the law. In contrast, UPOV78 and UPOV91 provide a more gradual approach to expanded coverage of the law. In this respect, it appears unreasonable that the TRIPs obligation requires immediate and maximum coverage. The analysis here explores an alternative interpretation of the Agreement, where a gradual expansion, such as the one existing within UPOV78, might be deemed consistent with the Agreement. As such, this is a grey area which will be ultimately decided either through dispute settlement at WTO or an agreed interpretation at the TRIPs Council.

Conditions for Protection: As this is undefined in the Agreement, most commentators have focussed attention on the UPOV system where the requirements are distinctness, uniformity and stability. Three problems with the UPOV system are noted in the literature: (a) the demand on uniformity is an excessive burden which has, at times, deleterious effects on biodiversity; (b) the exclusive focus on distinctness of characteristics is considered a low threshold for 'inventive step' which tends to enable the easy grant of protection (e.g. cosmetic breeding), and (c) the high demand on stability is considered an economic deterrent to the quick release of new varieties. Following from this critical evaluation of the DUS system, some modifications are presented as possible systems for developing countries to consider. These include the following:

- Enhancing distinctness by introducing a qualification for 'important characteristics' (which existed in UPOV78) such as 'traits of agronomic value'. This would raise the 'inventive step' threshold and could act as an incentive for the breeding of useful varieties.

- The uniformity requirement could be replaced by a requirement for identifiability that fulfils the legal need for identifying the protected subject matter, whilst potentially avoiding the adverse biodiversity implications. In addition, this may also allow the inclusion of farmer-varieties.

- Other requirements that could implement principles of the CBD are also worthy of consideration. Of relevance are the submission of certificates declaring the geographical origin of the genetic material involved in the application and certificates confirming prior informed consent.

The literature on the conditions for grant of protection is relatively new and it is important that developing countries examine these models closely before implementing the provisions.

Scope of protection: It is here that public policy comes to bear in its effort to balance the interests of different segments of society, crudely put as a tension between the incentives demanded by inventors and the need for wide/quick diffusion. Developing countries need to consider different approaches in terms of balancing the measures required by TRIPs with national priorities, there

being no a priori guarantee that the two are identical. The paper considers a range of questions that will ultimately define the scope of protection being offered; e.g. the duration of protection, possibilities of differential scope of protection; exceptions from the scope for farmers and breeders. The options available are quite diverse and developing countries need to make a proper assessment of an appropriate scope of protection. What is clear is that a 'one-size fits all' approach is counter-productive.

Recommendations

11. The option to fulfil the obligation under article 27.3b by implementing an effective sui generis system for plant variety protection should be retained without modifications aimed at establishing a possible benchmark (e.g. UPOV).

12. Developing countries are recommended to undertake an extensive review of policies on agricultural development as a first step towards formulating and implementing an effective sui generis system for plant variety protection. This review exercise should be conducted in a participatory manner with the full and active involvement of all segments of society that are impacted by transformations in agriculture.

13. It is recommended that developing countries should reiterate their demand for the TRIPs Council to complete its substantive review of article 27.3b, which should also bring on board evidence of the impact (actual and/or potential) of IPRs in genetic resources and survey the issue of capacity-building as pre-requisite to effective implementation.

14. Developing countries are strongly recommended to examine key components of a sui generis system (e.g. the coverage of the legislation, the scope of, and conditions for, protection) to assess what might be appropriate and in the national interest.

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Study Paper 3b

Access to Genetic Resources, Gene-based Inventions and Agriculture

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Executive Summary

This report addresses policy options for developing countries in implementing legislation dealing with plant variety rights, farmers' rights and bioprospecting in the context of the following key issues identified by the Chairman of the Council for TRIPs at its 23 March 2001 meeting:

- the link between Article 27.3(b) and development;
- technical issues relating to patent and plant variety protection under article 27.3(b);
- technical issues relating to the *sui generis* protection of plant varieties;
- ethical issues relating to the patentability of life-forms;
- the relationship to the conservation and sustainable use of genetic material; and
- the relationship with the concepts of traditional knowledge and farmers' rights

1. The Link Between Article 27.3(b) and Development

A number of developing countries had noted the tension between the development and technology transfer objectives of the TRIPs Agreement and the way in which the Agreement made it possible for rights owners to impose unreasonable terms for technologies. Developing country Members have urged the examination, as part of the Article 71.1 review of the TRIPs Agreement, of the impact of implementing the TRIPS Agreement on the transfer and dissemination of technology and the related trade and development prospects of developing countries.

The concerns of developing countries in this area may be accommodated by capacity building in the management of biotechnological innovation and a relaxation of the implementation time-table imposed by the TRIPs Agreement.

2. Technical Issues Relating to Patent and Plant Variety Protection Under Article 27.3(b)

Analysis of the following technical issues is suggested by the terminology of Article 27.3(b): (i) what is a patentable invention for the purposes of Article 27.3(b)? (ii) what are micro-organisms for the purposes of Article 27.2? (iiii) what are plant varieties for the purposes of Article 27.3(b)? and (iv) should there be a research exception in relation to patents over plant material?

Intellectual property law attempts to draw a distinction between inventions and discoveries. The latter are not protectable. This distinction may be made in the relevant legislation or through the decisions of IP courts. Nothing in the TRIPs Agreement obliges countries to deem the isolation of genetic materials to be inventions.

Article 27(3)(b) permits WTO Members to exclude from patent protection, plants and animals and essentially biological processes for the production of

plants and animals. Members are specifically not permitted to exclude from patent protection micro-organisms and non-biological and microbiological processes. However, there is no commonly accepted definition of "micro-organism" either in science or in patent office practice. The practice of patent granting offices in developed countries suggests that there is no perceived need for a definition. The key issue for protection being whether or not the invention meets the patent granting criteria and not its subject matter. Given these difficulties it may be more advisable for developing country member states to introduce a higher threshold for patent protection in respect of living material. Broad claims should not be permitted by patent offices and that applicants should only be able to claim the exact use of the biological material as specified in the application and no other uses.

A *sui generis* regime for the protection of plant varieties under Article 27.3(b) may provide for a dual system of protection which includes both modern as well as farmers' varieties. Given the possibility of the application of patents to plant varieties, it would appear to be significant to secure within patent laws the same research exception which exists under PVR laws.

3. Technical Issues Relating to the *Sui Generis* Protection of Plant Varieties

The principal technical issues which have been raised on the implementation of effective *sui generis* protection of plant varieties are: what is meant by "effective" and what *sui generis* options are open to Member states?

Article 27.3(b) provides no guidance on what is meant by "effective". The following options have been suggested: (i) effective through enforcement; (ii) effective to protect both modern and farmers' varieties; (iii) the rights should be protected in accordance with national objectives referred to in Articles 7 and 8 of the TRIPs Agreement and the first recital of the preamble to the WTO Agreement - on sustainable development; and (iv) the protection should be consistent with international obligations that Members have assumed, for instance under the CBD.

The sui generis options which appear of greatest interest to developing countries are those which establish their rights in relation to farmers' varieties and landraces. The significance of the contribution made by traditional agricultural knowledge to IPRs and the related questions of prior informed consent and benefit sharing, requires empirical analysis.

Landraces may be excluded from IP protection by the requirement that a new variety is distinct from "varieties of common knowledge". Similarly, material in germplasm collections, might be preserved from private exploitation through the publication of information about deposited materials, thereby placing them in the public domain. Also, the distribution of collected materials may be protected by means of material transfer agreements (MTAs) which prevent the seeking of IPRs in relation to those materials (or from essentially derived varieties).

4. Ethical Issues Relating to the Patentability of Life-forms

There is a substantial literature on the ethical implications of permitting the propertisation of the "building blocks of life". There is a questioning of the capacity of industrial property offices, NGOs and life sciences companies all of which are outside the democratic process, to make policy decisions on these matters. Researchers express the concern that biomedical and agricultural research are too important to be sterilised by the intervention of private intellectual property rights. A related concern is that the propertisation of genetic resources has resulted in the concentration of proprietary biotechnologies in a few corporations.

5. Relationship of Article 27.3(2) to the Conservation and Sustainable Use of Genetic Material

Recommendations on the substantive content of the relationship of Article 27.3(2) to the conservation and sustainable use of genetic material is addressed below, in the context of Farmers' Rights legislation.

Procedurally, The WWF and CIEL (2001) have urged the granting of observer status for the CBD on the Council for TRIPs, to emphasisze the importance for developing countries of harmonizing the TRIPs agreement with the CBD.

6. Relationship of Article 27.3(b) With the Concepts of Traditional Knowledge and Farmers' Rights.

Farmers' Rights are enshrined in Article 9 of the Treaty on Plant Genetic Resources, as a means of recognizing "the enormous contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources". This recognition is recommended to be implemented through national legislation which protects traditional knowledge relevant to plant genetic resources for food and agriculture; confers a right to equitably participate in sharing benefits arising from the utilization of these resources and a right to participate in national decision making on matters related to the conservation and sustainable use of these resources. The rights of farmers have to save, use, exchange and sell farm-saved seed/propagating material is confirmed in the Article.

At least five possible legal contexts within which Farmers' Rights might be enacted: have been identified (a) biodiversity law; (b) intellectual property law; (c) traditional knowledge law; (d) human rights law; or (e) *sui generis* legislation. Of these options, *sui generis* Farmers' Rights legislation appears to be the preferred option for national legislation combining one of the versions of UPOV with some of the access principles of the CBD. The African Model legislation for the Protection of the Rights of Local communities, Farmers and Breeders, and for the Regulation of Access to Biological Resources is a useful precedent.

Commission on Intellectual Property Rights

Workshop 3: Genetic Resources, Gene-based Inventions and Agriculture

19th November 2001

Participants: Michael Blakeney (University of London), Linda Brown (DFID), Peter Button (UPOV), John Mugabe (ACTS), Patrick Mulvany (ITDG), Dwijen Rangnekar (University of London), Suman Sahai (Gene Campaign), Clive Stannard (FAO), Geoff Tansey (Consultant), Ruchi Tripathi (ActionAid).

Commissioners: Sandy Thomas (Chair), Daniel Alexander, Carlos Correa and Ramesh Mashelkar.

Secretariat: Charles Clift, Tom Pengelly, Phil Thorpe, Rob Fitter.

