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Are weak IPRs acting as barriers to transfer of climate friendly technologies: Assessing IPR regimes in five Asian Countries

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Abstract

Intellectual property rights (IPRs) constitute a very important but contentious component of the discussion on technology transfer to developing countries for mitigation and adaptation to climate change. The debate on IPRs has been quite polarized; while developing countries want IPRs to be addressed as a barrier within the technology transfer discussion, developed countries maintain that weak IPRs in developing countries constitute the biggest barrier to technology transfer. This paper examines broadly the IPR regimes of five Asian countries at different stages of development- China, India, Indonesia, Malaysia and Thailand, with the aim of having a broad, objective overview of the state of IPRs in the Asian region. This is sought to be done in the light of the contention that weak IPRs in developing countries impede technology transfer. The IPR regime in each of these countries is objectively assessed on the basis of three parameters- TRIPS compatibility, enforcement and TRIPS Plus provisions to determine the 'strength' of the regime in each country and on this basis, draw general conclusions about the state of IPR regimes in the Asian region, which could play a role in transfer of technologies to mitigate and adapt to climate change.

As far as compatibility with TRIPS is concerned, all the countries dealt with in this paper have fully TRIPS compliant regimes. Even prior to joining TRIPS, countries like India and Malaysia had an elaborate IPR regime modelled on the British system while the Indonesian regime carried influence of the Dutch colonial law. China started reforming its IPR regime from the 1980s onwards and this process gained momentum in the 1990s in anticipation of joining TRIPS. With the exception of China, all the countries are founding members of the WTO and party to the TRIPS. China became a member in 2001. In preparation of and on becoming party to TRIPS, all the countries surveyed have enacted a series of amendments to existing laws and brought into force new laws, so as to be TRIPS compliant. China, India, Indonesia, Malaysia and Thailand are also members of major multilateral intellectual property agreements, namely the Paris Convention, Berne Convention, Geneva Convention, the Patent Cooperation Treaty etc.

Enforcement of intellectual property law has been acknowledged to be a problem by almost all the countries though they have been engaged in substantial efforts to remedy this. This stems in large part from the official recognition, as in the case of China and Malaysia, that the country's aspirations for indigenous innovation are unlikely to be met without a far more credible IPR regime and owing to the interest of the growing number of domestic innovators in protecting their IPRs. A number of authors also point out that there are a lot of myths (as is the case of China) with respect to enforcement and a tendency in the Western world to mis-categorize other issues as IPR issues, in the context of these countries. The paper indicates that most IPR violations have been limited to infringement of copyrights, trademark violations and piracy etc. There is very little data on patent abuse in these countries, which is the key issue in the context of transfer of climate change technologies. Despite efforts, enforcement, however, continues to be a problem owing to low awareness and inadequate administrative capabilities in these countries. Among all the countries surveyed, it is only Thailand which has invoked the compulsory licensing mechanism in the public interest on different types of medicines including for AIDS, heart disease and cancer.

As far as going TRIP Plus is concerned, a country like China had to commit itself to obligations far ahead of the minimum standards required by TRIPS, in its Accession Protocol to the WTO and TRIPS under foreign pressure. A number of these countries could end up accepting TRIPS Plus protection through FTAs (Free Trade Agreements) currently being negotiated. For instance, India could be pressurized to adopt TRIP Plus through the EU-India FTA; the ASEAN-EU FTA could lead to TRIPS Plus commitments for Indonesia while the US-Malaysia FTA could lead to the same for Malaysia. In fact, TRIPS Plus has already been imposed through the Japan-Malaysia FTA, with Japan particularly inclined towards TRIPS Plus protection for plants through patents. Similar apprehensions remain for Thailand which is currently negotiating bilateral FTAs with the US, Japan, and the European Free Trade Association.

On the basis of the above findings, the paper arrives at the conclusion that the contention that weak IPRs in developing countries constitute the biggest barrier to technology transfer seems to be untenable. It however, acknowledges that developing countries still have a long way to go in terms of enforcement and building administrative capabilities as they lack the necessary financial and human resources.

