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MAY 2004

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TRIPS and Development

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Published by Sida 2004
Department for Infrastructure and Economic Cooperation
Author: Keith E. Maskus
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Printed by Edita Sverige AB, 2004
Art. no.: SIDA3820en
This publication can be downloaded/ordered from www.sida.se/publications

TRIPS and Development[1]

Summary

This paper overviews essential relationships among intellectual property rights (IPRs), international trade, and economic development. The initial section discusses the main features of the WTO Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), noting the primary issues facing developing countries in undertaking and enforcing their legal reforms. Of particular interest are questions concerning TRIPS and public health, protection for agricultural technologies, and prospects for using geographical indications for developing value-added products in goods, crafts and similar products.

The TRIPS Agreement requires the establishment of minimum standards of protection. Such protection has three objectives: inducing more innovation, improving channels for technology transfer and acquisition, and building markets for technology and high-value products. The second section reviews these objectives and the likelihood of their being achieved at various levels of development. It also discusses the importance of surrounding IPRs with general policies that encourage competition and skill development. A final section offers suggestions for modifying or extending TRIPS in ways that are friendlier to development prospects and also for development agencies intending to assist developing countries in their implementation processes.

I. What are Trade-Related Intellectual Property Rights?

Intellectual property rights (IPRs) are exclusive rights awarded by governments to an inventor or creator of new information for the use of that information. IPRs — patents, copyrights, various forms of trademarks, geographical indications, and plant variety rights — typically include rights to produce, use, sell, license, and import the information itself and any products that are generated by the information. For public policy reasons these rights typically are limited in scope (the extent of what is protected or actions that may be taken) and duration.

By tradition, IPRs are national and rights pertain only within the territory for which they have been awarded. Thus, the nature, scope, and effectiveness of IPRs vary considerably across countries. This is hardly surprising, for the

[1] This note was written by Keith Maskus, March 2004.

economic and social interests of countries can be quite different. Technologically advanced countries have interests in strong protection for technology developers in order to reward their investment efforts. In contrast, poor countries prefer weak protection in order to promote widespread and inexpensive access to technologies and products (Maskus, 2000a).

Because IPRs vary considerably across countries, they are a determinant of the pattern of international trade and international technology transfer. In this sense, IPRs are directly "trade related". Empirical research is consistent with the view that weak IPRs in developing and transition economies reduce trade and foreign direct investment.

TRIPS

The Uruguay Round was the most recently completed (in 1994) round of multilateral trade negotiations and established the WTO. During those negotiations the phrase "trade-related intellectual property rights" came to mean variations in all forms of IPRs. The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) became one of the main pillars of the WTO. All member countries were required to adopt at least the minimum standards set out in TRIPS, while newly acceding members must do so as well. A full discussion of the complexities of these standards would overburden this report, so I simply overview the main requirements that are of central concern for developing countries.[1] Annex 1 offers a full list of required standards.

For most developing countries the most significant changes arise in the area of patents. The minimum patent length must be 20 years from date of filing an application. Patents must offer a right of importation, suggesting that a patent may be exercised through imports and that "working requirements" under which patented goods must be produced locally are no longer tenable.[2] Product patents must be protected in pharmaceuticals and foodstuffs, areas in which many countries had restricted patentability. Patents also must be rewarded for biotechnological inventions, though countries need not patent higher-order (multi-cellular) life forms, nor must they patent traditional methods of reproduction and breeding. Governments may use patented technologies or issue compulsory licenses on behalf of local firms but must meet a series of conditions for doing so. These conditions have raised an important and contentious issue in the area of patented pharmaceuticals as discussed in Box 1.

[1] This point is made also by Commission on Intellectual Property Rights (2002, pp. 21–22).

[2] See the discussion in Commission on Intellectual Property Rights (2002, pp. 21–22).

