THIRD WORLD NETWORK's COMMENTS ON THE "REPORT ON THE INTERNATIONAL PATENT SYSTEM" (SCP/12/3 Rev.)

General Comment

From the WIPO Patent report, it seems that the push for an international patent system is premised, broadly on the following (1) that the patent system is the only credible incentive model that fosters innovation; (2) that the patent system facilitates technology development and diffusion and investment flows and an international patent system would further facilitate technology transfer and investment; (3) that patent offices are unable to deal with the demands of search and examination, resulting in a severe backlog and affecting the quality of patents granted and an international patent system would help with this problem.

However, the WIPO report in what appears to be its attempt to justify the abovementioned premise, neglects (on many occasions) to provide a more comprehensive view of the issues. It is also the case that in several instances the Report addresses the issue from the perspective of developed countries and fails to take into account the perspectives and interests of developing countries and adequately appreciate the different levels of development and technological capacity that exists among developing countries. The Report also often presents simplified arguments to support its premise, and these arguments are made on the basis of assumptions without much evidence to support its contention.

In any case a read of the comments below will show quite clearly that the premise presented in the WIPO report is either flawed, or too simplified as it fails to consider all aspects in particular the interests of developing countries.

This is not to say, that the WIPO report does not address public interests or development related concerns. It does so, but in a very limited manner, despite concrete examples of the often adverse impact of the TRIPS Agreement, which should raise many questions about the desirability of an international patent system.

Comments are only made on some parts of the WIPO Report however this should not be taken to mean that there is agreement on parts which have not been commented on.

Comment on Chapter II: Economic Rationale for Patents and Different Interests And Needs In the International Patent System

Chapter II provides 3 economic rationales for the patent system: (i) incentive to innovate (ii) disclosure of knowledge in the public domain; (iii) technology transfer, commercialization and diffusion of knowledge.

Incentive to innovate

The WIPO patent report addresses (i) in paragraphs 28 to 33. It states that the "challenge for the policy makers is to design an optimal protection that will provide enough incentives to investment in innovative activities and at the same time minimizes the deadweight loss caused by the monopoly situation" and that the patent system seems to

be the only solution that "corrects the market failure by restoring the incentives to innovate" (para 33).

In reality achieving optimal protection through the patent system is easier said than done, since "the optimal degree of patent protection cannot be accurately defined"[1]. It depends on many factors and the optimal degree of protection (where the social benefits exceed the social costs) would also "vary widely by product and sector and will be linked to variations in demand, market structures, R&D costs and the nature of the innovative process".[2]

In addition, the assumption is that in developing countries, there is innovative capacity that is waiting to be exploited. Although the reality is that even if patents are an incentive, in most developing countries the innovation systems (of the type seen in developed countries) are extremely weak and even if such capacity exists, they usually exist in the public sector.[3]

Furthermore, developing country entities are also unable to bear the cost of acquiring and maintaining the patent right and defending its right using the legal system and in the event of litigation. Then there are "transaction costs" i.e. for establishing and maintaining the infrastructure of an IP regime, i.e. mechanisms for the grant and enforcement of the IP regime, which can be difficult for developing countries (which usually face scarce human and financial resources) to bear.

In developing countries whether or not the patent system galvanizes innovation depends on many factors. It is obvious for developing countries there is significant costs associated with opting for the patent system as an incentive mechanism.

Finger, the former chief of trade policy research in the World Bank, estimates that the obligations on developing countries to implement TRIPS will result in the increased payments by them of US$60 billion a year.[4] It further estimates that the net annual increase in patent rents resulting from TRIPS for the top 6 developed countries will be US$41 billion (with the top beneficiaries being the US with $19 billion, Germany $6.8 billion, Japan $5.7 billion, France $3.3 billion, UK $3 billion and Switzerland $2 billion). Developing countries that will incur major annual net losses include South Korea ($15.3 billion), China ($5.1 billion), Mexico ($2.6 billion), India ($903 million) and Brazil ($530 million).[5]

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[1] Report of the Commission on Intellectual Property Rights (2002), "Integrating Intellectual Property Rights and Development Policy" (CIPR), p. 16

[2] CIPR p. 16

[3] CIPR, p.16

[4] Finger, J.M. (2002), "The Doha Agenda and Development: A View from the Uruguay Round", Asian Development Bank, Manila. See also Khor, M., "Intellectual Property, Competition and Development" Intellectual Property Rights Series #7, Third World Network, 2005.

[5] Finger, J.M. (2002), "The Doha Agenda and Development: A View from the Uruguay Round", Asian Development Bank, Manila.

Many academics, economists have been critical about IPRs generally and patents specifically since these rights are about creating restrictions on competition and raised concern about its impact on developing countries.[6]

The role of the patent system in fostering innovation should be treated cautiously; something which para 28-33 of the WIPO report fails to do.

The impact of the patent system as an incentive for innovation depends on many conditions such as significant market, sufficient capital, qualified personnel at the firm level and innovation-oriented entrepreneurs, as well as a solid scientific base open to collaboration with industry[7]. There is also evidence that even when such conditions are met, IP may not promote innovation. For instance, a review of 23 empirical studies found weak or no evidence that strengthening patent protection increased innovation, but rather the number of patents applied for[8].

IP protection may be neutral to innovation even in high-tech sectors. In the Nordic countries the general opinion among managers of high-tech firms was that IPRs is not a crucial issue because in the high tech field the product cycle is so short that if you just imitate others "ideas your products will always be outdated and obsolete'[9].

There is also evidence that patent protection has not delivered innovation for developing countries. For example the introduction or strengthening of patent protection for pharmaceutical products has not increased national or foreign direct investment, production or R&D in this field in developing countries[10]. On the other hand the Indian pharmaceutical industry became a global producer of active ingredients and medicines in the absence of patents on such products, which was only introduced in January 2005, at the expiry of the transitional period allowed by the TRIPS Agreement[11].

There are also many examples of how the industrialised countries (when in the process of development) did not depend on the patent system but rather the lack of

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[6] CIPR, p. 17-18; See also Panagriya, A. (1999), "TRIPS and the WTO: An Uneasy Marriage"; Bhagwati, J. (2001) Letter to Financial Times on TRIPS Agreement; Ha-Joon Chang "Intellectual Property Rights and Economic Development – Historical Lessons and Emerging Issues", Intellectual Property Rights Series #3 Third World Network, 2001

[7] For empirical studies on the factors that induce technological innovation and the role of IP, see generally "Technological Innovation and Economic Performance**",** edited by Benn Steil, David G. Victor, & Richard R. Nelson (2002).