Introduction

There is now significant scientific evidence that climate change is taking place and human actions are among the major drivers for the same. It is also well recognized that technology can play an important role in climate change mitigation and adaptation. While some existing technologies if diffused properly can bring down emission of greenhouse gases, there is potential for development of new technologies that can help further. However, development and diffusion of technologies are quite complex processes with several factors contributing to it. One of them is, of course, the issue of intellectual property rights. Though climate change mitigation is something that needs to be taken as a global challenge and acted upon decisively, it is now also recognized that some degree of climate change is going to take place irrespective of the actions taken by global community now. Moreover, such climate change is going to affect developing countries disproportionately. Thus, adaptation to climate change is essential, particularly for developing countries. Like mitigation, technology can play an important role in adaptation as well. Needless to say, intellectual property rights can have implications for adaptation technologies as well. Effective and timely development, deployment and transfer of technology in developing countries are crucial for a concerted global action towards tackling the challenges posed by climate change. The UNFCCC text recognized parties' commitment to promote and cooperate in technology development, application and diffusion, including transfer. The Bali Action Plan recognized technology development and transfer to support action and mitigation as a specific action point. However, there have been various reasons cited for the lack of technology development as well as transfer in developing countries. The reasons cited by developed and developing countries are often divergent. IPRs remain one of the most contentious issues in this regard in the climate change negotiations. While developing countries have stressed that IPRs need to be addressed as a barrier within the technology transfer discussion, developed countries continue to maintain that IPRs are indispensable to ensure innovation for technology development and deployment. The primary contention of developed countries has been that weak IPRs in developing countries constitute the biggest barrier to technology transfer.

According to Ockwell et.al. (2008), the North-South divide on the relationship between IPRs and clean technology transfer is basically rooted in the existence of two conflicting political discourses of economic development and low carbon technology diffusion that underpin developing and developed countries' respective motivations for engaging in low carbon technology transfer. In their opinion, while developing countries see low carbon technology transfer as a means of enhancing their technological capacity and contributing to their economic development, developed nations' motivation is to achieve rapid and widespread diffusion of these technologies to reduce emissions. They further stress that a positive post-2012 agreement on low carbon technology transfer relies on both developed and developing countries taking time to reflect on their positioning at opposite ends of the development-diffusion polarity, directing efforts towards rectifying the deficiencies in their understanding of processes of development and diffusion and confronting the political and economic power dynamics that continue to play out between north and south in this area.

For advocates of strong IPRs, the major argument is that IPRS would serve to support markets in technology transfer as firms would be reluctant to sell and license their technologies without some

degree of protection. A World Bank study (2007) has come to the conclusion that weak IP regimes in developing countries undermine the transfer of climate friendly technologies by developed country firms who transfer little knowledge along with the product, thus impeding widespread dissemination of the much needed technologies. Barton's study (2007) has also arrived at similar findings that weak IP regimes provide disincentives for foreign investors to transfer their technology. The Stern Review (2006:6) has also come to a similar conclusion that "there are a number of measures that governments can take to create a suitable investment climate for energy investment and the adoption of new technologies, such as ... strengthening intellectual property rights".

It is in the above context that this paper objectively examines the IPR regimes of five Asian countries at different stages of development- China, India, Indonesia, Malaysia and Thailand, in the light of the contention that weak IPRs in developing countries impede technology transfer. The IPR regime in each of these countries is empirically assessed on the basis of three parameters- TRIPS compatibility, enforcement and TRIPS Plus. The section on TRIPS compatibility in the select Asian countries studies the IPR regime in each of these countries in terms of history of IPRs, changes brought about by membership of TRIPS, and membership of major multilateral agreements. The section entitled enforcement issues in the select Asian countries analyses the problems for enforcement of IPR laws in each of these countries and enumerates the steps being taken to remedy the situation. The subsequent section examines whether these countries are going beyond the requirements laid down by TRIPS and adopting TRIPS Plus provisions, through FTAs. The findings under the above sections together contribute towards objectively assessing the 'strength' of the regime in each country and on this basis, draw general conclusions about the state of IPR regimes in the Asian region, which could play a role in transfer of technologies to mitigate and adapt to climate change.