Box 1. TRIPS and Public Health

TRIPS requires all WTO members to provide patents for new medicines if their developers apply for protection and meet eligibility standards. Patents would cover "essential medicines" or drugs that treat endemic diseases in poor countries, including HIV/AIDS, malaria, and tuberculosis, in addition to medicines for other common inflictions. There is considerable concern among public-health authorities that the implementation of patent protection will significantly raise the costs of medical treatment in poor countries. One potential remedy is that governments are permitted under TRIPS to issue compulsory licenses, or orders that a patent holder surrender his technology to a local firm, under a list of conditions set out in Article 31. These conditions relate to the behavior of the patent holder, the need for a domestic supply capacity to deal with health problems, and licensing terms. One restriction is that a compulsory license may only be issued for production that will be undertaken "predominantly for the domestic market". This condition raised a clear obstacle to countries with no domestic production capacity in attempting to issue compulsory licenses.This problem was recognized in Paragraph 6 of the 2001 Doha Declaration on Public Health, which instructed WTO members to find a solution. After a long period of contentious negotiations, on August 30, 2003 an agreement was reached that would permit poor countries to notify the TRIPS Council of their intention to import drugs under a compulsory license. The agreement, which is a temporary waiver from Article 31, sets out important conditions for such licenses to work: a generic drug producer in an exporting nation must produce under contract solely for the importer, there must be compensation paid to the patent holder, and there must be strong provisions in place to prevent the re-exportation of medicines from the recipient nations. In effect, this agreement offers poor nations without production capacity access to compulsory licenses, which are an element of all major countries' public health legislation. It remains to be seen whether the agreement is sufficiently flexible to attract much use. Because the agreement is a temporary waiver, ongoing negotiations aim to decide whether to make it permanent or to find some other long-lasting solution. For their part, the poorest developing nations must decide whether to encourage the establishment of domestic production facilities for essential medicines.

For those members choosing not to patent breeding methods, protection must be provided through an effective *sui generis* system of plant variety rights. These are patent-like exclusive rights but are narrower in scope and have somewhat less rigorous standards of eligibility.

In copyrights, members must provide exclusive rights to make or license copies and derivative works for at least 50 years from the date of creation. Databases and computer programs are to be protected with copyrights, though there is no obligation to patent software. TRIPS clarifies obligations for providing various neighboring rights (eg, to performers and broadcasters) and rental rights.

In trademarks, two significant obligations are set forward for developing countries. Protection must be provided for well-known trademarks and countries cannot invalidate marks for non-use if the failure to use arises from other restrictions, such as trade barriers. TRIPS also sets out obligations in protecting geographical indications (GIs), or marks attached to goods attesting to their location of production. First, countries must permit parties to prevent the identification or presentation of a good that would mislead consum-

ers as to its true geographical origin. Second, there is a higher level of protection for wines and spirits, including mandated negotiations concerning the establishment of a multilateral system of notification and registration of GIs in those Members choosing to participate. Some observers wonder why this additional protection should not be available for other products. Thus, ongoing discussions in the TRIPS Council aim at determining whether to extend GI protection to food products and similar goods.

The TRIPS agreement sets out extensive language on the protection of undisclosed information, or trade secrets. Trade secrets are protected by laws defining unfair competition. TRIPS permits much national discretion regarding the definition of permissible reverse engineering, or inspection of a good or technology in order to produce a competing version. Reverse engineering is a major form of learning and diffusing technologies in developing economies. Governments must also protect confidential test data from unfair commercial use.[3]

TRIPS offers considerable latitude for countries to use competition policies to offset anti-competitive uses of intellectual property rights. Thus, for example, abusive licensing restrictions may be remedied through competition policy. Note that competition policies remain limited or absent in most developing countries, making this an area in need of considerable reform and attention. One important form of competition policy is the exhaustion doctrine, which specifies the point in the distribution chain at which an IPR holder no longer can prevent re-sale of the good. In general, developing countries may wish to establish international exhaustion of IPRs, thereby remaining open to parallel imports. Article 6 of TRIPS recognizes the right of each member to set its own exhaustion regime.