[8] Boldrin & Levine 'Against Intellectual Monopoly', 2007, http://www.dklevine.com/general/intellectual/againstnew.htm

[9] Virén, Matti and Malkamäki, Markku, (2002), "The Nordic countries", in Steil, Benn; Victor, David and Nelson, Richard, (Eds), op. cit., p.222.

[10] See, e.g., Ida Madieha Azmi and Rokiah Alavi (2001),'TRIPS, Patents, Technology Transfer, Foreign Direct Investment and the Pharmaceutical Industry in Malaysia', Journal of World Intellectual Property, Vol 4 No. 6, November.

[11] See, eg., S Chaudhuri (2005), The WTO and India's pharmaceuticals industry. Patent protection, TRIPS and Developing countries, Oxford University Press, New Delhi.

patents to promote innovation.[12] Only when the industrialized countries had a sufficiently mature technological base have they benefitted somewhat from the patent system.

Para 33 of the WIPO Report concludes that the "patent system" is the best incentive mechanism available and that other incentive mechanisms that may provide incentives for R&D without the monopoly costs are unattainable. **It does so without discussing other incentive mechanisms and the pros and cons of such mechanisms and why they are unattainable.**

It is worth noting and discussing the various other types of incentive mechanisms such as the open source models, prizes, which do provide incentives for innovation and yet do not suffer from the inefficiencies of the monopoly market power often associated with the patent system. Also as mentioned above, in some sectors the patent system plays a negligible role as an incentive.

The WIPO report must present a more accurate and comprehensive picture in relation to the patent system working as an incentive for innovation, for example at what stage of development and/or technological capacity and under which conditions does the patent system spur innovation. For example, in some countries such as the LDCs the patent system would hardly be an effective incentive, thus the reason for Article 66 of TRIPS, which provides transition periods for LDCs. The WIPO report must delve deeper, and provide a more critical analysis of the patent system as an incentive for innovation.

Disclosure of knowledge in the public domain

The second rationale of the patent system is discussed in para 37 – 40. It is indeed true that one of the bargains within the patent system is that patent holders are required to disclose information relating to the invention.

However in discussing the benefits of such disclosure, the Report does not make a distinction between developed and developing countries. **For developing countries, the benefits of disclosure are limited particularly since most developing countries would not have sufficiently mature technological bases, to be able to exploit the patent information. In addition what is needed to facilitate innovation in developing countries is the transfer of skills and sharing of know-how, which is not enabled by the patent system**.

Furthermore if a patent that is granted is overly broad or the information is not adequately disclosed the patent information will not stimulate innovation. A German professor of

[12] See, e.g. Ha-Joon Chang "Intellectual Property Rights and Economic Development – Historical Lessons and Emerging Issues", Third World Network, 2001; See e.g. Richard Gerster, "Patents and Development: Lessons Learnt from the Economic History of Switzerland", Third World Network 2001; Boldrin & Levine 'Against Intellectual Monopoly', 2007.
http://www.dklevine.com/general/intellectual/againstnew.htm

patent law, Friedrich-Karl-Beier determined that only a small percentage of inventions being patented were being publicly disclosed in a sufficiently clear manner.[13]

WIPO Report should discuss these issues.

Technology transfer, commercialization and diffusion of knowledge

The third rationale of the patent system is discussed in para 41- 46 of the WIPO Report. **Paragraphs 41-44 do not provide adequate critical thinking on the role of the patent system in facilitating technology transfer to developing countries.** What it presents is a rosy picture of how technology transfer is facilitated through licensing of patents, mentioning the huge amounts of money generated from technology licensing in developed countries. But this is hardly surprising since the patent holders are largely from the developed countries. **What it fails to critically analyse is technology transfer from the perspective of developing countries i.e. whether the patent system enables or hinders access to technologies noting that developing countries are largely importers of technology.**

In para 45 the Report presents empirical data of technology transfer via trade and to support this argument the studies of Maskus and Penubarti (1997) have been quoted. These studies argue that imports are a form of technology transfer and that patent protection in the developing countries enables these imports.

On this issue and on the study, the comment in the Report of the UK Commission on Intellectual Property Rights titled "Integrating Intellectual Property Rights and Development Policy" (CIPR report) should be noted: "But strengthening IPRs is also particularly effective in increasing imports of low technology consumer items and is associated with the decline of indigenous industries based on imitation. This effect is clearly a mixed blessing for a developing country. It may be that there is access to more high technology imports previously withheld for lack of IP protection but the costs may be very substantial in terms of lost output and employment, or even retarded growth. This issue is now a very real one in countries such as China."[14]

The CIPR report comment brings into question the whole idea of treating imports as a form of technology transfer as such imports come at the cost of developing capacity locally and producing the products through reverse engineering, which in turn creates employment and growth for the country.

In para 46, the Report speaks of the positive relationship between IP and FDI flows on the assumption that with FDI, technology transfer will follow. It quotes several studies in support of its argument. These studies are focused on how strengthened IPR protection in developing countries, will generate FDI from developed countries and encourage technology transfer by US multinationals to developing countries. **Of course the**

[13] Richard Gerster, "Patents and Development: Lessons Learnt from the Economic History of Switzerland", Third World Network 2001
[14] CIPR, p. 26

assumption made is that an increase of FDI (in all its forms) is always very beneficial to developing countries, but this assumption is itself disputed.[15]

Evidence on a clear cause-effect relationship between strengthened IP protection and FDI is inconclusive. According to Gerster, "Economic history does not support this view" and that "Other factors are far more decisive"[16] He also adds that "Foreign investors are particularly attracted by market size – in countries such as India, China or Brazil, for example – even when conditions do not correspond to textbook descriptions of a market economy. Small countries, on the other hand are frequently regarded as marginal and unattractive, even when they have created admirable market conditions"[17]

A UN study on IPRs and FDI has also found that there is an insufficient linkage between patents and FDI.[18] It also found that cost, market size, levels of human capital and infrastructure development and broad macro-economic conditions were more important considerations. For example China[19] and India[20] have had very large FDI inflows when they had low levels of IP protection. In contrast African countries have relatively high levels of IP protection but receive low levels of FDI.