TRIPS compatibility in the select Asian countries

China

IP traditions, particularly trademarks, in China can be traced back to the seventh century A.D. (Shao, 2005). However, copyright and patent laws, according to Crane (2008), never developed in Chinese antiquity, owing to the Chinese philosophy of always putting the community interest over the individual. In the modern times, after the Communist Revolution in 1949, China remained without any sort of IP protection until 1982 (Naigen, 2003). Under pressure from the U.S. and European countries and also seeking to benefit from international trade, China began reforming its intellectual property laws from the 1980s onwards. The Chinese Trademark Law was passed in 1982 followed by the 1985 Administrative Regulations on Technology-Introduction Contracts. The latter required inventors, businesses and foreign investors to register contracts for technology transfers and associated intellectual property rights with the Chinese Ministry of Foreign Trade and Economic Cooperation or relevant local authorities for approval. The Patent Law was also enacted in 1984. Chinese laws of this time, according to Harvey and Morgan (2007), were modeled on the German Civil law IP system and there is still an ongoing collaboration with the German Ministry of Justice.

In the 1990s in anticipation of joining TRIPs (Chengsi, 1998) and subsequently following its joining in 2001, China has made a series of amendments and brought in force a new TRIPs complaint regime

in the context of patent, copyright and trademark protection. It also became a member of the major multilateral intellectual property agreements, namely the Paris Convention, Berne Convention, Geneva Convention, the Patent Cooperation Treaty and the UPOV (International Union for the Protection of New Plant Varieties of Plants). The Patent Law of 1984 was amended first in 1992 in anticipation of joining TRIPS and further in 2000-2001. Closely modeled on the U.S. patent regime (Crane, 2008), the patentability criteria for ‘inventions-creations’ (including patents, utility models and designs) under the Patent Law of the People’s Republic of China, 2001 are novelty, usefulness and non-obviousness. The definition of novelty is, however, slightly different in that while the U.S. definition only precludes patentability if the invention was known, used, sold or described in the U.S. or patented or described in a printed publication elsewhere; in China, novelty means that ‘no identical invention or utility model has been disclosed in China or anywhere in the world or made known to the public in the country before filling’ (Article 22). A number of restrictions/ limitations, compatible with TRIPS, exist in the Chinese patent law, whereby an invention-creation cannot be patented if it is contrary to the laws of the State or social morality or that is detrimental to public interest (Article 5). Under Articles 14 and 15, the state is empowered to take a decision to ‘spread and apply’ and allow a designated entity to exploit a patented invention belonging to any state owned enterprise or institution or a Chinese individual or an entity under collective ownership, if it is of great significance to the interest of the State or the public interest. The exploiting entity shall, according to the regulations of the State, pay a fee for exploitation to the patentee. The Patent Law of the People’s Republic of China also allows a compulsory license under Article 48 to exploit a patent in cases of national emergency or when any extraordinary state of affairs occurs, or where the public interest so requires, which will determine the scope and duration of the exploitation. In case of infringement of a patent, under the Chinese law, the patentee has the option to institute legal proceedings in the People’s Court in accordance with the Civil Procedure Code or through the administrative process in accordance with the Administrative Procedure law (Article 57).

In addition to the patent law, substantial amendments also came about in the copyright and trade mark law in the wake of TRIPS. China also enacted the Regulations for the Protection of New Plant Varieties in 1999, which were subject to revisions in 2000. Even prior to joining TRIPS, China had in 1993 adopted an unfair competition law which gave protection to trade secrets.

India

The Indian IPR regime predates independence in 1947, with some of the key enactments going back to the period of British rule and closely modeled on the relevant British laws. The earliest legislation in this context are the Act VI of 1856 on Protection of Inventions based on British Patent Law of 1852 which provided exclusive privileges to inventors for 14 years, followed by the Patents and Designs Protection Act, 1872; the Protection of Inventions Act, 1883. In 1911, the Patents and Designs Act was enacted to replace all the previous legislation pertaining to patents and designs. It brought patent administration under the management of the Controller of Patents for the first time. Post-independence, need was felt for a new patent law taking into account the changed political economy of the country. Following the recommendations of the committees instituted specially for the purpose such as that under the chairmanship of Justice Tek Chand in 1949 and the Ayyangar