The agreement sets out requirements for enforcement procedures, including civil, criminal, and border measures. No special judiciary is required for enforcing IP cases, though many countries may need to establish one in view of their complexity. In light of scarce resources and the expense of enforcement, it is certain that many poor countries will be unable to devote sufficient resources to reduce infringement markedly.

Finally, there are transition periods and institutional arrangements in TRIPS. These transition periods are nearly completed, with the exception that the Doha Declaration on Public Health permits least-developed countries not to enforce patents and exclusive marketing rights in pharmaceuticals until the year 2016.

II. Why is TRIPS Important from a Development Perspective?

The TRIPS agreement could have profound implications for development prospects. These implications could be positive or negative, with the balance depending on characteristics of each country. Governments can work to maximize the potential long-run gains (or minimize the losses) from IPRs by embedding their regimes within a comprehen-

[3] World Bank (2001) provides recommendations in this regard for nations at varying levels of development. See also Commission for Intellectual Property Rights (2002).

sive set of complementary policies. These issues are complex and can only be summarized here.[4]

Development Objectives

IPRs attempt to resolve the conflict between the short-term need for access of consumers and users to new information and the long-term need for innovation, artistic creation, and economic growth. In general they do this by providing temporary and limited exclusive rights to exploit the economic value in new inventions and creations. The exclusive rights are presumed to generate sufficient returns to encourage firms to invest in costly R&D projects. In turn, society benefits from the introduction of new goods and the disclosure of technological information. IPRs also support markets for trading technologies.

Thus, IPRs have three separate direct objectives: innovation, diffusion, and extension of markets. In the following paragraphs I explain how these effects may arise. However, the benefits they envision may not be fully realized in all countries, especially because such benefits depend on the level of economic development, complementary economic and social factors, and other variables. Thus, I also overview empirical evidence on such circumstances and provide brief observations about policy coordination.

Innovation

Patent protection is unlikely to induce significantly more innovation in lower-income developing economies until they develop considerable local technological capacities.[5] This observation is consistent with historical evidence discussed in Lerner (2002), who found that in 177 cases of marked strengthening of patent regimes there were few cases where local firms significantly increased their patenting rates. Contrasting evidence comes from Kanwar and Evenson (2001), who found a significantly positive correlation between a national patent index and R&D investment over the years 1981–1990. However, their sample included relatively few poor nations. The preponderance of evidence, therefore, finds little evidence that patents are significant inducements to innovation in developing countries.

However, other forms of IPRs could be important for innovation in the development process.[6] For example, the post-war Japanese patent system encouraged incremental innovation and licensing through narrow patent scope and utility models, which are short-term patents for small inventions. Evidence points also to the benefits for local innovation and learning of utility models in Brazil and Thailand. Further, in its "catch-up" period Korean policy encouraged local firms to license mature technologies and offered thin property rights to follow-on innovation (Kim, 2002). After a significant strengthening of the country's patent regime in the late 1980s and early 1990s, major Korean firms have become centers of innovation and foreign patenting.

Even poor developing countries can benefit from local innovation in product varieties and brand names in the presence of protected

[4] This moderate suggestion is consistent with some of the "TRIPS-Minus" proposals from CIPR (2002).

[5] See Commission for Intellectual Property Rights (2002) and Okediji (2003).

[6] See the discussion in Commission on Intellectual Property Rights (2002, pp. 21-22).

trademarks. Surveys suggest that there is considerable scope for innovation in food products, textile designs, simple machinery, and related goods (Maskus, 2000a). Weak trademarks are under certain circumstances a significant disincentive to investing in new firms and building export markets. Similar comments apply to geographical indications in countries with scope for building reputation assets in foodstuffs and beverages, as discussed in Box 2.