Likewise despite Canada's and Italy's lack of patent protection at various times they had no trouble attracting FDI according to the United Nations Development Programme (UNDP).[21]

A study by Malaysian academics found that "although Malaysia has relatively strong patent laws which are of world standard, foreign investment into the pharmaceutical industry has been negligible".[22] Even when Malaysia increased its intellectual property

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[15] Woodward, D., "Financial effects of Foreign Direct Investment in the Context of a Possible WTO Agreement on Investment" (2003), TWN Trade and Development Series #21; see also "Foreign Investment and Sustainable Development: Lessons from the Americas"(2008) available at http://ase.tufts.edu/gdae/WorkingGroup_FDI.htm

[16] See e.g. Richard Gerster, "Patents and Development: Lessons Learnt from the Economic History of Switzerland", Third World Network 2001. See also CIPR report, p. 26 which states "As regards the analyses of the impact on foreign investment, we have similar reservations. There is a considerable literature which discusses the extent to which stronger IPRs influence foreign investment, licensing behaviour and the transfer of technology. Much of this literature reaches only tentative conclusions, because of weaknesses in data or methodology."[16]

[17] Richard Gerster, "Patents and Development: Lessons Learnt from the Economic History of Switzerland", Third World Network 2001

[18] "Intellectual Property Rights and Foreign Direct Investment", United Nations, New York, 1993

[19] Professor Jagdish Bhagwati, Testimony before U.S. House of Representatives Committee on Financial Services, April 1, 2003, http://www.columbia.edu/~jb38/testimony.pdf

[20] http://www.oup.com/isbn/0-19-567482-0?view=in

[21] Human Development Report 1999, UNDP, pg. 73. See also Richard Gerster, "Patents and Development: Lessons Learnt from the Economic History of Switzerland", Third World Network 2001

[22] Ida Madieha Azmi and Rokiah Alvavi, "TRIPS, Patents, Technology Transfer, Foreign Direct Investment and the Pharmaceutical Industry in Malaysia", Journal of World Intellectual Property, Vol. 4 No. 6 November 2001

protection to comply with WTO requirements in 2000 there was no increase in the number of foreign pharmaceutical companies setting up factories in Malaysia.[23]

The same study asked multinationals why they did not invest in Malaysia and the reasons given were because the Malaysian market is relatively small so it is not profitable nor economically viable to have large scale foreign direct investment in Malaysia.[24] Furthermore according to the MNCs there was a lack of other forms of fiscal incentives such as tax incentives.[25]

The study concluded that "patent laws are relatively unimportant to foreigners in determining whether to invest in Malaysia or not" and that patent law "should not be seen as the sole attraction for foreign direct investment" and that "Other factors must also be taken into account"[26]

Thus the link between strong IP protection and FDI flows and consequently to technology transfer is tenuous and inconclusive. In fact, high levels of IPRs protection may lead IP holders preferring exportation of the final product rather than investing in or transferring technology to a foreign country.[27] This in turn may deter industrial development and technology catch up.

The WIPO patent report is focused on showing how strengthened IP regimes in developing countries leads to technology transfer by entities in developed countries. **However a discussion on technology transfer as the economic rationale for IP is incomplete, if the report does not discuss to what extent IPRs helps or hampers developing countries gain access to technologies and foster technological catch up.**

There is evidence that patent protection has hindered access to technologies.[28] For example, a study conducted by Watal of the effect of IPRs on technology transfer, in the case of India, in the context of the Montreal Protocol[29] concluded that "Efforts at acquiring substitute technology have not been successful as the technologies are covered

[23] Ida Madieha Azmi and Rokiah Alvavi, "TRIPS, Patents, Technology Transfer, Foreign Direct Investment and the Pharmaceutical Industry in Malaysia", Journal of World Intellectual Property, Vol. 4 No. 6 November 2001

[24] Ida Madieha Azmi and Rokiah Alvavi, "TRIPS, Patents, Technology Transfer, Foreign Direct Investment and the Pharmaceutical Industry in Malaysia", Journal of World Intellectual Property, Vol. 4 No. 6 November 2001

[25] Ida Madieha Azmi and Rokiah Alvavi, "TRIPS, Patents, Technology Transfer, Foreign Direct Investment and the Pharmaceutical Industry in Malaysia", Journal of World Intellectual Property, Vol. 4 No. 6 November 2001

[26] Ida Madieha Azmi and Rokiah Alvavi, "TRIPS, Patents, Technology Transfer, Foreign Direct Investment and the Pharmaceutical Industry in Malaysia", Journal of World Intellectual Property, Vol. 4 No. 6 November 2001

[27] See CIPR, pg. 27-28

[28] Khor, M., "Intellectual Property, Competition and Development (2005), Intellectual Property rights series #7

[29] The Montreal Protocol on Substances That Deplete the Ozone Layer is an international treaty designed to protect the ozone layer by phasing out the production of a number of substances believed to be responsible for ozone depletion.

by IPRs and are inaccessible either on account of the high price quoted by the technology suppliers and/or due to the conditions laid down by the suppliers. This would require domestically owned firms to give up their majority equity holding through joint ventures or to agree to export restrictions in order to gain access to the alternative technology."[30] The financial assistance to acquire the technology was also not effective. In India, Korea and China, production is dominated by local-owned firms, for which the access to ozone-friendly technology on affordable terms was a central issue of concern.

The study refers to the case of Indian producers wanting to switch to refrigerators that use HFC134a (in order to replace CFCs, which are ozone depleting) for domestic and export sale. However, their efforts to access the technology were unsuccessful. One Indian company that sought access to the technology was quoted a high price of US$25 million by a transnational company that produces HFC 134a and that holds a patent on the technology. The supplier also proposed two alternatives to the sale, namely, that the Indian firms allow the supplier to take majority ownership in a joint venture to be set up, or that the Indian firms agree to export restrictions on HFC 134a produced in India. Both options were unacceptable to the Indian company as the quoted price was unrealistically high.

There are also numerous situations where weak IP regimes have actually facilitated access to foreign technologies, allowed reverse engineering to take place, resulting in strengthened indigenous technological capacity.

For example prior to 1970 when India allowed patent protection for pharmaceuticals, MNCs dominated the supply of medicines and the Indian manufacturers only supplied 32% of the Indian market.[31] In 1970, the Indian law was amended and patents on pharmaceutical products were not allowed. Over the years the share of the Indian pharmaceutical market supplied by domestic companies increased to 77%. India also moved from being a net importer of medicines to a net exporter with exports worth US$3177 million in 2003-4. It exports to 65 countries including developed countries such as the USA and Europe and developing countries. India has the most US Food and Drug Administration approved manufacturing facilities outside the US, which indicates the high technology and quality standards achieved by Indian manufacturers when IP protection was lowered. It should also be noted that between 1970 and 1995 India received significant amounts of FDI.[32]

Likewise, in Switzerland in the 1880s two of Switzerland's most important industries, chemicals and textiles were strongly opposed to the introduction of patens as it would restrict their use of processes developed abroad. Steiger (a textile manufacturer) commented that "Swiss industrial development was fostered by the absence of patent protection. If patent protection had been in effect neither the textile industry nor the