Committee Report of 1959, the Patents Act of 1970 was passed. Designs continued to be protected as per the 1911 Act. Under the Patents Act of 1970, there was no product patent for pharmaceuticals, food and chemical based products. These industrial sectors were covered by process patent only. The term of patent for process patents in pharmaceuticals was 7 years from the date of application of the patent and 5 years from the date of grant of patents, whereas for all other matters the patent was for a fixed period of 14 years. Similarly, India had legislation to protect trademarks during the British rule, which post- independence, was consolidated into the Trade and Merchandise Act of 1958. Similarly, the pre-independence Copyright Act of 1914 was replaced by the Copyright Act of 1957, which continues to be in force.

India became a party to the TRIPS Agreement in April, 1994 and following this, a thorough revision of the IPR regime, particularly the patent regime has taken place along with the enactment of new legislation to protect different kinds of IP. The Patents Act of 1970 providing for process patents alone in pharmaceuticals, food and chemical based products was in direct contravention of Article 27 of TRIPS. As per this Article, member countries had to provide patents for any invention, whether product or process, in all fields of technology. Three sets of amendments were made to the Indian Patent Act-in 1999, 2002 and 2005, in order to achieve TRIPS compliance before 2005 (the transition period granted to India for introducing product patent protection). The Patents (Amendment) Act of 2005 repealed section 5(1) of the old Act, which provided for process patents alone in pharmaceuticals, food and chemical based products and went about making a series of amendments. The definition of ‘inventive step’ was amended in order to raise the standard for inventiveness. Thus, under the new amendment, for patent eligibility, an invention must involve an inventive step and technical advances as compared to existing knowledge, or it must have economic significance, or both. ‘Economic significance’ is neither a classical patentability criterion nor does it have anything to do with inventions’ (Ram, 2006). The term for both product as well as process patent is now 20 years. With respect to exceptions to patentability, the effect of section 3 (d) is that patents would not be available on new forms of a known substance, unless it differs significantly in ‘efficacy, a measure designed to prevent ‘ever greening’ or the practice of extending the term of protection of a patent about to expire, by making minor changes or improvements. Under Section 84 of the Patents (Amendment) Act, 2005, compulsory license may be granted on a patent three years after the date of grant of a patent on the following grounds:

- (a) that the reasonable requirements of the public with respect to the patented invention have not been satisfied;
- (b) that the patented invention is not available to the public at a reasonably affordable price, or
- (c) that the patented invention is not worked in the territory of India.

The 2005 amendment added two other grounds for obtaining compulsory license. One of them, aimed at aiding generic manufacturers, provides that in case of those mailbox applications that result in the grant of a patent, an automatic compulsory license would issue to those generic companies that have made a ‘significant investment’ and were ‘producing and marketing’ a drug covered by the mailbox application prior to 2005. The second ground paves the way for compulsory licenses to enable export

to countries with inadequate manufacturing capabilities. The new Patent Act also has other notable provisions which help serve the public good such as government use (Chapter XVII) and a strong 'Bolar' exception that facilitates generic manufacturers to commence production of a patented drug in limited quantities during the period of the patent in order to collect data to be submitted to a drug approval authority.

Observers like Basheer (2005) point out that the Indian Patent Act, enacted to honour TRIPS commitments, attempts to balance out competing interests of a variety of stakeholders, including domestic generic medicine producers, foreign multinational pharmaceutical companies and civil society groups concerned with access to medicines. He opines that although this dexterous maneuvering around competing interests deserves praise, the net result of such a compromise has been a lack of clarity in the law.

Like the Patent law, the old trademark law in India has been replaced by a new Trademarks Act, 1999 and the old legislation on designs has been replaced by the Designs Act, 2000. The Copyright Act of 1957 has been amended a number of times with three amendments post TRIPS in 1992, 1994 and 1999. India has also enacted the Geographical Indications of Goods (Registration and Protection) Act, 1999, the Semi-Conductor Integrated Circuit Lay Out-Design Act, 2000 and the Protection of Plant Varieties and Farmers' Rights Act, 2001 in order to protect geographical indications and plant varieties, as mandated by TRIPS.