Box 2. Geographical Indications (GIs)

GIs are defined in the TRIPS Agreement to be "…indications which identify a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin." These indications may be place names (eg, Parma Ham), words, or symbols. They may be used to identify the reputation of products, such as textile designs, with a location in addition to their more common usage in wines and food products. Protection for GIs within TRIPS is defined in stages. The most general obligation is that countries must permit interested parties to prevent the identification of a good that would mislead consumers as to its true geographical origin. WTO Members also must provide for refusal or invalidation of trademarks containing misleading geographical indications. These general requirements must be afforded any product for which GI protection might be sought. TRIPS calls for a higher level of protection for GIs for wines and spirits. WTO Members must prevent the use of GIs identifying wines and spirits that do not originate in the place indicated even where the true place of origin is listed or the indication is accompanied by such expressions as "kind" or "imitation". Further, it mandates negotiations concerning the establishment of a multilateral system of notification and registration of GIs for wines eligible for protection in those Members choosing to participate in the registration system. These negotiations continue. It should be noted that countries need not protect names that have been declared generic in their law. A number of developing countries believe there is considerable scope for benefiting from extending this higher-level protection to such items as agricultural produce (eg, Basmati rice), food products (eg, specialized oils) and textile and clothing designs. Indeed, some observers see GIs as a component for developing protection of such traditional knowledge as herbal formulations (Dutfield, 2000). Thus, several key countries have argued at the WTO for expanding protection widely. While it surely would be difficult to sort out collective ownership of place names when, for example, several villages produce similar textile designs, it is likely that GIs offer real scope for adding value and creating market niches for products of many developing countries.

Protection of trade secrets can also be important for domestic innovation in developing countries. Reverse engineering is an important form of learning and diffusing new technologies. Thus, developing countries could encourage local innovation through fairly limited patent standards and a broad scope for reverse engineering, so long as these rules are consistent with TRIPS.

Copyrights may induce local creative activity because they provide a mechanism for allocating exclusive rights across several players in a complex marketing regime (Caves, 2000; Maskus, 2000b). In many developing countries the number of firms engaged in creative activity is remarkably small in relation to the apparent abundance of artists. One reason is that copyrights and

collection societies are often too weak to encourage establishment of local recording facilities and publishing outlets. In this regard, copyrights can be important for sorting out appropriate incentives for investing in creative abilities. In contrast, the role of copyrights in encouraging software development is mixed in developing countries (Maskus, 2000b).

Finally, there is not much evidence that plant variety rights (PVRs) encourage private investments in agricultural technologies in poor countries. There is some suggestion that marketing incentives are improved in larger economies, such as Argentina (Maskus, 2000a). Perhaps the most appropriate conclusion is that poor countries should establish PVRs that encourage experimentation and preserve farmers' replanting privileges, while supporting exclusive rights in original technologies. Public research and extension services are also important in supporting local agricultural development.

International Technology Transfer

The framers of TRIPS saw IPRs as means for encouraging both innovation and the movement of information across borders. Indeed, there is a positive obligation in Article 66.2 on the developed countries to encourage flows of international technology transfer to the least-developed countries.

For most developing nations the main source of new information remains imports of technology from R&D-intensive industrial economies. There are several channels of international technology transfer (ITT). These include both market-based transactions (imports of capital goods and technological inputs; inward foreign direct investment; technology licensing; and joint ventures) and non-market transactions (reading patent applications; reverse engineering and imitation; and international labor mobility). These flows can also support spillovers of technical information into wider consumption and competition, an important source of gains from inward technology.

IPRs can play a number of positive roles in encouraging ITT to developing countries. First, multinational enterprises are more likely to transfer advanced technologies to production and research facilities in locations where the proprietary information can be protected. Second, technology developers may be more willing to engage in licensing with unrelated partners in economies with effective IP protection. Third, local firms may be in a better position to adapt incoming technologies to domestic needs if IPRs encourage such adaptation.

Despite these gains, there is uncertainty about whether stronger IPRs will increase ITT flows to developing countries. Much depends on the circumstances of technologies, industries, countries, and competitive structures. Indeed, it is possible for such flows to be hindered through restrictive licensing terms. The main point, however, is that the various claims require empirical study. Following is a summary of research results.