[30] Jayashree Watal (1998), "The issue of technology transfer in the context of the Montreal Protocol: Case Study of India".
[31] See, eg., S Chaudhuri (2005), *The WTO and India's pharmaceuticals industry. Patent protection, TRIPS and Developing countries*, Oxford University Press, New Delhi.
[32] http://www.oup.com/isbn/0-19-567482-0?view=in

machine building industry could have laid the foundations for subsequent development nor would they have flourished as they did".[33] Benziger (a manufacturer) noted that "Our industries owe their current state of development to what we have borrowed from foreign countries. If this constitutes theft, then all our manufacturer are thieves." In 1907 Switzerland had to allow patents on chemical processes or Germany would have imposed trade sanctions. In the debate Federal Councillor Brenner told the Parliament "In our deliberations on this law, we would do well to bear in mind that it should be framed in such a way that it is adapted to the needs of our own industries and conditions in our own countries. These considerations, rather than the demands and claims for foreign industries, must be our primary concern in shaping the law."[34]

Similarly because the Netherlands abolished its 1817 patent law in 1869, Philips was able to start its production of light bulbs in 1891 in the Netherlands without having to worry about infringing Edison's patents.[35]

Of course the TRIPS Agreement now restricts (to a certain extent) the ability of developing countries to follow this path. However such examples provide a more comprehensive view of the patent system and to what extent it enables or hinders transfer of technology, technological catch up and development of industries. What is obvious from the abovementioned examples is that the lack of patent protection in the now-industrialised countries and in developing countries played a major role in strengthening local capacity.

WIPO report in part (v) on "Need for Further Investigation" (para 60-61) states that a majority of the studies on the economic rationale for a patent system are focused on developed countries and that the effect of a stronger patent system on stimulating innovation, especially in developing countries is open to debate. **However as shown above, discussion on IP and technology transfer in the WIPO report does not even present the existing examples of how the now-industrialised countries developed their industries when they were in the process of development. As discussed above many of the now-industrialised countries had weak IP regimes (i.e. no patent protection) to facilitate access to technologies. Only when these developed countries had a sufficiently mature industry and became generators of technology, did they benefit from the patent system.**

While further investigation may be needed as mentioned in para 61, Chapter II of the WIPO report fails to capture data and studies that are already available, in relation to what extent the patent system helps or hinders developing countries in their process of development. Also to show concretely the link between IP and innovation and technology transfer, the WIPO report must disclose the patent

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[33] Gerster Richard "Patents and Development: Lessons Learnt from the Economic History of Switzerland", Intellectual Property Rights Series #4, Third World Network, 2001

[34] [34] Gerster Richard "Patents and Development: Lessons Learnt from the Economic History of Switzerland", Intellectual Property Rights Series #4, Third World Network, 2001

[35] "Bad Samaritans: Rich Nations, Poor Policies and the Threat to the Developing World", Ha-Joon Chang, Random House Business Books, 2007, pg. 132

policies that the now-industrialised countries followed (when they were in the process of development), that led to major technology development. They should also explore and disclose the pathways (in relation to IP protection) that certain developing countries followed such as the case of the Indian pharmaceutical industry, the cases of the east asian economies such as Japan, Korea and Taiwan[36], that enabled the development of sufficiently mature technology base. All of these instances are relevant and have been documented concretely. It is only when such empirical evidence is presented factually, can there be a better understanding of the link between IP and innovation and IP and transfer of technology.

Comment on Chapter III: Technology Disclosure through the patent system

Chapter III discusses the importance of technical information contained in patent applications in business, as well as difficulties in accessing information particularly with regard to the full text of patent documents (which is only available for a minority of patent authorities) and the legal patent status; and difficulties for offices in conducting prior art searches and for users to access the information due to linguistic diversity in prior art.

Chapter III is also premised on the presumption that effective use of patent information in developing countries will unleash the innovative capacity in developing countries.

As it elaborates on the importance of the technical information, it becomes obvious that a country must have a reasonably sophisticated technological base wherein once the information is known, "it stimulates further innovation by helping to develop technology which surpasses the known technology encourages alternative solutions for the same problem, or it may indicate how to solve comparable problems in other technical fields" (para 71).

The reality in most developing countries, which the Report fails to consider, is that they do not necessarily have a sufficiently mature technological base and R&D capacity to be able to benefit from this information. Most developing countries are at the stage of "initiation" and "internalization" of technology, wherein they would have to innovate using existing inventions through reverse engineering, while making minor adaptations, rather than "leapfrogging" over known technology as mentioned by the Report (para 71).

In addition, what most developing countries need to be able to exploit the patent information is capacity building, i.e. the transfer of skills and sharing of know-how, which is not enabled by disclosure in the patent system.

[36] See e.g. Nagesh Kumar, "Intellectual Property Rights, Technology and Economic Development: Experiences of Asian Countries", Study paper prepared for the UK Commission on IPRs, available at http://www.iprcommission.org/graphic/documents/study_papers.htm

It appears that the analysis in Chapter III overstates the benefits of patent information for developing countries. It does not adequately distinguish between: how patent information may work for developed countries and perhaps some developing countries (in some specific sectors) with a sufficiently sophisticated technology base and the ability to "leapfrog" and other developing countries with nascent, inadequate or non-existent innovative capacity.

Comment on Chapter IV: Technology Diffusion and the patent system

Chapter IV is about "Technology Diffusion and the Patent System". In this Chapter the Report elaborates on (a) Licensing and the Transfer of Technology; (b) Standards and (c) Collaborative Research Projects.

Licensing and the Transfer of Technology

In para 99, in an attempt to try and justify patents encouraging technology transfer and FDI, the Report states in a convoluted manner that although "there is not much evidence", research says that patents and enforcement measures "encourage technology transfer but that it is only one among many other factors influencing such a transfer, which include the size of the market, the faculty to absorb technology, financial incentives and the existing infrastructure, among others".

If there is no hard evidence making a positive link between patents and technology transfer and FDI, and if "patents" is only one of the many factors, then the positive link between patents and technology transfer and FDI is non-existent.

It is noteworthy that CIPR has stated that, "If the question is addressed in terms of what factors are most important in determining foreign investment, it is quite common for IPRs to be omitted altogether.[37]

The Report does recognize that too strong patent protection in particular in the early stage of industrialization when learning takes place through reverse engineering and duplicative imitation, or an abuse of such rights, may also hinder technology transfer and increase the cost of licences. **The Report would benefit from a further elaboration on this point, of which there is growing evidence.**

As mentioned above (see comment on Chapter II) discussion on the role of patents in transfer of technology is incomplete without evidence being presented on how the now-industrialized countries acquired technology and what type of patent policies they adopted when they were in the process of development; and the role of reverse engineering and imitation in enhancing local capacity in the now-industrialized countries, east asian economies (e.g. Japan, Korea and Taiwan)[38] as well as in

[37] CIPR, p. 27

[38] See e.g. Nagesh Kumar, "Intellectual Property Rights, Technology and Economic Development: Experiences of Asian Countries", Study paper prepared for the UK Commission on IPRs, available at http://www.iprcommission.org/graphic/documents/study_papers.htm

developing countries such as India which has an enviable pharmaceutical industry.