Summary: The first session of the workshop comprised presentations by the authors of the two study papers commissioned on this topic, followed by a response by a discussant and a general discussion of the paper. The first Paper by Blakeney focused on recommendations regarding TRIPS Article 27.3(b), and prompted a discussion on the understanding of TRIPS in this context and its relationship with the CBD. The second paper, by Rangnekar, reviewed the evidence available on the impacts of IPRs on agricultural development and initiated a debate on *sui generis* options for PVP and their access implications. The second session looked into issues such as the flexibilities within TRIPS, *sui generis* alternatives, food security and the global agricultural system, and technological R&D in the public and private sectors. The third session dealt with the relationships between the various international agreements concerning genetic resources, their implementation and impact on access to the common resource base. Disclosure of origin was a further major topic of debate. The final session drew together the different strands of the workshop discussions, highlighting the most important areas for the commission to concentrate on and suggesting potential recommendation.

Glossary

ACTS	African Centre for Technology Studies
CBD	Convention on Biological Diversity
CGIAR	Consultative Group for International Agricultural Research
COFAB	Convention of Farmers and Breeders
DFID	Department for International Development (UK)
DUS	The criteria for PVP: Distinctiveness, Uniformity and Stability
EPC	European Patent Convention
FAO	Food and Agriculture Organisation (UN)
GFAR	The Global Forum on Agricultural Research
GM	Genetic Modification
GURTS	Genetic Use Restriction Technologies
IP	Intellectual Property
IPR	Intellectual Property Rights
ISNAR	International Service for National Agricultural Research
ITDG	Intermediate Technology Development Group
ITPGR	International Treaty on Plant Genetic Resources (FAO)
IUPGR	International Undertaking on Plant Genetic Resources (FAO)
LDC	Least developed country
MNC	Multi-national company
MTA	Material transfer agreement
OAU	Organisation of African Unity
PPP	Public – Private Partnership
PVP	Plant Variety Protection
R&D	Research and Development
TK	Traditional Knowledge
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights (WTO)
UPOV	Union Internationale pour la Protection des Obtentions Vegetales (International Union for the Protection of New Varieties of Plants)
WTO	World Trade Organisation

Session 1: Presentation and discussion of the study papers

Blakeney Presentation

Professor Blakeney put forward the following propositions as a means to stimulate discussion:

The Link Between Article 27.3(b) and Development

Recommendations

a. Review the impact of biotech patents on agricultural research in developing countries.
b. Review the breadth of claims permitted in biotech patenting.
c. Review the extent of the utilisation of Southern genetic resources and public germplasm collections (e.g. the CGIAR collection).
d. Establish an International Institute to provide technical assistance to developing countries on genetic resources management.

Technical Issues Relating to Patent and Plant Variety Protection Under Art.27.3(b)

Recommendations

a. Preserve the right of any country to exclude plants and any parts, including gene sequences and fragments, from patentability.
b. Adopt clear rules indicating that naturally occurring plant materials, including genes and gene sequences, should not be patentable.
c. Define the novelty requirement to exclude from patenting, any subject matter which is available to the public as a written description, used in indigenous communities, or in a germplasm collection.
d. Establish commitments by governments not to grant, or to cancel, IPRs on materials obtained from international germplasm collections where such materials are in violation of any Material Transfer Agreements.
e. Define plant varieties under Article 27.3(b) to permit a dual system of protection which includes both modern as well as farmers' varieties.
f. Allow an exception for experimentation on patented plant materials.

Technical Issues Relating to the *Sui Generis* Protection of Plant Varieties

Sui generis Options

a. Landraces should be excluded from IP protection.
b. Material in germplasm collections should be protected through publication, and collected materials protected by material transfer agreements.
c. For medicinal plants, a certificate of novelty should be required for PVP.
d. PVP should not be obtained for wild species.

e. After purchase the PVP right will be exhausted and any further transactions with the seed will be permissible.

Ethical Issues Relating to the Patentability of Life forms

Recommendations

a. Consult stakeholders on the ethical impact of IPRs on living materials.
b. Develop policy guidelines for IP offices on the balancing of public and private interests in the area of biotechnology.

Relationship of Article 27.3(b) to the Conservation and Sustainable Use of Genetic Material

Recommendations

a. The CBD be granted observer status on the Council for TRIPS.

Relationship of Article 27.3(b) with the Concepts of Traditional Knowledge and Farmers' Rights.

Recommendations

a. *Sui generis* possibilities for Farmers Rights legislation (c.f. African Model).
b. Develop options for seed saving for different categories of farmers.
c. Establish a central fund from which the breeder is paid on the basis of the area grown, and in exchange, farmers are permitted to save, exchange and trade the seed from the protected variety on a non-commercial basis.
d. Provide assistance to developing countries in formulating legislation to assist farmers in contributing to the evolution, conservation, improvement and sustainable use of plant genetic resources for food and agriculture.
e. Formulate measures for credit facilities and market provisions governing farmers' access to plant genetic resources for enhancing traditional genetic resources, development the exchange systems.

Discussant

A potential problem for implementing the Article is that it runs counter to elements of the European Biotechnology Directive and could therefore be difficult for European governments to agree to.

In response to many of the recommendations made to the Commission, it was unclear who would be able to undertake the extensive reviewing suggested. The Commission has limited time to prepare its report and is unlikely to be able to address these recommendations. Other initiatives, such as the conversion of the International Undertaking to a Treaty, were starting to deal with issues relating article 27.3(b) with development, and ISNAR is developing

technical assistance regimes. The Commission should focus on what is can achieve in its time frame.

It was recognised that there is little understanding in the international community of the TRIPS 27.3(b), and the Commission could play an important role by explaining clearly the different interpretation options and flexibilities (such as the importance of a research exemption), and the meaning of phrases (such as non-biological processes). Defining terms in the Article needs to be very precise, qualifying terms like 'plants ' with 'as they exist in nature'. Questions were raised about the exclusion of landraces in the Article, and the effect this has on the level of protection by IP or from IP (through restricted access). Clarification was recommended.

The discussant agreed with the ethical issues raised in the presentation, especially in regard to stakeholder involvement.

Discussion

The relationship between TRIPS and the CBD is thought to be conflicting by some developing countries. However the CBD only refers to IP in a way that does not jeopardise the objectives of the CBD, and the flexibilities in the two agreements mean that they can be implemented to either complement or conflict, as required. But whatever the interpretation, there must be precision in determining where there are possible conflicts.

The use of 'disclosure of origin of materials' as a requirement for IP application could be held by some to conflict with TRIPS, which states that only the standard three requirements; novelty, non-obviousness and industrial applicability, need be met. And if naturally occurring material is not patentable, why should the isolation of parts of that material be grounds for granting a patent?

The FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR) is in harmony with the CBD, covering the specific needs of agriculture and holds the middle ground between the CBD (environmental) and TRIPS (trade). Article 9 deals specifically with Farmers' Rights.

Rangnekar Presentation

Evidence from Developed Countries

There is evidence of only a modest and uneven impact of PVP on R&D investment across crops and companies. Evidence from the US suggests older companies are more successful at accumulating knowledge resources and major market crops are subject to the most intense IP focus.

Evidence suggests increases in number of varieties released, but issues concerning varietal quality and planned obsolescence remain. And there seems to be no link between rate of protection of varieties and number released.

There is an increase in the degrees of market concentration and exercise of market power (e.g. seed price and royalty rate increases); but questions of causal mechanisms remain.

Evidence from Developing Countries

There is a tendency to focus on select crops (high value/low volume), narrow production niches (post-Green Revolution areas), and GM-crop research. A greater dominance of IP and private sector research seems to be leading to investment in crops and traits that are of limited use to the poor.

Evidence that an absence of IPRs hindering access to varieties and germplasm from abroad is mixed, but there is suggestive evidence of 'controlled access' and privatisation of public varieties.

Seeds and Seed System Transformations

Seeds are the critical input into agriculture and the delivery mechanism for agricultural technological developments. A review of public and donor sector policy should recognise the role of the private sector and withdraw from activities which the private sector can recover its investments.

IPRs and Public Sector Plant Research

Emergent trends include:

a. stagnating public research expenditure
b. increasing presence of private sector
c. growing collaborative ventures between public and private sectors

Access to Research Tools

Evidence suggests extensive use of proprietary tools (i.e. transformation systems, selectable marker genes, promoter genes), but there is a lack of clarity on terms of access/use, and on obligations concerning dissemination of derived products. Plant breeding requires a range of research tools and cannot function in a protectionist environment.

The TRIPs Agreement

Although TRIPS was designed to achieve global parity in IP standards, it dictates minimum standards only, and since there is no obligation to adopt identical practices, many key concepts are undefined and ambiguous. Many countries have TRIPS-plus legislation, standards vary across jurisdictions and there is possible disharmony.

The UPOV Approach

In light of the history of the UPOV system of PVP, a current option is for a dual system which would include modern varieties and farmer varieties, but prohibit IP on wild species or traditional varieties.

Options for Implementing Article 27.3(b)

a. Exclude plants and plant varieties from patentability and establish *sui generis* system for plant varieties
b. Not exclude plants and plant varieties from patentability
c. Not exclude plants from patentability and provide for protection of plants/plant varieties through a dual IPRs system (e.g. the US)
d. Exclude only plant varieties from patentability and establish *sui generis* system (e.g. EPC)

Components of *Sui Generis* System

Options include: modifying the DUS system and introducing 'identifiability', 'merit' via agronomic requirements, stronger novelty criterion, and tying in CBD principles (e.g. declaration of geographical origin). All plant species and botanical genera must be included within the coverage of law. There are many outstanding problem concerning the scope and strength of rights of farmers and breeders which need to be addressed

<u>Discussant</u>

IPs must be analysed in their economic, technological and access contexts. The paper was thought to deal with IPRs without looking at access issues. Access to genetic resources under the CBD was usually regulated by contractual agreements, and these could me an impediment to further access. Moreover, in classical plant breeding, it is difficult and often impossible to decide how to value the inputs of the sometimes tens of varietal stocks contributing to a variety, after many years of breeding. Moreover, the transaction costs of negotiating contracts, tracking the use of material, and litigating for the enforcement of rights is probably higher than the benefits that might be obtained: there is already evidence that transaction costs and uncertainties associated with contracts.

In terms of how IPRs themselves affected access to the genetic resources in a protected product, it was necessary to distinguish between patents over plant varieties and PVPs. Under the UPOV PVP regime, only the variety is protected, and by the "breeders' exemption" free access to the genetic resources is allowed. The biotech model of patent protection is not easily applicable to traditional plant breeding, and, for various reasons, pushes the seed industry in countries using variety patents towards high cost, high tech solutions, which cannot address the needs of small farmers, This factor, and capital concentration in the industry in general means that it is not profitable for the private sector to invest in research on small-scale crops or those with small markets, and so much of the R&D is focusing on input and labour

reducing traits. Thus the responsibility of supplying the needs of the poor, and developing minor crops and crops for small environmental niches, weighs increasingly heavily on the chronically under-funded public sector, which is finding it increasingly hard to work with a private sector that controls not only important genetic material under patent, but the "enabling technologies" needed for biotechnological plant development. Governments need to look at the effect of IPRs within the specific context of agriculture, and of the needs of developing countries.