Indonesia

Indonesia has inherited its legal system from the Netherlands. But as of now, the Indonesian legal system is a mix of indigenous customs, some remnants of Dutch colonial law and the new laws enacted since independence. As far as intellectual property is concerned, some treaties have been signed by The Netherlands on behalf of Indonesia, such as the Berne Convention which Indonesia has denounced on 19th February 1959 (effective date 19th February 1960) but to which Indonesia has reapplied as in independent State at a later date. Indonesia has then started adopting its own set of laws dealing with Intellectual Property issues, from the 1961 law on trademarks onwards following with more laws, like the 1982 Copyright Law, 1989 Patent Law all of which were significantly influenced by a Civil Law approach.

In Indonesia, patents are governed by the Law No. 14 year 2001 dealing with patents effective from August 1, 2001. Patent applicants have to go through standard procedures like filing, formality examination, publication and opposition if any, and substantive examination before a patent is granted. The Patent Office conducts its own search and examination but also uses search and examination reports issued in other jurisdictions such as US, UK, Australia, Japan as well as the regional European Patent Office. Under the Indonesian law, an invention is patentable if it is novel, contains an inventive step and is capable of industrial application. An invention is deemed to be novel, if at the time of filing of the patent application, the invention is not identical to or part of any previous invention, meaning an invention which at the time of or prior to its date of filing the

application or effective date of priority rights has been disclosed in or outside Indonesia in a way that allows a qualified person to implement the invention. The law provide for a grace period of six months for filing a patent if the knowledge concerned has been subject to prior disclosure or sale for purposes like experiments, R&D and disclosure to learned community. Two kinds of patents are granted in Indonesia. The first type is a full patent, which must fulfill all the requirements set out in the law, granted for a period of twenty years commencing from the filing date. This is also valid for PCT and Paris Convention applications. In Indonesia, there is also the concept of simple patent for which the requirement regarding novelty extends only to inventions used within Indonesia and granted for a non- renewable period of ten years. Simple Patent does not require inventiveness and maximum of one invention is allowable.

Indonesia joined the Paris Convention for the Protection of Intellectual Property in 1979 and in the same year it also joined the Convention establishing the World Intellectual Property Organization. Post WTO, it joined the Berne Convention for the Protection of Literary and Artistic Works in 1997. In 1997, it also joined the Patent Cooperation Treaty (PCT), the Trademark Law Treaty and the WIPO Copyright Treaty. It submitted the instrument of ratification for WIPO Performances and Phonograms Treaty (WPPT) on 15th November 2004, which entered into force on 15th February 2005.

The reform era which started in 1998 in Indonesia coincided with the post-ratification of the WTO Agreement in 1994. Hence, the need for Indonesia to adjust its commitments as undertaken in the WTO Agreement appears to have gained momentum in the form of the legal reform. In this reform era, Indonesia adopted some new IP laws to bring its regime in conformity with its TRIPS commitment, namely, Law No. 30 of 2000 on Trade Secrets; Law No. 31 of 2000 on Industrial Design; and Law No. 32 of 2000 on Integrated Circuits Design. It also had to change its existing IP Laws. Thus it enacted Law No. 14 of 2001 on Patents, which replaced Law No. 6 of 1989 as amended by Law No. 13 of 1997; Law No. 15 of 2001 on Trademarks, which replaces Law No. 19 of 1992 as amended by Law of 1997 and Law No 19 of 2001 on Copyright which replaced Law No. 7 of 1987 as amended by Law No. 12 of 1997. It also adopted the Government Regulation No.2 regarding Consultants of Intellectual Property Rights 2005 and the Government Regulation No.51 on Geographical Indications 2007. The list becomes even longer if we consider the ratification of various IPR conventions such as the Berne Convention, PCT, Trademark Law Treaty, WIPO Copyright Treaty and WIPO Performances and Phonograms Treaty which were done to bring its IPR regime at par with TRIPS commitments.