The Report also focuses on voluntary licensing agreements as one means of transferring technology. Of course the assumption here is that patent holders are willing to license technology on favorable terms to developing countries. **The Report needs to present conclusive empirical evidence, to support its assertion, since there is evidence to the contrary.**

Developing countries, which have the capacity to absorb technology often, find it difficult to obtain such licences on favorable terms as they are seen as potential competitors. A concrete example on this point is the abovementioned study conducted by Watal of the effect of IPRs on technology transfer, in the case of India, in the context of the Montreal Protocol.

In addition most developing countries do not have sufficiently mature anti-competitive structures to deal with abuses of patent rights effectively. But the Report does not elaborate on this point in para 106-108.

The Chapter also avoids discussion on the role of compulsory license in accessing technology, especially when a patent holder refuses to license the use of a technology on fair and reasonable terms. The Report should elaborate on the use of compulsory licence to access technologies e.g. the grounds on which CL can be issued, the provisions available in the TRIPS Agreement on this matter etc; examples of countries or courts that have used or threatened to use compulsory licensing to access to technologies or to deal with anti-competitive practices. For such examples see KEI Research Note 2007:2 on "Recent examples of the use of compulsory licenses on patents".

Standards

The issue of "Standards" is discussed in para 111 to 122 of the WIPO report.

The report has rightly identified that early disclosure of patents can help the better functioning of the standardization process. However, **the report does not articulate the current behavior prevailing among industry participants where patents are strategically used by firms to avoid early disclosure of "essential" patents pending during the process of standard setting. Further, a review of the patent disclosure and licensing policies adopted by standard-setting organizations would reveal that most standard-setting organization do not provide coherent set of norms concerning the time of disclosure, identification of "essential" patents, reasons for optional licensing (i.e. royalty free, F/RAND etc.). There is also no compelling reason why royalty free licensing should not be made mandatory when some industry consortiums in the area of ICT have opted for the same.**

The report also fails to mention the special concerns of developing countries in relation to patents and standards including China's proposal to the WTO Technical

Barriers to Trade Committee.[39] Developing country manufacturers, who are generally downstream implementers of technical standards, often find themselves in a perpetual trap due to the effects of royalty staking and patent ambush. **Thus the Report should discuss the concerns of developing country and its industries in relation to patents and standards.**

While the report spells out that countries can adopt measures in the nature of limitations and exceptions, compulsory licensing or limitations on enforcement of patent rights, **special problems may accrue when products involving technical standards are traded across borders and the countries laws do not provide for such remedies. The report also does not discuss the possible limitation on the very grant of patents in some areas of technologies available under article 27.1 of TRIPS. The report also does not discuss how differences in the application of competition laws within different jurisdictions in cases involving misuse of patents or other problems concerning patents in technical standards by both standard participants and third parties can create problems of legitimacy for international technical standardization process.**[40]

Collaborative Research Projects: Public Private Collaboration

The WIPO patent report in para 130-132 presents the US Bayh Dole Act of 1980 (BD) as a possible means for technology diffusion. **However, there needs to be more in-depth analysis of whether this is indeed the case. A recent paper, which should be thoroughly, studied for purposes of this report states:**

"Although universities can and do patent much more in the post-BD era than they did previously, neither overall trends in post-BD patenting and licensing nor individual case studies of commercialized technologies show that BD facilitated technology transfer and commercialization. Empirical research suggests that among the few academic patents and lisenses that resulted in commercial products, a significant share (including some of the most prominent revenue generators) could have been effectively transferred by placed in the public domain or licensed non-exclusively".[41]

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[39] See proposal submitted by China in the WTO TBT committee (IPR Issues in Standardization – G/TBT/W/251 and G/TBT/W/251/Add.1)

[40] For example, consider the recent decision of US CAFC in Rambus Inc v. FTC (2008) Available at: http://pacer.cadc.uscourts.gov/common/opinions/200804/07-1086-1112217.pdf. The FTC has gone in appeal. A similar case is pending with the European Competition Commission- See, ECC Press Release (2007) Available at: http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/330&format=HTML&aged=0&language=EN&guiLanguage=en. Following recent pro-open standards advocacy by the European Competition Commission, the results in application of competition laws to patents may show greater degree of diversion. See for example ECC press release (2008) in support of open standards Available at: http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/317

[41] So AD, Sampat BN, Rai AK, Cook-Deegan R, Reichman JH, et al (2008) Is Bayh-Dole good for developing countries? Lessons from the US experience. PLoS Biol 6 (10): e262.doi:10.1371/journal.pbio.0060262

In addition, under the topic of Public Private Collaboration, only the example of BD is given, which the report itself admits has its own pitfalls, and yet it concludes by saying that "Experience shows, however that the successful development of new products often requires a certain form of cooperation between the public and private sectors" and that "In order to achieve such results, it may be argued that funding for research projects run by the public private partnerships in developing countries should be increased". **The Report fails to provide examples of the successful public private models in developing countries to support its contention that funding for such models should be increased.**

The report hopes that allowing patents on research coming out of the academia and public funded research would create incentives for building local technical know-how and scientific expertise that could encourage domestic production in various industries. **The basis for this hope is not clear noting there is very weak evidence that that BD has even worked in the US in terms of facilitating technology transfer and commercialization, (and such evidence is also not presented in the WIPO report).**

The report also fails to explain why technology diffusion is not faster through publications since historically most of the economic contributions of public sector research institutions have occurred without patents through dissemination of knowledge, discoveries and technologies by means of journal publications, presentations at conferences and training of students.[42]

The report also does not address the increasing problems of patenting of upstream research tools and platforms that have resulted due to BD.[43]

The report takes a market oriented approach towards outcomes of public funded research. This notion has been questioned time and again and many commentators are of the view that this market oriented view promoted through extensive patenting has failed to further basic science and innovative research and has deterred scientists from fundamental research to applied technologies.[44]

Comment on Chapter V: Current Multilateral Framework

Existing international instruments

In para 133 of the report, the issue of stringent "working requirement" for patents prior to the Paris Convention (1883) is mentioned. However, it does not explain the rationale

[42] So AD, Sampat BN, Rai AK, Cook-Deegan R, Reichman JH, et al (2008) Is Bayh-Dole good for developing countries? Lessons from the US experience. PLoS Biol 6 (10): e262.doi:10.1371/journal.pbio.0060262