The ITPGR recognises that countries are interdependent with respect to the most important crops for food security. It therefore establishes a Multilateral System of Access and Benefit-sharing for a list of crops supplying about 80% of world calorie intake. Countries agree to pool their resources of these crops, and to arrange benefit-sharing on a multilateral basis. There is therefore no link between the country of origin and benefit. There is a clash between access legislation and IPRs; an option is to have a pool of information and rules to regulate access to it rather than proprietary rights over material.

Technological protection mechanisms e.g., GURTS, are a further method of protecting material, but if applied as an appropriation strategy, are likely to undercut rational IP systems. There were good policy reasons for banning their use as an appropriation mechanism on these grounds. It was however necessary to distinguish between their use as an appropriation strategy, and ways in which genetic use restriction technologies may have a production potential, and not confuse the two.

Discussion

Would the absence of any IP make a difference to poor people? The current situation is that there is a flow of genetic resources away from the diverse heritage of small farmers which is being concentrated under the control of large multinational companies. The threat is that the resultant access restrictions will damage the genetic biodiversity which is the basis for evolution and crop adaptation, and thus affect the ability of small farmers to adapt to local environments.

Questions were raised as to whether *sui generis* systems that make specific arrangements for different species and categories of plants, for example open or self-pollinated plants, could be useful. But it was argued that this distinction could be dangerous, as arbitrary or unnatural isolation of groups of species could prevent vital genetic out-mixing. The question was deemed to be unclear and requiring more research.

Biotechnology and chemical companies are taking over from the plant breeding industry and this is reflected in the increasing dominance of the patent system. The IPR system that exists today developed from industrial practice of determining ownership over material goods, and this is not relevant for live, natural, evolving materials. Thus a different system is needed which is sensitive to the peculiarities of biological material.

It was suggested that the Indian PVP law could be used as a model for other developing countries, as it has good Farmers' Rights elements, but must be adapted to suit national circumstances. The ITPGR provided that the operationalisation of Farmers' Rights was to be done at national level.

The political reality is that TRIPS is signed and is being enforced, and the CBD has not even been ratified by the US. The International Treaty promotes the free exchange and access to genetic resources, and is in harmony with both the CBD and IP regimes.

Session 2: Food Security and Technology Development

Flexibilities in TRIPS and alternatives

It was asked whether the approach in Article 27 3 b) was the right one for both developed and developing countries? There were flexibilities in the Article, but were they sufficient to meet the needs of developing countries? Plants were not like software in that they were not easy to copy. There was some debate as to whether the Indian Patent Amendment Bill which requires disclosure of origin, and recognises oral knowledge, is TRIPS incompatible.

Sui generis Systems and Alternatives

LDCs are not homogeneous, some are innovators and benefit from IP protection, other have no innovation capacity as yet, but could develop an IP system to suit their stage of technical development. It was suggested that the UPOV regime was sufficiently flexible to be fitted to current national development circumstances. But it was also argued that UPOV was developed for industrial scale temperate agriculture and is not suitable for tropical subsistence farming; for example there is no concept of proactive farmer rights (as opposed to "exceptions" to protect farmers". The distinction between modern and farmer plant varieties is not viable as most new varieties source traits from the great agro-biodiversity maintained by farmers. There are no readily available alternative *sui generis* systems for developing counties to adopt and there is thus considerable pressure to plump for UPOV. Moreover, the UPOV model was often promoted through bilateral trade agreements. It was suggested that a review of the applicability of UPOV to developing countries should be undertaken. The Convention of Farmers and Breeders (COFAB) was suggested as a potential non-UPOV alternative. This would be a new platform to incorporate farmers and breeders rights and secure access to and exchange of seeds and varieties. Similarly the suitability of the OAU legislation required to be considered, as also the new Indian legislation on plant varieties.

Global Food System

Food security depends not only on seed saving but the ability to exchange and sell seed. These practices are economically essential and necessary to maintain the gene flow and the selection responsible for agro-biodiversity. But the global food system is driven by the developed world. IP rights in these areas have been developed to serve the needs of Northern researchers and breeders. Poor farmers are of little importance in determining the direction of agricultural change, and the economic power is concentrated in the MNCs. The evidence of increasing market concentration in North and South was considerable. This was described as a public policy issue; a choice between supporting small farmers with a public research infrastructure, or letting market opportunities in rich countries determine agro-industrial R&D.

Applicability of IPRs to Developing Country Agriculture

Because of the high transaction costs of the application and enforcement, IP is more feasible in a developed country where these costs are comparatively small. The complementary procedures required to implement a system of PVP were arduous for developing country administrations. There is little evidence of developing countries being able to use the IPR system to stimulate innovation. Moreover, in some cases there was a poasitive downside. For instance, in the Basmati case, it required the effort of the Indian Government over several years to challenge patent claims that could have severely affected India's rice exports. While IP protection might be relevant to stimulating innovation in the chemical and pharmaceutical industries, the case was much less clear in the agricultural sector.

IP and Research Investment

There is little evidence to prove a causal relationship between IP and innovation in developing countries. The nature of agricultural research in developed and developing countries was very different. IP rights might be appropriate in developed countries for "industrial" agriculture where research is predominantly in the private sector, but this was not the case in developing countries.

It was agreed that an active public sector is vital for developing countries, but as the public sector did not seek to benefit from patenting its 'pro-poor' innovations, it had not hitherto used the IPR system. However, the relationship between the public and the private sector is changing, and there has been a rapid trend towards more private sector research. Public science provides the basis for much private research. Information in the public domain can be used by anyone as they wish, but this information was increasingly used as the basis for downstream patenting.

Commercial Practices within Public R&D

As a result, the incentive to place knowledge or material in the public domain is decreasing. It was argued that some countries are now unwilling to supply genetic resources to the CGIAR centres for fear of losing control of these potentially valuable national resources to private sector appropriation. Moreover, there was apparently a declining use of CGIAR held material by others. The restriction of access to enabling technologies is encouraging public R&D centres to patent their work, either to "protect " it for the public sector or as a bargaining chips to gain access to patented technologies held by others. This is changing the research ideals of openness and information sharing, as it becomes more necessary to control access to this 'public' resource. The significant growth in PPPs has introduced new issues of IP ownership and further complicated the aims and practices of public and private sector research. The significance of transaction costs in getting "freedom to operate" was arguably an increasing burden for research institutions. Overall, the operating ethos of the public sector had changed.

The Global Forum on Agricultural Research (GFAR) website www.egfar.org was recommended as a useful resource.

Session 3: TRIPS, the ITPGR and the CBD

Relationship between the CBD and the FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGR)

Developing countries had been concerned about the loss of bio-resources, and the CBD reaffirmed national sovereignty over a country's genetic resources. This should not be confused with the assertion of property rights. There was no implication that sovereignty should be equated with IP. It was contended that the CBD was designed to allow countries (or communities?) to make a fair return for making available national genetic resources, but this was based on a mining/extractive industry model, which is less appropriate to agriculture. Hence the ITPGR fulfills a specific need in relation to accessing agricultural genetic resources.

The ITPGR

The ITPGR is believed to be in harmony with both the CBD and TRIPS, and go some way to securing free exchange of genetic material, and implementing a global plan of coordinated action. It offers support to the public CGIAR system of agricultural research by conserving a selection of crop genetic material in the multilateral system from direct patentability. It was recognised that the maintenance of open access to genetic resources in regions of high crop diversity is vital for developing country food security, as sustaining the momentum of crop development relies on this diversity to source new traits and genes. However the ITPGR only covers 35 genera of plants, and a potential problem is that the rest are covered by the not wholly satisfactory provisions of the CBD.

It was claimed that the US would not block the ITPGR as it keeps genetic resources accessible to industry. But it also dictates that industrial applications based on this 'common' material are covered under material transfer agreements which require benefit sharing and payment of mandatory royalties. ITPGR Article 12.3(d) states that "all genetic parts and components" are protected from patenting but "in the form received". This qualifier could be interpreted to allow a gene which has been isolated and its function determined, to be patented. The decision on how to interpret this ambiguity will be made by national governments, but concerns were raised over TRIPS compatibility. Nevertheless, the benefit of the ITPGR was the potential escape from "gene by gene privatisation" in the crops covered, and the support for farmers' rights and the protection of traditional knowledge.

Implementation of the CBD, ITPGR and TRIPS

There was concern that the CBD, ITPGR and TRIPS isolated the interconnected elements; farmers rights, traditional knowledge and genetic resources, and treated them separately. It was suggested that these three international agreements should be implemented at a national level within the same framework so that they can have practical effects. The Africa group was highlighted as leading the way by producing model legislation. But there was concern that the model legislation is in conflict with many African countries' national legislation, which do not recognise common property rights. And additionally, genetic resources are never truly common as there are always some restrictions to access. Therefore the greatest tensions and conflicts are not within the three international agreements, but between them and national law and practice.

It was noted that MTAs were a godsend for lawyers, but a nightmare for researchers and breeders.

Plant collections

There was a debate as to whether the pre CBD and pre ITPGR gene banks and plant collections, such as the CGIAR collections are outside protection for common resources. There was also debate over what qualifies as a public collection; whether this is an issue of national government discretion, and it was suggested that if private collections now want to access the public/common resource pool, they must join and be governed by the ITPGR. The danger of bringing environmental issues into the trade arena is that, as observed in Doha, it is politically unpopular in developing countries.

Disclosure

The discussion on disclosure of origin of genetic material in patent applications raised the argument that compulsory disclosure may not be consistent with TRIPS as it represents an extra, 4th requirement for patent application (the Colombian proposal was cited in reference to this problem). But the response to this was that UPOV has 5 application criteria and there

are ways of avoiding legislative problems (such as the Danish legislation, where failure to disclose does not invalidate a patent). Several other national policy positions on this issue were stated: the Indian Patent Amendment Bill requires disclosure of origin by a patent applicant; and the British policy is to push for the inclusion of disclosure of origin as a secondary system but not as a requirement for patent application. However, the policy of disclosure could also be seen as an important way of linking CBD and TRIPS.

Disclosure of origin was thought to be important in preventing biopiracy and could facilitate setting up benefit sharing arrangements. It could prevent the misgranting of patents, on the grounds of prior art. The Indian government, based on a sample survey of US patents, has estimated that about 40% of US patents might not have been granted, because of prior art considerations. However there are serious problems in determining the origin of biological material, living material has very different properties to mechanical objects, as it is the product of thousands of years of evolution, selection and genetic intermixing, and is in the process of continuous change. This is, for instance, a problem with the CBD definition of country of origin, which the ITPGR avoids by bringing them into the multilateral system.