First, there is strong evidence that patent applications serve as a conduit for learning among OECD economies (Eaton and Kortum, 1996). Thus, "trade in ideas" is a significant factor in world economic growth and patent protection should enhance such flows. Second, international trade

flows respond positively to increases in patent rights among middle-income and large developing countries (Smith, 2001). However, trade flows to poor countries are not responsive to patent rights. Third, evidence on patents and inward investment is mixed but recent studies find positive impacts among middle-income and large developing countries (Smith, 2001; Blyde and Acea, 2002). Again, poor countries do not attract investment on this basis and there are threshold effects at work. Finally, the sophistication of technologies transferred rises with the strength of domestic IP protection, but so also do the costs of paying for technical information (McCalman, 2001).

A reasonable conclusion is that the TRIPS agreement should generate significant flows of new technology to the middle-income and larger developing economies. These flows should knit those nations more tightly into the global markets for technological information. Unfortunately, there is little reason to believe that the poorer and smaller developing countries will experience higher inflows. This situation lends urgency to the need to implement effectively the obligations in Article 66.2.

Market Development

A related benefit of IPRs is that they support the development of formal technology markets by permitting licensors to reveal the nature of their technologies to potential licensees without fear of having that information stolen. IPRs also encourage the development of independent engineering firms that provide important specialized services in the transfer of technology (Arora, et al, 2001). A third factor is that weak IPRs tend to diminish the incentives of domestic firms to extend their marketing programs, both within national boundaries and across regional boundaries. In my view this is the most significant restraining factor for business development arising from limited intellectual property protection.

Further Costs

I now turn to a brief discussion of certain potential disadvantages for developing countries. Again, the severity of these potential costs depends considerably on such factors as levels of development, technological capacities, market competition, effective governance, and other factors.

Many developing countries will face significant costs of implementing and administering the TRIPS requirements. In terms of *administration*, virtually all countries have industrial property offices. However, these offices may be chronically understaffed and have insufficient access to computerized databases. It is possible for such offices to cover their own costs through registration and renewal fees but it is poor public policy to set such fees in order to maximize agency revenues. Development goals would be better served if they were set to encourage local innovation and push technologies onto the public domain quickly. In terms of *enforcement* there are extensive needs to train IP lawyers, judges, police, and customs officials in order to detect and reduce infringing activity. Taken together, administration and enforcement costs in IPRs may be significant. For example, the Commission on Intellectual Property Rights (2002) surveys cost estimates showing that minimum expenditures for a medium-sized developing economy

may be approximately $1.1 million to $2 million per year. Many poor countries might consider these sums to be better spent on other development needs, implying that effective compliance with TRIPS could be well in the future.

There are additional potential economic costs from TRIPS. First, there will be adjustment costs as workers currently employed in counterfeiting activities are displaced. Second, IPRs can support market power and higher prices on new goods and technologies. This could be especially problematic in pharmaceuticals and new seeds. Third, technology suppliers might use their stronger rights to engage in anti-competitive licensing restrictions. In this regard, it will be important for developing countries to ensure that regulation of IPRs for social purposes is transparent and effective, that domestic markets are dynamic and competitive, and that competition policies are capable of dealing with abuses.

Reforming TRIPS for Development Purposes

It is important to discuss ways in which the TRIPS agreement might be changed to improve prospects for economic development. This is another highly complex question and I simply summarize recommendations.

First, policymakers in developing countries would be advised to avail themselves of the flexibilities provided by TRIPS in limiting the scope of IPRs for purposes of encouraging dynamic competition, innovation, and diffusion of new technologies.[7] Among such flexibilities are rigorous standards for patentability, a research exemption in patents and PVRs, compulsory licenses, scope for reverse engineering, and fair-use provisions that permit access to copyrighted goods for educational and scientific purposes. Next, countries need to establish effective competition policies. Finally, developing countries cannot expect to improve growth prospects simply by strengthening their IP regimes. Rather, IPRs need to be embedded in wider development policies, including human capital programs, support for science and innovation, and improvements in internet and telecommunications access (Maskus, 2000a).