Malaysia

Malaysia, comprising of territories which were earlier part of the British colonial empire, has an intellectual property regime closely modeled on the British system. It is heavily influenced by the adoption of the Common Law system as the base of its legal system, but adjusted to the unique Malaysian context. According to the Report of the EBO's Regional IPR Protection Project (2008), the reliance on common law has had two practical consequences on the IP regime in Malaysia: basic laws on IP are inspired to a large extent by their matching English correspondent set of regulations and that precedents from other Common Law courts can be relied upon by Malaysian judges.

Malaysia has been according protection to IPRs through a number of laws and regulations, even prior to becoming a member of the TRIPS in 1995. Protection of patents has been ensured through the Patents Act of 1983. Similarly, Malaysia had the Trademarks Act, 1976; the Copyright Act, 1987 and legislation to protect designs such as the United Kingdom Design (Protection) Act 1949 of West Malaysia, the United Kingdom Designs (Protection) Ordinance Chapter 152 of Sabah and the Designs (United Kingdom) Ordinance Chapter 59 of Sarawak (Economic Report of Malaysia 2001-02).

Malaysia is a founding member of the WTO and became a signatory to the TRIPS Agreement in 1995. It has also acceded to a number of international treaties and conventions on IP namely WIPO in 1988, the Paris Convention in 1988, the Berne Convention in 1990, the Patent Cooperation Treaty in 2006, the Nice Agreement Concerning the International Classification of Goods and Services for the Purposes of the Registration of Marks in 2007 etc. To comply with the TRIPS Agreement, a number of changes were effected through amendments to the Patent Act of 1983 which was amended in 1986, 1993, 2000 and 2006. Under this Act, an application for a patent can be filed in Malaysia and upon registration, protection is provided for its exploitation in the country. An invention is patentable if it is new, involves an inventive step and is industrially applicable. The definition of prior art is considerably broad including ‘everything disclosed to the public, anywhere in the world, by written publication, by oral disclosure, by use or in any other way’ (section 14 (2)(a)). Besides patent, a utility innovation certificate is granted for an innovation ‘which creates a new product or process, or any new improvement of a known product or process...’ (Section 17). The latter does not have to satisfy the more stringent requirement of inventiveness required by a patent. The period of patent protection was extended to 20 years, as mandated by TRIPS, from the date of filing of an application and subject to yearly renewal from the date of grant. A utility innovation is protected for 10 years from the date of filing of an application and may be extended for another 5 years, subject to use. Compulsory license, under section 49 of the Act, is granted under certain circumstances such as when there is no production without any legitimate reason, or sold at unreasonably high prices and does not meet public demand without any legitimate reason. Under section 84, the government has the right to exploit a patent under circumstances of national emergency, public interest or where the patentee or the licensee have been anti-competitive in their exploitation. In fact, Malaysia was the first country to implement compulsory licensing in 2003 since the Doha Declaration on the TRIPS Agreement and Public Health (2001) to allow three cheaper generic medicines to be imported from India to treat AIDS patients (Khor, 2008). Following Malaysia’s example, other countries like Indonesia, Thailand, Zimbabwe, Ghana, and Brazil have issued compulsory licenses.

Besides the Patents Act, in the wake of TRIPS, substantial amendments were effected in the copyright and trademark legislation. The previous legislation for protecting designs were replaced by the Industrial Designs Act of 1996 and amended again in 2000. New legislation were enacted to protect other kinds of IP, as required by TRIPS, namely the Geographical Indications Act, 2000, Lay-out Designs of Integrated Circuits Act, 2000 and Optical Disks Act, 2000 and the Protection of New Plant Varieties Act, 2004.

Also, realizing the importance of IPRs to ‘economic growth’ and to ‘enhance Malaysia’s long-term competitiveness in the knowledge economy’, Malaysia has launched the National Intellectual Property Policy in 2007 as well as an Intellectual Property Commercialisation Policy for R&D Projects funded by the Government of Malaysia, 2009. In a statement made by the Prime Minister in the context of the national IP policy, the aim of this policy is to strengthen the IP landscape ‘to attract foreign investors to Malaysia as well as to encourage speedier and more effective technology transfers, which will enable local manufacturers to reap full benefits from research and innovations and to increase ‘invention activities among the younger generation’. Malaysia has also corporatised the erstwhile government IP Division responsible for administering IP in Malaysia which has been reconstituted as the Intellectual Property Corporation of Malaysia in 2003, with the stated mission of providing for a strong legal infrastructure and effective administration regime.