Session 4: Conclusions and Recommendations

Particular themes stressed were the need to maintain access to technologies and resources for the public sector, to benefit poor producers. There was a concern that IP in this area was more about appropriation than innovation, and about investment rather than innovation. The issue for the Commission was how IPRs can be used as a tool to achieve development goals? There was also concern about how to deal with technological protection mechanisms, such as GURTS.

The Commission could usefully help, inter alia, by proposing an agenda for the Governing body of the IUPGR.

Theory of patents: the conceptual relationship between IPRs to public goods

- Genetic resources and the techniques of innovating with natural evolving life forms have special characteristics that are not accounted for by IPRs, which were developed for inanimate mechanical products in industry.

- IPRs can be used to either support innovation or to appropriate value (or both simultaneously). IPRs are becoming commercial tools, emphasising appropriation not innovation.

- IPRs should be considered in the context of other technological protection mechanisms (such as GURTs), and the interrelationship of different forms of IP protection in the food industry (PVP, Patents, Trademarks, etc.)

- IP provides privileges not rights.

IPRs divert private R&D away from poor country agriculture

- For Northern agriculture, the profit potential of the large and lucrative market motivates the private sector to greater efficiency. In this area public sector R&D may not be as effective. And in some niche markets in poor countries, private sector seeds (protected by IPRs) can be effective. However, IPRs as a policy tool are not necessarily effective in encouraging agricultural R&D for poor farmers in developing countries, where other investment factors such as market potential are weak.

Changes in public sector research

- Public sector needs more funding for R&D if it is to provide an alternative to the north-centric private sector. But is public sector R&D also out of touch with the needs of poor farmers? Is it realistic in the current political environment to revert to a public R&D system?

- Access legislation: The public sector need to have access to 'platform and process' R&D technologies:
    - Knowledge (TK)
    - Genetic resources
    - Tools and techniques

Impact of private control of biodiversity through IPRs on poor farmers

- Does IP have any positive impact on the poor in an agricultural context?

- Concerns about broad patenting of genetic resources. 70% of poor farmers use saved seed so retention of knowledge and freedom of exchange is essential for them. Patenting of general features of staple crops like rice may restrict essential access in developing countries.

- Reduction of agro-biodiversity through the private sector system of industrialised 'monocultures' damages the resource base from which future agricultural development could be based. Focus on animals and microorganisms as well. Pig and chicken companies buy up varieties and leave them to die if the genes are not immediately valuable (animals exhibit more rapid extinction than seed bearing plants)

TRIPS, the IUPGR and the CBD

- What are the flexibilities within TRIPS and are they enough?

- Disclosure of origin issues: If a patent application is valid and legal then there should be nothing to hide. And this might go some way to

increasing the proportion of wrong patents challenged prior to granting. Benefit sharing mechanisms could be developed in cooperation with disclosure legislation.

- Flexibilities in international rules should be interpreted by national governments to suit their development requirements, and not enforced by the WTO appellate body.

- Access legislation and technology transfer.

SESSION 3: TRADITIONAL KNOWLEDGE AND FOLKLORE

(Paper 4. – No paper was commissioned for this study area**)**

Workshop 4. Minutes – Traditional Knowledge – 24th January 2002

Commission on Intellectual Property Rights

Workshop 4: Traditional Knowledge

24th January 2002

Participants: Alejandro Argumedo (Indigenous Peoples' Biodiversity Network), Linda Brown (DFID), Graham Dutfield (International Centre for Trade and Sustainable Development), J. Michael Finger (American Enterprise Institute), Anil K. Gupta (India 's National Innovation Foundation), Manuel Ruiz (Sociedad Peruana de Derecho Ambiental, Peru), Diana Sternfield (UK Bioindustry Assocaition).

Commissioners: Ramesh Mashelkar (Chair), Daniel Alexander, John Barton, Carlos Correa, Gill Samuels.

Secretariat: Charles Clift, Tom Pengelly, Phil Thorpe, Rob Fitter.

Summary: The need to protect, maintain and preserve traditional knowledge was outlined. The importance of customary laws and practices in contributing to the protection and dissemination of TK within communities was emphasised, and models for encouraging the fair exploitation of TK were also discussed. The workshop considered the role of TK based digital libraries in preventing the misappropriation of TK through the patent system, and other forms of IP protection, e.g. copyright and trademarks. A wide range of recommendations were also presented to the Commission.

SESSION 1: TRADITIONAL KNOWLEDGE – GENERAL DISCUSSION

The workshop opened with two informal presentations illustrating, from two slightly different perspectives, the value of TK and the need for protecting it.

Preservation and cultivation of TK – a view from Peru

The importance of TK to local communities was outlined together with concern about the ongoing erosion and loss of that knowledge.

Customary laws play an important role in protecting, maintaining and preserving TK in many communities. Such laws may be based on the principles of collective rights, free flow of knowledge and/or reciprocity. Exclusivity may apply in certain instances, for example in relation to ritual knowledge. Seeking to extend existing modern systems of IP protection to such communities might undermine their existing customary systems of protection. The developed world's concept of wealth is not necessarily shared by indigenous communities.

TK should also be thought of as a traditional way of knowing, for example the selection of odd plant varieties for further propagation or the identification of different varieties. Such activities, which might be generalised as knowing, improving, practicing and refining, are often undertaken by different people within the community.

Legislative initiatives

A brief overview of the objectives of the Peru's draft law the protection of Collective Knowledge of Indigenous Peoples was provided. The main features of the proposals are:

- Any commercial access to TK possible only with the prior informed consent of TK holder.

- Collective TK that is not in the public domain is protected against disclosure acquisition or use.

- A register of collective traditional knowledge is established. This register would not be available to the public – access only available with the prior written consent of the knowledge holders and entry of data into the register would be optional.

- A national trust fund is established into which part of any royalties obtained from licences granted in relation to TK are paid. The fund will be used to assist development of all indigenous communities including those not actively exploiting their TK.

Indigenous communities are consultations on the draft proposals. The next stage is a national strategy meeting in late March on enacting the Law.

The requirement to obtain prior informed consent might lead to problems where knowledge is held by more than one community and one of those communities was unwilling to provide the consent. It was also noted that there was an unreal expectation among some of the communities of the value of their TK.

Further discussion on the draft law can be found on the WIPO website http://www.wipo.int/news/en/index.html?wipo_content_frame=/news/en/conferences.htmlsite in document **WIPO/GRTKF/IC/2/9**

Exploitation of TK – a view from India

A representative of India's National Innovation Foundation (NIF) and the Honey Bee Network (HBN) provided an oversight of how TK could be exploited for the benefit of the community and the TK holder.

The NIF and HBN seek to link local innovators and innovations with science and technology experts, investors and entrepreneurs. A database has been

established, containing over 20,000 local innovations. The NIF's aim is to set up a few incubator project at leading academic institutions to convert some of these innovations into viable business solutions.

Central to the operation of the database is the principle that the innovator retains control over how his innovation or knowledge is exploited. The NIF is duty bound to share any benefits accruing from the knowledge in its database with, inter alia, the provider of that knowledge.

Prior informed consent is effectively operationalised at the time of registration. A number of patents have apparently been obtained for innovations included in the database. Although one of the aims of the database is to facilitate the sharing of knowledge, the need to prevent a prejudicial disclosure prevents some the knowledge being shared openly.

The possibility of establishing an international register of traditional knowledge might facilitate a greater uptake of TK whilst at the same time reducing transaction costs for those accessing the register.

Legislative initiatives

India has also enacted new plant variety and farmers' rights legislation which provides for community based rights and also appears to allow commonly known varieties that have not been commercially exploited, to be protected. The act also allows communities or their representatives to seek remuneration from the breeder for any contribution made by that community in the evolution of the protected variety.

The act also requires the applicant to disclose the contribution made by communities in developing or evolving the variety. Failure to do so could lead to refusal of the application or cancellation of the right.

Possible model for promoting and protecting TK

A model for protecting TK developed by the Indian lawyer Pravin Anand was discussed. He proposes establishing perpetual but limited rights for community based traditional knowledge. The rights, which would be managed by a collecting society type of body, would include an acknowledgement and a right to prevent the distortion or harmful use of the TK and a reproduction right. Licences would be available as of right on payment of a small fee.

WIPO's activities relating to traditional knowledge

WIPO has undertaken considerable work in the area of traditional knowledge. A recent survey of WIPO Members on TK revealed an almost equal split, among the albeit few respondents, between those who felt that existing forms of IP protection were adequate to protect TK, those who felt existing forms of IP protection if complemented by other forms of protection would suffice, and those who felt that existing IP systems would always have limitations when seeking protection of TK. The survey also showed that three countries had

enacted, or were in the process of enacting specific legislation covering TK (Guatemala, Panama & Peru).

In addition to the ongoing discussions on TK in the intergovernmental commission, WIPO is also providing assistance to countries seeking to protect TK through workshops, studies, informational material and training. Particular issues to be covered include:

- The development of information materials on intellectual property options for the protection of TK
- Practical, national information and training workshops on the intellectual property system and the protection of TK
- Intellectual property information, training and standards for the documentation of TK

Furthermore additional studies/projects will also be undertaken to assess:

- Actual examples in which TK protection has been sought under the intellectual property system
- The feasibility of applying customary laws to TK
- A pilot project on collective acquisition, management and enforcement of intellectual property systems in TK

Comments arising from the informal presentations

Customary laws should be respected, and rights of communities in respect of their land are essential. However, some of the developing countries taking a lead on TK are not necessarily the most sympathetic to the rights of their own indigenous communities.

In order to provide a greater recognition for customary laws, it was suggested that the UK should sign and ratify Convention169 of the International Labour Organisation. This Convention does not deal directly with IPRs – more information at:

http://www.ilo.org/public/english/employment/strat/poldev/papers/1998/169guide/169guide.htm#C1

Concern was raised about the suitability of WIPO as a forum to discuss and formulate a coherent policy on the protection of TK, as there is a lack of direct participation by indigenous communities and ability to address non-IP issues. Funding is likely to be made available to facilitate the participation of indigenous people in the discussions in WIPO.

SESSION 2 - DISCUSSION OF PARTICULAR ISSUES RELATED TO TK

Extent of the patenting of inventions based on developing countries' TK and genetic resources

The Government of India has undertaken an analysis of patents relating to TK and genetic resources, and revealed a split between "white patents" (those which clearly involved an inventive step), "grey patents" (those that might have involved an inventive step), and "black patents" (those that clearly did not demonstrate either novelty or an inventive step).