[43] So AD, Sampat BN, Rai AK, Cook-Deegan R, Reichman JH, et al (2008) Is Bayh-Dole good for developing countries? Lessons from the US experience. PLoS Biol 6 (10): e262.doi:10.1371/journal.pbio.0060262

[44] David Mowery, Richard Nelson, Bhaven Sampat, Arvids Ziedonis "Ivory Tower and Industrial Innovation: University–Industry Technology Transfer Before and After Bayh-Dole" *Stanford University Press* Stanford.

behind imposing stricter working requirements by the then industrializing nations. Studies have claimed that local working is part of the fundamental obligations of the patentee and thus cannot be dispensed with.[45] **The WIPO report should bring out proper legal and contextual facts concerning the issue of local working as it is linked to the efficiency argument of a grant of patent.**

Patent Cooperation Treaty

Issues concerning the Patent Cooperation Treaty (para 158-166) as an efficient system for patent filings are questionable in the light of problems connected to demand management and quality of patents applied through PCT and granted by national offices. **It is noteworthy that an overly low threshold of novelty and inventive step criterion followed in many jurisdictions has created an artificial demand.**

The success of the PCT should not be solely based on the number of contracting parties, or the surge in patent applications for international patent filings, but must be based on more constructive parameters like quality and value of such patents applied and granted.[46] The patent system must not encourage strategic patenting by making filings easier, more affordable and by making enforcement easier.[47] Such practices may chill innovation and competition in complex fields of technology.[48] **Thus the question remains - has PCT contributed to it since greater filing may lead to patent thickets and in turn endorse strategic patenting activities thereby having a chilling effect on innovation?**

The Report should also explore the impact of joining PCT on the number of patent applications received in a developing country. As noted in para 47-52 the most intensive users of the PCT system tend to be a select group of developed countries. Thus if by joining the PCT, a developing country finds itself having to deal with many more patent applications (made by foreign patent holders), this will create even more access problems for such a country (which it would not have to deal with if it did not join the PCT), in addition to having adequate examination structures to deal with the increase in patent applications.

Search and Examination

The issue of search and examination is discussed in para 181-197. The report states in para 181 that search and examination thus ensure that granted patents meet *a priori* the

[45] Micheal Halewood, Regulating Patent Holders: Local Working Requirements and Compulsory Licensing at International Law, Osgoode Hall Law Journal, Vol. 35 No.2 p. 245 (1997). Available at: http://www.ohlj.ca/archive/articles/35_2_halewood.pdf

[46] Dominique Guellec and Bruno van Pottelsberghe de la Potterie, Application, Grants and the Value of Patents, Published in *Economic Letters*, 69(1) 2000.

[47] D Harhoff, Strategic Patenting and Patent Policy, Presentation Prepared for the EC-BEPA Workshop on EU Patent Policy – Brussels, September 19th, 2007. Available at: http://ec.europa.eu/dgs/policy_advisers/docs/strategic_patenting_Harhoff.pdf

[48] James Bessan, Strategic Patenting of Complex Technologies, Available at: http://www.researchoninnovation.org/thicket.pdf

requirements prescribed under the applicable law and as a consequence, patent owners and third parties will enjoy more legal certainty in patent rights. However, this paradigm has come under recent challenge. It is noted by patent experts that the patent system fails to provide sufficient notice since the boundaries of the patents applied/granted are often unclear.[49] The report does not consider this paradigm involved in inefficiencies created by arguably a patent system that generates incentives for litigation rather than innovation.

In para 188, the WIPO report states "countries with full search and examination systems have been increasingly posing the same question because of their increasing backlogs". **The problem really is the trend in developed countries in relaxing the criteria, standards or practise of granting patents.** The number of patents tripled from 1983 to 2002 (from 62 000 to 177 000) accompanied by a proliferation of patent awards of dubious merit for example "inventions" that are not new or are trivially obvious.[50] According to Jaffe and Lerner, the US PTO has become so overtaxed and its incentives so skewed to granting patents that the tests for novelty and non-obviousness have become largely non-operative. **Thus the main issue should be to deal with the source of the problem and tighten the patentability criteria.**

Further, if the concern for not adopting stringent patentability criterion is due to the time taken for examination and pendency of applications, then there is sufficient evidence from the recent past which has pointed out that a more stringent examination process does not lengthen the pendency period.[51]

The report states that there is "evidence to suggest that, in many cases, applications for the same invention are being examined multiple times by different patent offices. Consequently, countries are increasingly seeking for international cooperation." **Although there be may some duplication, there is a sound reason for it i.e. that the examination should be done according to a country's patentability criterion which in turn should reflect the country's level of development and priorities. Thus duplication should not be seen as an efficiency issue.**

Inventive step

Concerning the level of inventive step criterion (para 217-220), the report is of the opinion that "the concrete application of the inventive step requirement is quite complex and it cannot be simply limited to a debate on a "high" level of inventive step versus a "low" level of inventive step (para 220). However, such debate does make sense when the inventive step criterion adopted by a country's patent system has a potential to exclude or include certain category of patents.[52] Further recent decisions rendered by the

[49] Bessen and Meurer, Patent Failure: How Judges, Bureaucrats and Lawyers put Innovators at Risk". Princeton University Press (2008).
[50] Jaffe, A. and Lerner, J. (2004), "Innovation and its Discontents", Princeton University Press
[51] Batabyal and DeAngelo, Average Pendency and Examination Errors: A Queuing Theoretic Analysis, (2007). Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=983817
[52] See for example, section 3(d) of the Indian Patents Act, 1970. This section excludes certain forms of inventions if the mere discovery of known substance shall not be patented unless they differ significantly in properties with regard to "efficacy".

US Supreme Court has come out heavily on the loose criterion of non-obviousness employed by the US patent office and has suggested corrective measures.[53] **There is sufficient evidence to the effect that a low level of inventive step (non-obviousness) can inhibit competition, which the current report has not taken into consideration.**[54]

Chapter VII: Perceived Threats to the Effectiveness of Patents as Incentives to Innovation

The WIPO report states that problems created by the friction in the patent system due to emerging technologies shall be solved in the near future as "past experiences suggest that, with the development of technology from a cutting-edge stage to a more mature stage, questions relating to the applications of patent law on that technology would gradually be clarified and legal certainty and predictability would increase due to convergence of practices and case law". **But this remains an open-ended question as the issue of legal certainty of the patent system is increasingly under challenge.**[55] **Further a "one size fits all" approach to the patent system is wrongly conceived and presents fundamental flaws in determining the right degree of incentives needed based on the nature of technology, markets, innovation dynamics etc**. It is anticipated that the patent system will evolve into two types, one that protects the traditional subject matters (chemical, mechanical and other inventions), and new subject matters will need some soft incentives.[56] **In this regard, it is commendable that the WIPO report asks a very pertinent question, i.e. "…whether the current patent law is an appropriate mechanism to foster innovation in a specific new technological area?"**