Turning to the TRIPS agreement itself, the following recommendations may support a pro-development shift in its emphasis.

- The poorest countries are unlikely to administer and enforce the required TRIPS standards effectively for some time to come. It would be beneficial to increase financial and technical assistance for improving administration capacities. One promising idea would be for WTO and WIPO members to agree that a small additional levy would be assessed on patent applications at the Patent Cooperation Treaty (PCT), and perhaps also on multilateral trademark applications, for purposes of financing administration efforts in the poorest countries.
- A related suggestion would be for an extension of the TRIPS moratorium on non-violation complaints on behalf of the poorest WTO members.

[7] World Bank (2001) provides recommendations in this regard for nations at varying levels of development. See also Commission for Intellectual Property Rights (2002).

Indeed, as a form of "special and differential treatment" such complaints might be rejected by the TRIPS Council unless the complainant could verify that it had made sufficient efforts to improve enforcement capacities in the defendant country. While this proposal would require a negotiated agreement that would effectively diminish the rigor of TRIPS enforcement requirements, in my view it would reflect economic reality and provide needed breathing room for developing capacity.[8]

- Members could clarify that the rules in TRIPS permit national establishment of a research exemption to patent use rights and PVRs.
- The waiver agreement reached on August 30 of 2003 to permit exports of generic drugs developed under compulsory licenses to poor countries with inadequate domestic production capacity in medicines should be made a permanent part of TRIPS.
- It is premature to negotiate stronger patent eligibility requirements in life forms (Article 27.3) and that language could be clarified to make such patent requirements a matter of national policy.
- TRIPS could be clarified as to the minimum requirements for plant variety rights. Poor agricultural economies need to maintain a farmer's privilege without significantly reducing the benefits to the original right holder.
- There is scope for increasing protection for GIs in order to provide incentives for developing and marketing regionally based goods. Care must be established in permitting countries some flexibility in defining such rights on their markets in order to avoid restricting the public domain in existing generic terms.
- The technology-transfer provisions in Article 66.2 need to be implemented. Thus, the TRIPS council could be provided a significant role for monitoring and publicizing successful forms of technology transfer, while the beneficiary nations need to be expanded beyond the LDCs (Hoekman, et al 2003). Developed countries could agree to offer fiscal incentives for ITT that are consistent with those provided for location in disadvantaged regions in their own economies. Fiscal incentives could also be offered for applied R&D activities in developing countries.
- More attention could be paid to establishing sufficient market segmentation in certain goods (medicines, environmental technologies, education materials, and the like) that providers would be willing to offer steep discounts to authorities and consumers in poor countries. Thus, some re-visitation of Article 6 (exhaustion) could be beneficial, along with linking it to competition issues and technology transfer.
- There are no international norms on the scope of fair use in copyright, an increasingly important issue in the internet age. Widespread access of students and researchers to

[8] This moderate suggestion is consistent with some of the "TRIPS-Minus" proposals from CIPR (2002).

digital products is important but unimpeded electronic copying harms interests of copyright owners. The WIPO Copyright Treaty attempts to balance these concerns by requiring signatories to provide legal remedies against the circumvention of technological protection measures, while recognizing the need for fair use. It would be beneficial for TRIPS to be made more explicit about allowable scope for fair use in digital works.[9]

- Finally, attention should be paid to overcoming the inconsistencies between TRIPS and the Convention on Biodiversity. The former agreement recognizes only private rights in technologies and products developed from genetic resources, while the latter recognizes the interests of states in sharing benefits from such inventions. International benchmarks in this regard would be informative for implementing policies for protecting genetic resources.

III. The Role of Trade-Related Technical Assistance and Capacity Building

A final issue is to discuss ways in which a donor agency could assist developing countries in implementing TRIPS and to identify priority areas.