For white patents, the concern is that the patentee may be unfairly benefiting directly from the TK or genetic resource possibly without any form of benefit sharing or recognition being provided to the guardians of the knowledge or resource.

For black patents the issue is why these patents were granted. Possible reasons might include output pressure on examining authorities or the lack of adequate prior art information available to the examiner considering the patent. This latter issue is already being addressed in WIPO and certain developing countries with the creation of TK Digital Libraries (TKDL). These digital libraries will not only detail, in writing, considerable amounts of TK already in the public domain but will do so taking into account international classification standards (WIPO International Patent Classification system IPC) so that the data will be easily accessible to patent examiners.

Ideally as these TKDL come on stream there will be incorporated in the PCT's minimum search documentation list therefore ensuring that the data in these libraries will be considered during the processing of patent applications filed under the PCT system.

It was also suggested that search and examination guidelines in patent examining authorities be updated to ensure that TKDLs are consulted and that assistance be provided to the developers of TKDLs, and TK holders, so that they can manage the documentation process and safeguard any inherent IP in the TK.

Disclosure of origin in patent applications

Should patent applicants be required to disclose, in the patent application, the source of origin of any genetic material or TK on which the invention is based? Disclosure of origin by itself might not be sufficient, as many applications already give some indication of the origin of essential genetic material (A rough online search of patent documents showed over 196 referring specifically to Peru, Peruvian, Andes or Andean in their abstract – at least 27 of these related to genetic material from those regions), yet the legitimacy of that genetic material was rarely examined.

Only a few countries have implemented the CBD in general or introduced specific legislation covering access to TK and genetic resources in particular. (Access might however still be regulated under other laws).

Non-patent based protection of TK

The suitability of other non-patent forms of IP protection for TK were considered. Suggestions and examples included the Australian use of copyright to protect against misuse of aboriginal sacred marks, the international protection accorded to the Red Cross and Red Crescent symbols, use of geographical indications by for example Champagne producers, utility model protection, trade secrets, plant variety legislation and unfair competition rules. In respect of GI's it was suggested that the scope of extended protection under TRIPS, available at present to wines and spirits, should be extended to other products of more relevance to developing countries.

Collecting societies have assumed a greater role in representing communities in a number of countries for example Algeria and Australia.

For more information on the Australian protection of TK see Issues: Intellectual Property at: http://www.atsic.gov.au/default_ie.asp

Novelty Requirement and the protection of TK already in the public domain

TK that is known to one community but which is not used (or presumably known) outside of that community should be protectable under existing IP systems. Essentially such knowledge would be considered as not having been made available to the public. The presence of customary laws or practices within a community, limiting or prohibiting use and dissemination of such knowledge outside of the community, might be sufficient to demonstrate that unfettered disclosure, as recognised by modern IP systems might not have occurred. In the absence of any such customary laws or practice, or in the case where the knowledge/invention had been unconditionally disclosed outside of the community (even just to one person) then established IP laws would most likely consider the knowledge/invention disclosed.

A further suggestion was that a grace period dating back to the agreement on the CBD should be provided in respect of knowledge disclosed as a result of, or with a view to satisfying the requirements of, that agreement.

SESSION 3 - TOUR DE TABLE OF KEY ISSUES FOR THE COMMISSION

General Points

- Key question is how to help poor people earn more from their TK. In the list of effective means of achieving this, legal (IP) means may in practice turn out to be near the bottom of this list.

- Look at this issue from the perspective of empowering poor people within the current international IP system, not isolating them further from it.

- Re-balancing the IP system from the perspective of the key issue of "fairness". On the other hand, even if its decided that the formal IP system is not the right place to do this, that's not to say that its not possible to have national systems address "fairness" through rules on benefits sharing (in so far as that is what is meant by the term "fairness").

- Key importance of definitions of "TK" and "protection". And whether we mean "protection" or actually "commercial exploitation" of TK.

- When considering the application of IP tools, important not to focus on one or two tools (such as patents): look at the range of IP tools across the board (collective trademarks, trade secrets, and geographical indications, copyright). At the same time, worth looking at the potential for new forms of IP tools for protecting

- Design and selection of the particular IP tools for TK protection has to take into account of broader context of the TK owners and their livelihoods as part of the decision criteria. Eg there is little point in protecting the TK whilst not recognizing the importance of preservation of the habitats of the TK holders.

- May be different reasons for protecting TK as compared to non-TK, and the formal IP systems currently used for protecting non-TK may not be considered appropriate for application to TK from these perspectives.

- Scope for more dialogue in this area in international and national fora. This more likely to yield progress in the next decade or so, rather than expecting the development of new international rules or treaties. However, there is potential at the national level for development of legislation for the protection of TK. This will require capacity building in poor countries, which rich countries should support

- Experimentation with different institutional structures and mechanics that may be built upon for low-transaction cost TK protection systems. This could include:

- Incorporation of journals, newsletters, and gazettes which publish disclosed TK into the PCT minimum documentation list
- Collective management of IPRs in TK
- Reduction of transaction costs of acquiring, using, maintaining and enforcing intellectual property rights, etc

- There is a need to continue the basic research on using a multiplicity of intellectual property tools for TK protection, even while Member State discussions are on-going, in order to provide technical input into that debate and facilitate substantive progress. This could include research on:
  - Use of a multiplicity of intellectual property tools,
  - Interfaces with informal systems,
  - TK-terminology in the intellectual property context, etc.

- Work should proceed simultaneously and in a complementary manner on 'positive' and 'defensive' TK protection.

- Specific strategy should be taken up to periodically review all the patents granted anywhere in the world on herbal based knowledge and resources so that one can have a clear understanding of the extent to which biopiracy exists and continues to flourish.

Exploiting TK

- An international registry for providing low transaction cost facility for short-term protection to traditional knowledge and small innovations around the world through an agreed treaty among the WIPO member countries. The transaction cost of the innovators will be obviously reduced. But more importantly it will also reduce the transaction cost of potential entrepreneurs and investors who may like to join hands with the innovators to complete the value chain.

- Unless the protection is provided to small innovators, the legitimacy of the IPR system will become suspect. While existing IPR system can indeed help to some extent, there is a need for considerable modification to make it accessible to the dispersed, disadvantaged traditional knowledge holders. In the absence of such a system, Honey Bee Network is not able to disclose large part of a database fearing that it might pre-empt the possibility of protection.

- A 5 year grace period for application for formal IP protection of TK after disclosure by local communities of that TK to a third part (this to allow for cases where the TK holders would have wanted to acquire the IPRs themselves, but did not realize that this was possible due to lack of information)

- The social research councils and national research councils of developed and developing countries must enforce copyrights of local

knowledge holders and providers. For every grantee of funds from these institutions, acknowledging the identity and interests of communicators and innovators must be obligatory.

- Knowledge of indigenous communities which is not reasonably accessible (ie not part of the databases) should not be considered as prior art in patent applications.

- The collective management systems for protecting individual IP of traditional knowledge holders and grassroots innovators must be institutionalised so as to make IP system accessible to large number of small people. The issue relating to enforcement and infringement can also be pursued by the collective association.

- Collective trademarks to protect sacred rights should be allowed by modification of the existing trademarks regime nationally and internationally.

- Protection of Geographical Indications should be expanded for other products of interest to developing countries, as this is a good means of protecting both specific instances of TK but also the other constituent elements of the local communities and environment from where this TK originates. International registry for geographical indications, registration to be negotiated among the member countries should not restrict itself to only wines and spirits but include other products as well.

- Plant varieties discovered in the wild should also be protected as already done in China and France. The uniformity and stability should not be considered as necessary condition for plant variety protection. These conditions have evolved keeping in mind the varieties for irrigated regions in mind. In rain fed regions there are buffering populations where uniformity would not be viable and stability can be judged only over a longer term cycle of six to nine years.

- For protection of plant varieties bred by small farmers and local communities, they should not be required to provide data needed by the plant variety authority because of their inability to generate such data. Authority should get such data generated at their cost.

- Large numbers of local animal breeds are considered non-descript and there is no system of recognition and protection of the traditional breeds as well as improvements therein. There is no international agreement on animal breeds and their IP protection. Some countries include these within the Plant Varieties Act.

Policy Formulation and Decision Making

- Participation of TK holders in international/national IP rule making processes is essential for their legitimacy.

- WIPO should be mandated by member states to reach out to wider constituencies who are important stakeholders in the debate over protection of TK, folklore and genetic resources (both in terms of funding and reform of procedures for WIPO meetings to facilitate greater participation).

- Closer collaboration between WTO, WIPO, FAO, UNESCO, CBD on their deliberations and rule-making on TK, folklore and genetic resources. In these for a, keep these debates pragmatic and technical, rather than too political. Should deal with the issues in a business like way, reflecting that they should be of importance to all member states. In particular, member states need to provide more and more substantive inputs to these for a, and these should be better informed by the views of stakeholders at the national and regional level.

- Ensure that necessary budgetary resources are added within WIPO for the exploratory work on intellectual and traditional knowledge. In particular WIPO should be enabled to reach out more effectively to a wider constituency in these cross-cutting areas, in particular local and indigenous communities, and also the private sector. This would need to be done both on a:
  - Resource basis, i.e. funds for travel and participation of TK holders;
  - Procedural basis;

- WIPO should hold more consultations at the local, national, regional levels to develop substantive inputs from the Members of the Intergovernmental Committee. What is needed are technical submissions and proposals for practical improvements of existing IP systems or for new IP systems;

Misappropriation of TK

- Scope for action in developed countries to counter-act cases of misappropriation of TK from poor countries (eg bio-piracy). Developed countries seem to feel they have no responsibility in making the access and benefits sharing aspects of the CBD work: this is not true.

- There should be an international registry for existing TK and new innovations to assist the prosecution and enforcement of community rights over their TK worldwide. Local databases and registers of TK should also be given value at the national level.

- Local language databases of patent information must be created so that communities can monitor directly or through NGOs whether their knowledge has been expropriated by somebody without their authorization.

- Disclosure requirement in patent offices in developed and developing countries should be modified. There is no great purpose served by mere disclosure of country of origin. One should disclose whether the

material and associated knowledge used for making claims in the patent applications have been obtained lawfully and rightfully.

Access and Benefit Sharing

- Benefit sharing and PIC mechanisms should reflect local values and the views of local stakeholders as to what is appropriate.

- Requirement for disclosure of source of origin of material and for PIC of local communities in patent law in developed countries.

- Experimental national legislation models on how the full range of IP tools can be used to protect TK. In addition, need to make resources available to study these experiments through case studies, to learn lessons of experience. In particular, key issues to examine would be different institutional approaches.