The report states that use of patents as financial devices have led to the phenomenon of "patent trolls". However, the report does not take a critical look at the issue. **It does not say why patent trolls emerge in the first place- where the report would probably want to enquire if they have emerged due to unwarranted reliance placed on the patent system?** There is increasing evidence to the effect that trolls inhibit innovation and competition and are thus antithesis to welfare and create inefficiencies.[57] Even a recent Supreme Court decision in the United States has come out heavily on the functioning of trolls.[58] Further it is witnessed that such patent trolls are engaged in forum shopping to get favourable judgments from specific courts within a jurisdiction.[59]

Although the report identifies patent litigation as one of the threats to the perceived effectiveness of the patent system, it presumes that it is a natural outcome of the

[53] See *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007).
[54] See US Federal Trade Commission, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy (2003). Available at: http://www.ftc.gov/os/2003/10/innovationrpt.pdf
[55] Bessen and Meurer, Patent Failure: How Judges, Bureaucrats and Lawyers put Innovators at Risk". Princeton University Press (2008).
[56] See European Patent Office, Scenarios for the Future (2007).
[57] Magliocca, Blackberries and Barnyards: Patent Trolls and the Perils of Innovation, Notre Dame Law Review (2007). Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=921252#
[58] *eBay Inc v. MercExchange, L.L.C.*, 547 U.S. 388 (2006).
[59] See Techdirt, Why Patent Trolls Worldwide Love Marshall –Texas, Available at: http://www.techdirt.com/articles/20060203/0332207.shtml

patent system. It fails to ask critical questions concerning the efficiencies lost due to the litigation model and issues concerning opportunistic and anti-competitive patent litigation.[60] Some lawsuits could have been avoided by restricting certain subject matter like software and business methods from the purview of the patent system. Patent thickets leads to the tragedy of anti-commons in many technology markets, primarily in the area of biotechnology inventions. While cross licensing and patent pools are ex post measures to arrive at solutions, ex ante measure can involve use of pre-grant flexibilities in the form of higher degree of patentability criterion and excluding certain subject matter from the patent system- which the report does not take into consideration. Thus more efficient solutions to the problems posed by patent thickets should naturally emphasize on pre-grant use of patent thresholds.

Chapter IX: The innovation incentive in the context of public policy objectives

The WIPO report is ineffective and inept in its accounting of the conflicts between the IP system and issues of public interests and tensions that have arisen as a result of the patent system (which developing countries had to adopt because of the TRIPS Agreement) and its impact on the achievement of public policy objectives in the area of health, knowledge, biodiversity, agriculture etc.

For example when discussing health, it ignores the issues of why the public welfare impact of the patent system is most critically under scrutiny in the field of public health. It makes no mention of the high prices of medicines that patients have had to deal with as a result of the patent system (harmonized under TRIPS Agreement) for example, at one point the brand name HIV/AIDS costs US$10,000 per person per year, i.e. beyond the reach of most patients. It was only after the entry of generic medicines from India (which could produce as a result of no patent protection) did the prices of the medicines drop to about US$ 350 per person per year. As more competitors entered the market, the price of HIV/AIDs medicines dropped to about US$ 200. As a result of this competition, the brand name companies also reduced the prices of medicines. The availability of generic medicines is one of the reasons for the increased number of patients receiving treatment. Of course the problem of high prices of medicines is now seen in relation to 2nd and 3rd line ARV treatment, medicines for cancer, diabetes and other diseases.

The Report also makes no mention of how pressures are placed by developed country governments as well as by the industry on developing countries that wish to make use of flexibilities that are available. Of course this questions the whole rationale for having patent system since valid measures to improve access, are repeatedly denied in the context of developing countries. These pressures and tensions over affordability of medicines as a result of patents in developing countries eventually led to the adoption of the Doha Declaration of TRIPS and public health. **But once again the Report**

[60] Meurer, Controlling Opportunistic and Anticompetitive Intellectual Property Litigation, Available at: Boston College Law Review (2003). Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=361760

disregards the existence of this groundbreaking political statement of WTO members.

Even where the Report mentions the August 2003 Decision (and the TRIPS amendment), the Report pays no heed to the initial frictions and eventual compromises that led to Decision. The report also disregards the many questions raised about the effectiveness of the August Decision (and the TRIPS amendment) in providing swift access to affordable medicines to developing countries.[61]

The WIPO Report also does not report on the use of flexibilities such as compulsory licences by developing countries, its positive impact in promoting access (despite the availability of some evidence)[62] and the reactions of developed countries[63].

Finally in the area of health **there is also the problem of the patent system only being an incentive promoting research in the health problems of developed countries while ignoring the R&D needs of the developing countries thus resulting in a 10/90 gap. Once again this is also not explicitly addressed in para 291-293.**

In para 294 – 302, the issue of patenting of life science research as well as genetic resources (including plants and animals) is reduced to a question of ethics and accommodating the different value systems. Economic and social considerations that arise from the patenting of life forms particularly for developing countries are not discussed despite much concrete evidence on this issue.[64]

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[61] See MSF document, The WTO Decision on Compulsory Licensing: Does it Enable Import of Medicines for Developing countries with Grave Public Health Problems? (2008), Available at: http://www.kommers.se/upload/Analysarkiv/Arbetsomr%C3%A5den/WTO/Handel%20och%20skydd%20f%C3%B6r%20immateriella%20r%C3%A4ttigheter%20-%20TRIPS/Rapport%20The_WTO_decision_on_compulsory_licensing.pdf

[62] See e.g. Khor, M., "Malaysia's Experience in Increasing Access to Antiretroviral Drugs: Exercising the 'Government Use' Option", Intellectual Property rights Series No. 9 available at http://www.twnside.org.sg/IP_IPRS.htm; Khor, Martin., "Patents, Compulsory license and Access to medicines (February 2007) available at http://www.twnside.org.sg/pos.htm; Oh, Cecilia, & Musungu, Sisule, "The use of flexibilities in TRIPS by developing countries: can they promote access to medicines?" available at http://www.who.int/intellectualproperty/studies/en/; KEI Research Note 2007:2 on "Recent examples of the use of compulsory licenses on patents" available at www.keionline.org; See also The Ministry of Public Health And The National Health Security Office Thailand (February 2008), "The 10 burning questions regarding the Government Use of Patents on the four anti-cancer drugs in Thailand" available at http://eng.moph.go.th/, The Ministry of Public Health And The National Health Security Office Thailand (February 2007),Facts and Evidences on the 10 Burning Issues Related to the Government Use of Patents on Three Patented Essential Drugs in Thailand available at http://eng.moph.go.th