- To the extent a donor agency is involved in advising about legislative and regulatory changes, that advice could pay close attention to the various flexibilities offered by TRIPS, as discussed above.
- Donor agencies might be able to leverage their efforts by encouraging regional initiatives among developing countries on patent standards, scope limitations, and the like.
- It would be beneficial to clarify for developing countries that certain forms of IPRs are more likely than others to promote domestic competition and priority might be placed on developing competence in these areas. Such IPRs include trademarks, geographical indications, limited but transparent rules on trade secrecy, utility models, industrial designs, and copyrights seasoned with fair use provisions.
- A specific suggestion is that donor agencies could publicize the existence and use in developed countries of research exemptions in patents and PVRs. It is important to describe the scope of these exemptions and their effects on science, education, and competition.
- Financial assistance is important for encouraging effective administration and enforcement. While some of these costs might be captured by patent and trademark fees, international assistance is also needed. As noted above, it also would be useful to establish an international funding mechanism, such as a fee on applications through the Patent Cooperation Treaty.
- Technical assistance could be most valuable for encouraging the development of competition regimes. Effective competition policies are complicated and expensive, requiring extensive

[9] See Commission for Intellectual Property Rights (2002) and Okediji (2003).

training in legal and economic expertise. In this regard, donor agencies could facilitate efforts by international experts to assist in developing national and regional policies. There is also scope for competition authorities in developed countries to undertake actions on behalf of poor countries in the case of IPR abuses (Hoekman, et al 2003). Thus, donor agencies might coordinate with competition ministries in their own economies for this purpose.

– Perhaps most importantly, the message must be carried that IPRs need to be supplemented by broader development policies. Donor agencies could provide a valuable service by encouraging coordination among health, education, agriculture, technology, and industry ministries in developing a comprehensive approach to improving the acquisition, use, and development of technological information.

References

Arora, A., A. Fosfuri, and A. Gambardella (2001), *Markets for Technology: The Economics of Innovation and Corporate Strategy*, MIT Press, Cambridge.

Blyde, Juan S. and Cristina Acea (2002), "The Effects of Intellectual Property Rights on Trade and FDI in Latin America," InterAmerican Development Bank, manuscript.

Caves, Richard E. (2000), *Creative Industries: Contracts between Art and Commerce,* Harvard University Press, Cambridge.

Commission for Intellectual Property Rights (2002), *Integrating Intellectual Property Rights and Development Policy,* CIPR, London.

Correa, Carlos M. (2003), "Can the TRIPS Agreement Foster Technology Transfer to Developing Countries?" Duke University, manuscript.

Eaton, Jonathan and Samuel Kortum (1996), "Trade in Ideas: Patenting and Productivity in the OECD," *Journal of International Economics* 40, pp. 251–278.

Hoekman, Bernard, Keith E. Maskus, and Kamal Saggi (2003), "Technology Transfer to Developing Countries: Unilateral and Multilateral Policy Options," World Bank, manuscript.

Kanwar, Sunil, and Robert E. Evenson (2001), "Does Intellectual Property Protection Spur Technological Change?" Yale University, Economic Growth Center Discussion Paper number 831.

Kim, Linsu (2002), "Technology Transfer and Intellectual Property rights: Lessons from Korea's Experience," UNCTAD/ICTSD working paper.

Lerner, Josh (2002), "Patent Protection and Innovation over 150 Years," NBER Working paper number 8977.

Maskus, Keith E. (2000a), *Intellectual Property Rights in the Global Economy,* Institute for International Economics, Washington, DC.

Maskus, Keith E. (2000b), "Strengthening Intellectual Property Rights in Lebanon," in Bernard Hoekman and Jamal Zarrouk, editors, *Catching Up with the Competition*, University of Michigan Press, Ann Arbor.

Maskus, Keith E. and Christine McDaniel (1999), "Impacts of the Japanese Patent System on Productivity Growth," *Japan and the World Economy* 11, pp. 557–74.

McCalman, Phillip (2001), "Reaping What You Sow: An Empirical Analysis of International Patent Harmonization," *Journal of International Economics* 55, pp. 161–186.