SESSION 4: COPYRIGHT IN DEVELOPING COUNTRIES

Paper 5. Executive Summary – Intellectual Property Rights, the Internet, and Copyright

Workshop 5. Minutes – Copyright, Software and the Internet – 21st January 2002

Commission on Intellectual Property Rights

Study Paper 5

Study on Intellectual Property Rights, the Internet, and Copyright

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Executive Summary

The report, totalling 104 pages, is divided into six sections, plus five appendices; it focuses primarily, though not exclusively, on the use of access to copyright-protected materials for educational purposes in the 50 poorest and least developed countries (LDCs) as identified by the World Trade Organisation.

1 – Copyright and Poor/Least Developed Countries- An Overview of Some of the Issues

Copyright should primarily serve the instrumentalist function of satisfying social goals and values: the creation, spread and sharing of knowledge and information, and public use and access. In the current era, and particularly with regard to LDCs, the presumptions of copyright are ripe for wholesale reconsideration. The biases and interests of developed countries are monopolising the international copyright agenda; the interests of LDCs have been ignored and, in any event, copyright, a Western concept, is not a prerequisite for the production of works in LDCs.

Industrialised countries, the main producers of copyright-protected works, have also been the nearly exclusive beneficiaries of expanded intellectual property protection. LDCs are primarily copyright users and have received minimal benefit. Increased copyright protection and enforcement in their countries, as mandated by the Agreement on Trade-Related Intellectual Property (TRIPS) and the Berne Convention, work primarily in the interests of developed countries and copyright holders, predominantly multi-national enterprises. Credible economic projections as to how increased copyright protection will assist LDCs are rare and particular. In the current conjuncture, greater copyright protection equals increased outflows of foreign currency from LDCs to developed countries.

The Berne Convention, established in 1886, represents a legal “hangover” from the era of direct Western colonialism. Neither its reform nor its amendment is a practical possibility; rather, a global movement aiming for its repeal should be launched.

The main tasks of the moment for least developing countries are to create exemptions to copyright restrictions, figure out creative way to avoid copyright presumptions, and improve affordable access to materials. And providing assistance to such endeavours is the main task of the developed world if they wish to help, rather than further dominate, such countries.

2 - Copyright, Proprietary and Free/Open Source Software

Copyright-protected proprietary software is not the answer for the computing needs of LDCs. Such software necessarily incurs very high licensing costs and encourages unauthorised uses, is inflexible, cannot be adapted to local

needs, provides narrow training opportunities, creates further technology dependence, and raises anti-competitive practices outside the abilities of LDCs to curb. Free/open source software (F/OSS) by comparison, is a much-preferred alternative and represents a transfer of technology to LDCs that fosters, rather than limits, their development and access to and production of information, including on the Internet. But "switching" to F/OSS rather than "fighting" existing computer copyright laws is a more practical way forward.

It is recommended that governments in developed countries should develop " a favourable bias" towards the expansion of F/OSS in LDCs, provide funds for the training of F/OSS technicians from LDCs, propose and fund an international conference of F/OSS developers to built links between various LDCs and developing countries, establish public-private partnerships with F/OSS developers and LDCs, lobby the World Bank, the IMF and other international agencies to stop tying aid to the use of proprietary software, and set a "good example" with their own increased use of F/OSS.

3 – Copyright and the Internet

Internet access and usage still remains extremely low in LDCs compared to developed countries; copyright, however, is not the main barrier to access. Wider usage will not occur until improvements are made to basic communications infrastructure. In the longer term, the Internet could potentially bring great benefits to LDCs, such as the peer-to-peer creation and sharing of knowledge and information among all peoples of the world. What needs to be emphasised is that providing access in LDCs to copyright-protected online materials would result in neither lost revenues nor extra costs for rights holders in developed countries; further, because information is a non-rivalrous consumption good, there would be no diminished access by developed countries.

Yet even before the "Internet revolution" arrives in LDCs, there are worrying examples of information blockages being established, such as the proliferation of user-pay passwords (or tollgates) and laws outlawing anti-encryption technologies. Moreover, the Internet also poses certain "threats" to LDCs which could further stratify the world into "information-haves" and "information-have-nots"; these dangers need to be appreciated. There are, however, a number of positive and free-access online initiatives that do exist and should be encouraged.

It is recommended that all UK-hosted and Internet-based data sets of the type normally available to the public (e.g. through libraries) should remain open and free for fair dealing and educational purposes (e.g. the making of non-profit educational course packs for students). The terms and conditions of digital licensing schemes should be subject to adjudication before national copyright tribunals. Governments in developed countries should provide financial assistance to groups that have created "best practice" models of free online access. Publications that are derived from government funded research should be freely available online. Governments in developed countries, as

well as those in LDCs, should not enact similar legislation to the restrictive US Digital Millennium Copyright Act.

4 - Copyright, Education and Traditional Printed Materials: Some examples from Sub-Saharan Africa

While copyright restrictions are not the main barrier to accessing "hard copy" materials, which remain the dominant format of urgently needed educational materials in LDCs, they reinforce economic hurdles and create a further barrier by themselves. Examples include the need to pay copyright royalty fees for literacy campaigns and for anti-HIV/AIDS health education, as well as difficulties in translating materials into the wide range of African languages, in accessing materials for distance learning programmes, and in transferring rights from publishers in developed countries to their African counterparts.

The 1971 Appendix to the Berne Convention, itself a major compromise by LDCs and effectively gutted in earlier drafts by developed countries, especially the United Kingdom, was supposed to help remedy the global information divide. But the Appendix has been an abject failure and its narrow approach to copyright exemptions does not meet the information needs of LDCs. Nor should the Reproduction Rights Organisation (RRO) model be exported to LDCs as it creates further barriers, adds unnecessary transaction costs, and acts primarily as a revenue collector for rights holders in developed countries.

Rather than creating even more restrictive copyright regimes, LDCs should seek to strengthen users' rights in their countries. For developed countries, assisting in dramatically improved access to printed materials in LDCs will require a minimum of sacrifices -- indeed often none – and, in fact, will be in their long-term interests.

It is recommended that a new country-wide licence system be created for LDCs that would allow free use of copyright-protected, hard copy works from developed countries for an initial 20-year period; all non-profit educational, research, public health, and related uses would be exempt from paying royalties. RROs are not required for such a system and LDCs should actively discourage the establishment of RROs in their own countries. World Intellectual Property Organisation (WIPO) activities in LDCs should stress both the "pros" and "cons" of copyright, not only the "pros" as is done at present. UK legislation governing one-sided, unfair contracts – such as those that require assignment of copyright to a publisher as a condition of publication – should be amended to cover intellectual property transfers. The criteria for determining what is a "developing country" should be reviewed; South Africa has a strong case for inclusion.

5 – Copyright &Intangible Indigenous Heritage/ Knowledge

Developed countries are regularly misappropriating, without consent, indigenous traditional knowledge from LDCs; this practice is a direct threat to the continued cultural survival of indigenous communities. Current legislation is wholly unsatisfactory and proposed model laws remain simply models.

Copyright and its presumptions (e.g. requirement of originality and fixation) do not provide a vehicle for effective protection.

Acting in consultation with indigenous communities, it is recommended that governments in developed countries should enact domestic legislation that would prohibit unauthorised importation of such items and assist in the creation of sui generis protection systems for indigenous traditional knowledge.

6 – Some Related Issues and Final Observations

LDCs should not follow the example of the US and the EU which have increased the duration (term) of copyright. The possibilities of prosecuting anti-competitive copyright practices within LDCs seem slight. Concentrated and powerful western interest groups dominate the global copyright agenda and indeed, the whole field of copyright law and treaty making has been the subjected to regulatory capture by these groups. As a result, inflexible and one-sided copyright laws threaten to keep LDCs in a marginalised position and unable to benefit from a range of quite stunning technological developments in this area.

Appendices

Three lengthy appendices focus on:

a) the negative impact (e.g. for literacy programmes, for distributing anti-HIV/AIDS health materials) of existing copyright regimes on educational access to hard-copy materials in South Africa and LDCs (D.R. Nicholson - Copyright Services Librarian, University of the Witwatersrand, Johannesburg, South Africa)

b) the range of problems that copyright-protected proprietary software creates for LDCs and why free/open source software is highly preferred (Federico and Oscar Heinz- Fundación Vía Libre, Argentina)

c) the dangers of exporting Western concepts of technology to countries such as Botswana and Uganda (“Algorithms in Africa”, Wayne Marshall -Guinea)

A fourth appendix provides October 2001 country-by-country statistics on PC and Internet usage (International Telecommunications Union Report).

Commission on Intellectual Property Rights

Workshop 5: Copyright, Software and the Internet

21st January 2002

Participants: Alan Story (University of Kent), Richard Owens (BMR), Chris Zielinski (Informania Ltd.), David Vaver (University of Oxford), Michael Keller (Stanford University), Dervish Tayyip (Microsoft Corporation), Paul Goldstein (Stanford University), Eki Yemisi Omorogbe (University of Kent), Christopher May (University of the West of England), Georg C.F. Greve (Free Software Foundation Europe), Stuart Booth (Copyright Directorate, UK Patent Office)

Commissioners: John Barton (Chair), Ramesh Mashelkar, Carlos Correa, Daniel Alexander

Secretariat: Charles Clift, Tom Pengelly, Rob Fitter

Summary: The first session of the workshop comprised a presentation by the author of the study report commissioned on this topic, followed by a response by a discussant and a general discussion of the paper. In the first session, Story focused on the barriers to the access of hard copy materials in developing countries, and prompted a discussion as to whether the creation of exemptions to copyright laws was necessary in order to provide assistance to the developing countries. The second session focused on copyright and software, in particular whether international copyright rules and practices are a significant constraint on access to computer software needed by developing countries, and whether proprietary software or free software models were the best models to utilise in developing countries. The third session dealt with the relationship between copyright, and access to educational and scientific materials, and research over the internet and led to a discussion about encryption and fair use. The final session dealt with illegal copying, and protection for indigenous materials, and focused on the key issues of the workshop discussions as well as the areas in which the Commission could focus its recommendations.

Session 1: Overview of copyright and development issues

Presentation of Background Paper

Alan Story referred in his Commission study paper to Robert Hunter Wade's book "Inequality of World Incomes: What Should Be Done", which presents evidence that global inequality has risen in the last 20 years. It suggests a strategy for global income redistribution through the integration of LDCs into international markets by lowering tariffs and the privileging of foreign investment. The book argues that suggestions made by international organisations (World Bank and WTO), that it is in the national interests of

developing countries to accept uncritically the IP models of rich countries (such as increasing the duration of copyright protections, further privileging of copyright holders, the spread of encryption processes, and other barriers to access) will not lead to fairer income distribution.