[63] See e.g., threats by European Commissioner over issue of compulsory license by Thailand and pressures by the United States. See, http://www.twnside.org.sg/title2/health.info/2008/twnhealthinfo20080402.htm; See also http://www.cptech.org/ip/health/cl/recent-examples.html#Brazil

[64] See e.g. ActionAid (1999), "Crops and Robbers: Biopiracy and the Patenting of Staple Food Crops"; Centre for Food Safety (2005), Report on "Monsanto vs US Farmers"; ETC Group, (October 2007), "The World's Top 10 Seed Companies - 2006", www.etcgroup.org; ETC Group, (May/June 2008) by the ETC Group (Action Group on Erosion, Technology and Concentration) on "Patenting the "Climate Genes" And Capturing the Climate Agenda", www.etcgroup.org; See also http://www.no-patents-on-seeds.org/

There are many studies to date that show countless patent claims (some of them extraordinarily broad) over seeds, genes, plants, proteins and other life forms.[65] According to an ActionAid study[66], techniques to decode and identify the best plant genes are accelerating and the biotechnology industry is racing to map the genomes of the world's staple food crops with a view to patenting the vital and most interesting genes. The study also states that "Only 10 per cent of seed is bought commercially in the developing world and many poor farmers buy seed only once in five years…We believe the right to livelihood--a basic human right--is threatened by patents on life in food and agriculture. Our analysis is that these patents pose a threat to farmers' livelihoods and global food security. They may decrease farmers' access to affordable seed, reduce efforts in public plant breeding, increase the loss of genetic diversity and prevent traditional forms of seed and plant sharing."

In some countries farmers are already being prosecuted for alleged violation of IPRs. A study by the Center of Food Safety[67] shows how American farmers have been impacted by litigation arising from the use (some of it unintentional) of patented genetically engineered crops produced by Monsanto. The report noted at that time that Monsanto had filed lawsuits against 147 American farmers for the use of genetically engineered crops and the company had a staff of 75 devoted solely to investigating and prosecuting farmers. According to estimates then, Monsanto had been awarded over $15 million for judgments granted in their favour with the largest recorded single payment received from one farmer being US$3,052,800. This trend in developed countries may be replicated in developing countries.

It is also significant to note that the beginning of the 21st century has seen significant concentration of control over the seed industry due to the various mergers and acquisitions. According to a report by ETC in October 2007[68], around 57% of the commercial seed market worldwide, which is worth US$13, 014 million is owned by 10 multinationals companies. The report further states that the market share of the top 10 seed companies is even greater i.e. at 66% when looking at the proprietary seed market (i.e. brand names commercial seed subject to intellectual property). In fact the top 4 companies account for over half (51%) of the total proprietary seed market.

In the context of climate technologies, it is worth noting a recent report by the ETC Group[69] that reveals that the world's largest seed and agrochemical corporations are claiming patents on genes in plants that will be able to withstand environmental stresses such as drought, heat, cold, floods etc. There are about 532 patent documents filed by corporations on "climate ready" genes at patent offices around the world. According to the report "The Gene Giants are staking patent claims on genes related to environmental stresses – not just those in a single engineered plant species – but also to substantially

[65] ibid.
[66] ActionAid (1999), "Crops and Robbers: Biopiracy and the Patenting of Staple Food Crops"
[67] Centre for Food Safety (2005), Report on "Monsanto vs US Farmers"
[68] ETC Group, (October 2007), "The World's Top 10 Seed Companies - 2006", www.etcgroup.org
[69] ETC Group, (May/June 2008) by the ETC Group (Action Group on Erosion, Technology and Concentration) on "Patenting the "Climate Genes" And Capturing the Climate Agenda", www.etcgroup.org

similar genetic sequence in virtually all engineered food crops". It further states that these proprietary technologies will ultimately "concentrate corporate power, drive up costs, inhibit independent research, and further undermine the rights of farmers to save and exchange seeds".

The issues of patenting of life science research and genetic resources have to be explored in the context of its impact on access to such resources by developing countries to achieve public policy objectives such as the right to food, access to climate technologies, access to seeds, plant and animal varieties etc. This issue should also be addressed taking into account the implications of the current trend of mergers, which result in a concentration of patent portfolio in the hands of a new multinational companies.

In this regard the WIPO report must also mention the review of Article 27.3(b) and the relevant proposals and WTO documents on this issue.

Chapter X: Development Related Concerns

In para 306, the WIPO report states that "The patent system was created as a mechanism to promote technological development, diffusion and transfer of technology and private investment flows" and that the "The international patent system is aiming at achieving or at least facilitating those goals at the international levels".

Under the comment on Chapter II, several observations have been made with regard to the patent system and its relationship to technology transfer and investment flows. The WIPO report must take into account these observations and avoid making unqualified statement such as in para 306. It is not just that there is concern that the international patent system runs counter to national development, but the link between patents and technology transfer and development in developing countries as well as investment flows to developing countries is weak. Instead if one were to better understand the economic development of the now-industrialised countries, it is obvious that the lack of patent protection played a major role in facilitating technology catch up.

In para 307 and 308 the is assumption that developing countries have innovative capacity to be unleashed and entities from those countries will rush to claim patents, if patent information is made available and cost is reduced. Of course the basis for this assumption is not clear. What is widely known is that most developing countries do not have the innovations systems as seen in the developed countries to be able to exploit the patent system. (See Comment under Chapter II and III)

In para 309, the value of reverse engineering, imitation as means for technological catch up and industrial development is not recognized although they have been used successfully by the now-industralised countries. To benefit from reverse engineering, a country must be very selective in the type of patents that are granted in its country. Loose patentability criteria will enable more technologies to be patented in the country, thus foreclosing the option of reverse engineering. See also above Comments on Chapter IV.

In relation to para 315, **there is an assumption on the effectiveness of the 30th August Decision in providing swift access to medicines. Once again the WIPO report ignores all the frictions, tensions, and debate that took place and that continue in relation to the 30th August Decision (and the subsequent TRIPS amendment). It is definitely too early to claim as done in the WIPO report that "multilateral fora" can deliver on issues that are of concern to public interest. The jury is still out on the protocol amending the TRIPS Agreement (which by the way is still not in force).**

In fact there is much evidence to the contrary. For example despite the reaffirmation in the Doha Declaration on TRIPS and public health, developed countries which are a part of the multilateral fora and its industries continue to persecute and threaten sanctions against developing countries that make use of flexibilities such as the compulsory licence, even when it concerns saving lives of patients in developing countries.