Okediji, Ruth (2003), "Developments in the Information Age: Issues in the Regulation of Intellectual Property Rights, Computer Software and Electronic Commerce," manuscript for ICTSD/UNCTAD.

Primo Braga, Carlos (1996), "Trade-Related Intellectual Property Issues: The Uruguay Round Agreement and Its Economic Implications," in Will Martin and L. Alan Winters, editors, *The Uruguay Round and Developing Countries,* Cambridge University Press, Cambridge.

Saggi, Kamal (2003), "International Technology Transfer: National Policies, International Negotiations, and Multilateral Disciplines," report for Commonwealth Secretariat.

Smith, Pamela J. (2001), "How Do Foreign Patent Rights Affect U.S. Exports, Affiliate Sales, and Licenses?" *Journal of International Economics* 55, pp. 411–440.

United Nations Conference on Trade and Development (1996), *The TRIPS Agreement and Developing Countries,* UNCTAD, Geneva.

Watal, Jayashree (2001), *Intellectual Property Rights in the WTO and Developing Countries*, Kluwer Law International, The Hague.

World Bank (2001), "Intellectual Property: Balancing Incentives with Competitive Access," Chapter 5 in *Global Economic Prospects and the Developing Countries 2002: Making Trade Work for the World's Poor,* The World Bank, Washington DC.

Annex 1.

Substantive Requirements of the TRIPS Agreement in the WTO

Objectives	*Comments*
• Technology innovation and diffusion	Obligation for technology transfer
• Balance of rights and obligations	Producers and users should gain
• Recognize multiple national goals	Maximum flexibility for LDCs
General Obligations	
• National Treatment	Applied for persons
• Most-Favored-Nation	Reciprocity exemptions for copyright; prior regionals/bilaterals allowed
• Transparency	
Copyright and Related Rights	
• Observes Berne Convention	Does not require moral rights
• Minimum 50-year term	Clarifies corporate copyrights
• Programs protected as literary works	A significant change in global norms
• Data compilations protected similarly	
• Neighboring rights protection for phonogram producers, performers	
• Rental Rights	A significant change in global norms
Trademarks and Related Marks	
• Confirms and clarifies Paris Convention	
• Strengthens protection of well-known marks	Deters use of confusing marks and speculative registration
• Clarifies non-use	Deters use of collateral restrictions to invalidate marks
• Prohibits compulsory licensing	
Geographical Indications	
• Additional protection for wines and spirits	
Patents	
• Subject matter coverage	Patents provided for products and processes in all fields of technology
• Biotechnology	Must be covered but exceptions allowed for plants and animals of traditional methods
• Exclusive right of importation	
• Severe restrictions on compulsory licenses	Domestic production can no longer be required; non-exclusive licenses with adequate compensation
• Minimum 20 years patent length from filing date	
• Reversal of burden of proof in process patents	
• Industrial Designs	Minimum term of 10 years

Plant Breeders' Rights	
• Patents or effective *sui generis* system required	
Integrated Circuits Designs	
• Protection extended to articles incorporating infringed design	Significant change in global norms
• Minimum 10 years protection	
Undisclosed Information	
• Trade secrets protected against unfair methods of disclosure	New in many developing countries
• Confidential test data kept secure	Contentious non-disclosure period
Abuse of IPRs	
• Wide latitude for competition policy to control competitive abuses	Cannot contradict remainder of WTO agreement
• Countries may pursue own exhaustion policies	
Enforcement Measures	
• Requires civil, criminal measures and border enforcement	Will be costly for developing countries
Transitional Arrangements	
• Transition periods	5 years for developing and transition economies; 11 for poorest countries
• Exclusive marketing rights for pharmaceuticals	
Institutional Arrangements	
• TRIPs Council	Agreement to be monitored and reviewed
• Dispute settlement	Standard approach with non-violation moratorium

Halving poverty by 2015 is one of the greatest challenges of our time, requiring cooperation and sustainability. The partner countries are responsible for their own development. Sida provides resources and develops knowledge and expertise, making the world a richer place.

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