The overall theme of the paper is that developed countries can provide assistance to developing countries through exemptions to these Copyright laws. Many of the recommendations could be undertaken at zero to minimal cost to the developing countries, with no loss envisaged.

There are barriers to access to information in Africa. For example, in South Africa, nurses have to pay for HIV/AIDS information for their patients; the inability to distribute books compounds literacy problems; copyright on computer software has become a tax on developing countries. What is copyright for? To protect electronic-book publishers or to ensure millions have a chance to read their first book?

Discussant

Copyright and the system it represents bring the fruits of creativity to the public. There is conflict in the application of the international copyright standards (TRIPS) to the socio-economic contexts of the South. It is natural that problems should be encountered between rights and exceptions and it is right to seek to balance these. However the system not only benefits rights-holders, it also benefits users and the countries involved (through revenue generation), and without a stable framework of rules, the system cannot take hold. Thus change should be made through the system not to the system; greater flexibility not legal change.

The report presents a view based on legitimate concerns, but does so without presenting a fair view of copyright holders and proprietors. There is an under-emphasis on the activities of UN organisations, the WTO, UNESCO, collecting societies, and RROs.

The main issue in software is between market domination and piracy. And on Open Source and Licensing it is important to note that GPL is still a copyright licence based on notions of exclusivity.

Indigenous knowledge and orally transmitted materials could begin to be covered by the TRIPS based IP system. Some of the case law, primarily from the Pacific region, relating to the use of copyright to protect indigenous knowledge could aid examination of sui generis protection systems.

Copyright has a positive effect on development, and more sustained licensing, tailored to the needs of developing countries, and further infrastructure and communications development is required. The discussant did not believe that copyright is one of the main barriers to distribution of knowledge.

Discussion

The report recommendations were criticised for the proposed overhaul of Copyright Laws and positive discrimination to Open Source software. The report's premise that there are "no credible economic models that project economic development for the developing countries" was not balanced.

There is growing evidence of direct correlation between strong IP protection and economic development for developing countries and reference was made to Edwin Mansfield's work on the willingness of multinationals to make direct investment. The OECD Report supports this view.

Multinational software companies understand that there should be balance between the public domain and copyrights protection. Bad decisions made now will cause all to suffer, particularly, the poor and developing countries.

The US focused perception of copyright protection, particularly of the software industry, ignores the global dimension despite the US companies involved being multinationals.

Large companies are better able, in the short term, to weather IP piracy. An Annual Report by Price Waterhouse Coopers addresses this issue, and finds that these industries create local jobs upstream, and downstream thorough their distribution and training services. They generate huge sales taxes, and increase productivity. The focus of the multinationals is the development of local industries to make a difference to the economic well being of these countries. The latest figures (1999) show 41,000 jobs, US$900 million tax revenues generated in these countries. The projection for 2004 is 72,000 jobs and US$1.7 billion in tax revenue, even though piracy occurs in those countries. Even a small reduction in piracy would make a huge difference.

Differential pricing has been recommended in the past. However, discounted price products immediately leak back to markets in the West. If companies could be assured that this would not be the case, then the paradigm would be acceptable.

Pricing is not the only issue. The main difference between proprietary software and freesource is the freedom to use, study, modify and redistribute. There is a common misunderstanding that free software means non-commercial software, but the terms of GPL (the Licence for the Free Software Foundation) protects the rights of the author. It does not allow use without having recourse to the terms the author wants. The software industry does help developing countries, and does create revenues. But these revenues are totally independent of whether the software is proprietary or free. It was suggested that proprietary software restricts access and lowers revenues.

Multinational companies do what the law allows them to do. Their actions are a natural consequence of the proprietary system. Local software systems based on the proprietary system, will create a local system dependant on it and the bundling of hardware and software.

Protection of software and other types of literary work should be separated. The books and software markets are different as the products have different features. Software could fit more neatly, into the patent model, as it is a functional tool. Although softer patents are being discussed in Europe, studies suggest that they are harmful and that the bigger companies have them because only they profit. Notice should be taken of the US situation where they are struggling to readjust from a reliance on softer patents.

India and Brazil are examples of the failure of PPP model to develop computing facilities, as private funding could be obtained. Parallels with the pharmaceutical industry suggest global funding should be used.

Fair use policies and open licensing for educational purposes are potential options. There is support for increase of fair use in academic works. The Appendix to the Stockholm Protocol refers to compulsory licenses, other than fair use, given under tight, stringent conditions. Discussion about fair use for educational materials reverts back to the discussion earlier, that if there is no promise that companies can recoup their investment, if there is no spill over from a particular market, then, these works will not be produced. In other words, there will be under investment in the creation of goods if there is no IP investment.

It was asserted that WIPO and UNESCO are unaware of any disgruntlement with the copyright treaties, from any of the developing country delegates invited to attend WIPO functions and training programmes.

Various open access providers are increasing the scope to provide materials for free to developing countries, but the chance of repealing Berne is small. The way forward is to work on the commercial psyche of shame and guilt, or to try to do something with the legislative system, perhaps to include “essential information” in the original language. Such “essential information” would include “information necessary for human development”. The problem is that information is incorrectly treated as a monolith within the same legislative framework.

IFFRO has functional difficulties. There are four different agreements operating on a flexible basis between IFFRO member societies regarding remuneration and licensing agreements. One problem with compulsory licenses is that only two countries, India and Thailand (and perhaps Egypt) signed, however, their memberships have not been reactivated. The framework for the design and administration of licence is Article 20 of the Berne Convention 1971. Whilst it is conceivable that the Appendix could be reopened and renegotiated, at an international level for variation, the political likelihood of this occurring is unknown. The political muscle of developing countries was shown in the enactment of the Appendix to the Berne Convention, but it has not been utilised.

The RRO model dramatically increases transaction costs. To provide course-packs for students, an author who has assigned copyright to the publishers,

then has to buy back, and sell to the students, his/her own work. It would seem unlikely that one could get royalties for photocopying African writers work in the USA, and that very little photocopying takes place in Africa. However, African music is being used quite widely so countries could earn royalties.

The Report was criticised for having a single viewpoint on the way publishers deal with the public. Highway Publishers offer 300,000 articles free to the world and include toll-free subscription. In Scientific and Medical Publishing publish over 60,000 of the most used articles. Not for profit publishers have started distributing at very low cost to the Third World. Reporting such evidence could show publishers that little or no costs are involved, thus persuading them to distribute freely to developing countries.

It was suggested that the flexibilities in Berne make the Appendix unnecessary, and no developing countries had brought copyright problems to the attention of the TRIPS Council. Both developing and developed countries were eager to come on board, such as Malawi, which is trying to bring its laws into line with TRIPS by 2006. The recommendation that copyright should be abolished for 20 years in developing countries would remove any incentive to produce their own indigenous work.

The international copyright system operates through Berne and WIPO, and this will not change, because these agreements operate by consensus. There is very little possibility for radical changes, but the Commission can work with the system, for gradual change, and one opportunity is the imminent European Copyright Directive.

The report highlights that even in developed countries, copyright has problems, thus raises concerns on its applicability of the TRIPS 'one-size-fits-all' regime to developing countries. However it was argued that the Berne Convention is ambiguously worded to allow consensus and flexibility, to enable governments to draft laws according to its own system and needs.

Authors have creative incentives other than payment, and Jessica Litman in "The Copyright Myth" states, most do not understand copyright law and do not necessarily benefit from copyright.

Session 2: Copyright and software

Are current international copyright rules and practices a significant constraint on access to computer software, and related Information Technologies, needed by poor countries? What is the evidence?

Is the length of copyright protection for software too long, given its sometimes short shelf life? Should there be differential software pricing between rich and poor country markets and/or encouragement of cheaper non-proprietary types of software?

Discussion

Is copyright protection relevant to relieving poverty in developing countries? Firstly, basic needs; clean drinking water, health infrastructure etc. have to be satisfied. But it was argued that access to technology and information was an essential element of sustainable development. The software industry has developed in some parts of Asia from piecemeal work out-sourced by the US to flourishing national industries.

In the absence of price discrimination, illegal copying is necessary, but a system which depends on an illegal action is not stable. The enforcement of software copyrights in developing countries will increase costs and thus reduce access to information. Price discrimination is a possible solution, though it may not concern IP. Multinationals are not fundamentally against differential pricing, a structure based on self-help rather than charity, but it was not thought to be the answer to the access problem.

Software development, like science, increases incrementally, but IP means that the first company to file will drive other companies out of the field, and stifle development. Distinctions must be made between operating systems, applications and the different models of research and development. Although developing countries may not prioritise access to computer programmes now, the new transition communication technology will be central to future development, and it is important to retain access right.

Recently, Open Source companies are having difficulties in generating profits, suggesting this is not a sustainable business model. It was contended that total cost of ownership for Open Source is higher than proprietary software, and the specific economics of the software industry make the dominance of the proprietary model inevitable. The proprietary software model has produced the most significant innovations, with businesses often building on university ideas in successful PPP arrangements, which would not work with Open Source and GPL. The GPL model will not help developing countries.

Proponents of Open Source argued that it is the proprietary companies that have not survived. In Europe, free software does have successes because they work with established business models. Studies on the Total Cost of Ownership (TCOs) suggest that TCOs are higher for free software, but these are reports that are sponsored by proprietary software competitors. Open Source software rates are lower. And if most innovations start at universities using public funds, the products should be used for the benefit of the public. The proprietary model has failed to produce technology transfer, it binds consumers to one company's technology, which is effectively legal subsidisation of multinational corporations. Government should favour a system which allows fair competition among companies and access to products by all.

Piracy is not always linked to organised crime. Piracy has been there since the beginning of copyright, but for a long time, because of the difficulties of copying, it has been a de facto problem only. But now, the development of copying technology requires a reassessment of copyright law.

Government may have a responsibility to provide equal time and access to information on both proprietary and open source software. But there are examples of open source and proprietary source providers supporting each other and the two systems working together in a way that maximises the benefit for the end user. It would be to the benefit of the developing countries to have the two systems working together.

Session 3: Copyright, education and research and the Internet

Will the use of "rights management systems", sui generis protection of databases, and techniques such as encryption deny developing countries the prospect of improved access via the Internet – including access for "fair use" – to material necessary for their development, (e.g. scientific journals, genomic information, meteorological and geophysical data, other educational material)?

Given that access to and use of both computers and the Internet is still relatively limited in a number of poorer countries and use of traditional "hard copy" materials remains critical for their educational programmes, what barriers do current copyright rules and practices with regard to "hard copy" materials create for poor countries in the attainment of their educational goals?

Discussion

Encryption may be outside the Berne and TRIPS Conventions. It has nothing to do with copyrights, only with company secrecy laws. There is no standard international law. The control of access at local and international levels is made on a political basis, and similar to digital rights management. The rhetoric about encryption has its roots in privacy, the right to strong encryption. But to support the private right of encryption, and public dissemination of information is a contradiction.

In most cases, there is no extra cost for student who uses it in a developing country. There is a new copyright rule which gives a blanket licence to cover all things, but this kind of scheme is outside any regulatory oversight, unlike hardcopy licensing fees which are regulated. There is a need to change the copyright designs act.

Will the market or state intervention lead to tiered pricing? Is the market model working? It was suggested that more pricing programmes are being initiated because it improves the public profiles of the companies concerned. It has been recognised that passwords and encryption technology are blocking potential paying customers, and there now are many legal journals from Humanities which allow rights of access to developing countries free or at reduced rates. Copyright Tribunals have made decisions that supported first, blanket licence, then course-packs and blanket licence, and have now moved back to blanket licence. UK Licensing Schemes are very complex, and are framed to extract as much as possible from the market place, and to reflect

market conditions. The Copyright Tribunal rule on prices, and so the market does prevail. But does the market works for poor countries?

Essential information has some form of legitimacy, but the line between essential information and privacy is blurred. Regulation may not be entirely satisfactory, but some regulation is needed. The Soros Foundation, MIT, and BOXM, are working on this issue. Should regulation be set in law or would it best be left to a voluntary mechanism, and who should decide?

The term “essential information” determines that there is “non-essential information” which is impossible to define and a dangerous concept (the term “essential information” is derived from the notion of “essential drugs”). But information is to be made available under the Stockholm Act, e.g. as it relates to educational needs. Also Human Rights Laws and Conventions help build a picture of what is essential information, and proffer an adequate definition. Essential information could mean ‘essential for human development’. Libraries should provide free access to users of information they hold, and to other libraries for other users. However they are part of the market model, and are consumers of copyright, and should respect copyright.

There was a need to draw a distinction between essential information and essential uses. Essential uses would be easier to define, for example locations such as universities are a natural site for educational access to the internet. A possible compromise could be the adoption of a site licence, one flat fee on an annual basis. Essential use is a modification of traditional fair use doctrine. Government funded research should be made available on the internet as essential information.

Attempts to regulate ECD and DMCA have been problematic because they do not define fair use. It is suggested that a global restriction should apply, but to which information? This is not possible under DMCA. Traditional fair use, such as passing on a book to a friend, becomes unfair use when it is done over the internet. Local laws should thoroughly explore what it will deem to be fair use.

However, others argued that much of the DMCA works well for the library system, and there are many inbuilt fair use provisions in the DMCA. As there is no general definition of fair dealing, cases are being dealt with on an individual basis, and countries should find their own solutions. Within the EU, it has been decided not to take developing countries to court.

The international system works reasonably well (no developing countries have yet complained to WIPO/EU), TRIPS Article 13 provides plenty of flexibility, and the debate about encryption is a red herring, because it is not a problem at the moment. It will only become one when all information is in electronic form. Hard copy will remain, but encrypted e-info will become a medium of choice in the future. The fear about encryption is that people are shut off from access to information. Encryption is purely technical, and has no morality. It is unclear whether one can input fair use into encryption, but as fair use is user specific not information specific, this is not possible. It is hard to imagine a

digital owner refusing to make their product available at some price, unless they have a monopoly on the market, and this is something that competition laws should address.

Toll-gating systems control access into a library. One possibility for redressing the balance would be through amending Unfair Contracts Terms Act as a way of reducing the power of multinational publishers. These publishers require that the authors give them the digitalisation rights over the work.

Encouraging fair use results in knowledge transfer and thus knowledge creation. Few other mechanisms seem possible within an IP regime. Millions of students have no possibility of acquiring books. The problem is how to ensure access to students in poor countries, in order to create more equal societies through education. The problem is access to the materials, not copying.

Final Session: Conclusions and key issues

Are changes needed to current copyright rules and practices? Are international rules on copyright unduly weighted towards the proprietors of copyright? Is the length of copyright protection provided too long? Might lower and/or more targeted levels of copyright protection help to address the extent of illegal copying, recognising that this practice has some benefit for consumers and local producers at the expense of copyright holders?

If copyright is potentially an “engine of development”, to what extent are poor people and poor countries reaping the economic, social and cultural benefits from copyright protection of their own indigenous materials? What are the main obstacles and how important is the level of copyright protection compared to other factors? Is there more that could be done to help?

Discussion
In 1960, many newly independent countries of Africa had to deal with the Copyright Convention. As they were part of the British Empire, they were part of the Berne Convention. African countries have come to realise European copyright models not appropriate for them. In 1963, at the Brazzaville-Congo meeting, changes were proposed, but not accepted, and the UK’s attitude to the proposed changes was hostile. The Stockholm Protocol term ‘educational purposes’ and the Paris wording have reduced the flexibilities in Berne. Why more countries have not signed up to the Appendix to Berne is not known. Action is required as the situation 29 years ago was very different from now both in terms of technology and rights-holders.

The proposal that the Commission suggest changes to Berne, TRIPS and other international agreements was considered, and it was suggested that the system should not be too strictly enforced, and the good and bad practice of companies be made public. Perhaps could be broadened to include work being done for information of a higher or lower quality. It would be a type of kite-marking. For a government to measure business according to these

criteria would be controversial. But there would be a market for that kind of information within organisations such as OXFAM. An example of a successful scheme would be OXFAM's green rating, or http://www.scidev.net/ which makes information available on the net to LDCs.

Recommendations and projects (eg Senegal) regarding copyright and TK were questioned on grounds of funding, economic reform and whether a system-oriented approach could help in this context. It was stated that holders of TK viewed knowledge in custodial transmission as to whether there was interest in keeping knowledge secret or in divulging knowledge. Is IP the best method for protecting TK? Most developing countries believe there is a need for sui generis protection in traditional knowledge terms, including protection for unauthorised use, access and appropriation. However, it is principally a non-economic interest that traditional folk have at present in their TK. Copyright is not the appropriate form to protect all forms of TK.

Folklore is periferal due to the eventual failure of provisions developed by WIPO. No African nation has implemented the provision, but it is believed that the provision would not really work. Folklore does not really fit into the formal legislative models which exist. WIPO has stated that documentation is essential, but lack of documentation should not destroy the ability of indigenous community to seek these rights.

Clarification of the criteria for protection of TK was provided; one must prove that it is traditional, distinctive and preserved. The problem with sui generis rights is there is no guarantee that it will be accorded protection outside the country, and it is difficult to define traditional. Also there is the problem of loss of perpetual protection due to loss of distinctiveness, for example, the Keinte Cloth of Ghana has been copied so much over time that it has lost its distinctiveness.

Tour de Table on Key Themes and Issues for the Commission

- Examine the terms of IP license agreements – revisiting the UNCTAD model on licensing agreements for technology transfer may be a good starting point.

- Explore Berne Appendix 1 in terms of rights/exception to access to essential information for human development.

- Take note of the number of "open access" initiatives of all kinds which have arisen recently amongst publishers and copyright holders in favour of developing countries

- Explore potential for, and constraints, to differential pricing for proprietary software and consider whether proprietary software would be less expensive for developing countries

- But bear in mind the other non-IP factors in the digital divide in developing countries.

- Consider merits of public education campaigns on open-source (non-proprietary software) for developing countries.

- Emphasize changes in practice rather than national or international IP law and treaties (e.g. good practice on access initiatives for developing countries or on fair-use in encryption technologies for digital rights management). “Burning Berne” is not an option. One means of doing this would be a “best practice and naming and shaming” type permanent international body or NGO to oversee practice by copyright holders (companies and countries).

- Build coalition/common cause for more public debate on copyright and development related issues. Consideration of how to achieve greater democratisation of copyright regimes and rule making: how to overcome “regulatory capture” of policy makers and policy institutions on copyright policy and get them listening more to needs of poor people.

- Look at MPEG21- development of a standard for identification and description of content rights and rights owners. Consider whether if MPEG-21 is successful, it could facilitate the documentation of traditional knowledge formations in digital form that could be extremely helpful to indigenous groups and other custodians of TK in both exercising IPRs, and preventing others from doing so where appropriate.

- Put a strong emphasis on capacity building in terms of public education and public information in developing countries as a counter-balance to the decrease in access which stronger copyright protection leads to in poor countries (eg more resources for public libraries in LDCs).

- Think creatively about developing exceptions to copyright restrictions in international rules for LDCs (over the longer term).

- Bear in mind that, despite the growth of the Internet, hard copy materials are likely to remain the most important modality of accessing information in developing countries and LDCs.

- Regarding software and copyright rules (e.g. DMCA in the US), these increasingly reflect the interests of (proprietary) software producers and copyright holders. But within the system of rules, Commission should insist that policy/law makers are careful to ensure there is enough room for initiatives like open source software.

- Free software should be recommended for developing countries, it has a number of benefits as outlined in Story paper (e.g. access to

programming code, encourages development of local IT programming skills). On the other hand, its not an “either or equation” in terms of open source versus proprietary software, and indeed it could be counter-productive to encourage developing countries to see it in this way. The two models can productively co-exist.

- Primacy should be given to private initiatives and market based solutions/reforms. Equally, in cases where there is market failure, priority should be given to tackling the root causes of market failure.

- We should constantly bear in mind that, from a welfare perspective, information is a public good, strongly linked to issues of public interest. While copyright protection is necessary, it should extend only as far as necessary and be very carefully measured against the nature of the information content as a public good.

- A specific example of the above, in the field of software, would be the regime towards reproduction and use of software programming code: too strict a regime here could inhibit local IT industries in developing countries and may not be necessary to protect the core business interests of existing software producers/copyright owners.

- Implementation of TRIPS Article 66.2 and Article 67 should be approached by developed countries within a paradigm of generosity rather than a narrow legalistic interpretation of what is the minimum required.

- Regarding copyright and software, Commission should concentrate on maximizing fair-use and areas where LDCs need exceptions in order to access and integrate with the global economy, rather than unpicking the exiting copyright regime wholesale in LDCs.

- Public policy makers in all countries should realize the fact that the “knowledge gap” between rich and poor countries is increasing and needs to be checked by policy instruments and funding initiatives (e.g. more resources for public libraries and internet access in poor countries would be one specific intervention).

- At the same time, the Commission should recognize and encourage the potential role of private philanthropy (e.g. the Bill and Melinda Gates Foundation).