Thailand

Thailand has been at the centre of global debates and controversies on intellectual property rights for quite some time. While alleged violations of trademarks and copyrights are not unique to Thailand as many other developing countries particularly the other south east Asian countries face similar allegations, it has been in news for issuing a series of compulsory licenses on different types of medicines including for AIDS, heart disease and cancer.

The legal framework for the protection of trade marks in Thailand is governed by the Trademark Act, B.E. 2534 (1991), as amended by the Trademark Act (No.2) B.E. 2543 (2000). However, as far as enforcement of trademark rights is concerned, the Penal Code and the Civil and Commercial Codes are also relevant. The Copyright Act governs the protection of copyrighted works in Thailand which provides for criminal penalties, including fines and imprisonment for infringement. The Copyright Act provides for confiscation of infringing goods and also provides that 50% of the fines levied by the Court against the infringer will be payable to the copyright owner. Unlike the Copyright Act which provides for allocation of fines imposed against copyright infringers, all fines imposed under a criminal trademark action accrue to the government. A crime involving trademark infringement is considered a crime against the state, while copyright infringement is considered to be a crime of a more personal nature against an “aggrieved party.” Moreover, a trademark owner may not “settle” with the offender after a complaint is filed and a raid is taken, while a similar action is allowed in a copyright violation.

Thai Patent Act enables the potential owners of patents file for patent protection for inventions, designs and petty patents. The patentability criteria are novelty, inventive step and industrial applicability. Micro-organisms occurring in nature, their components, animals, plants and/or their extracts are not patentable. Patent applicants have to go through standard procedures like filing, formality examination, publication and opposition if any, and substantive examination before a patent is granted. The law provides for a grace period 12 months for filing a patent application for prior disclosure or sale of knowledge to be patented. Application for restoration of lapsed patent can be filed within 120 days from the date of lapse. The Patent Office conducts its own search and

examination but also uses search and examination reports issued in other jurisdictions such as US, UK, Australia, Japan as well as the regional European Patent Office. Term of patent is for 20 years.

Thailand is a founding member of the WTO and hence, a party to the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). It has also signed the Paris Convention (effective from August 1, 2008) and the Patent Cooperation Treaty (PCT) (effective from December 24, 2009). It had to make several legal and regulatory changes to bring its IP regime at par with the TRIPS commitments, which include the Copyright Act B.E. 2537; GI Ministerial Regulation B.E. 2547; GI Protection Act B.E. 2546; Manufacture of Optical Disc Act B.E. 2548; Patent Act B.E. 2522; Protection of Layout-Designs of Integrated Circuits Act B.E. 2543; and Trademark Act B.E. 2534. It is, however, worth noting that the Thai patent law of 1979 did not recognize patents for pharmaceutical products. But this had to be changed even before TRIPS was signed, due to tremendous US pressure and a threat of trade sanction (WHO 2004).

Table 1: Intellectual property rights regime in select five Asian countries

	China	India	Indonesia	Malaysia	Thailand
History of IPRs	<p>Trademark protection dates to 7th century A.D.</p> <p>Enacted trademark law in 1984 and patent law in 1984, modeled on the German civil law IP system</p>	<p>Key enactments dates back to British rule (pre 1947)</p> <p>The Patents and Designs Protection Act, 1872; the Protection of Inventions Act, 1883; the Patents and Designs Act, 1911, the Patents Act of 1970, the Trade and Merchandise Act of 1958; Copyright Act of 1914, 1957</p>	<p>Inherited its legal system from the Netherlands.</p> <p>1961 law on trademarks;</p> <p>1982 Copyright Law, 1989 Patent Law</p>	<p>Closely modeled on the British common law system.</p> <p>The Patents Act of 1983; the Trademarks Act, 1976; the Copyright Act, 1987; the United Kingdom Design (Protection) Act 1949 of West Malaysia, United Kingdom Designs (Protection) Ordinance Chapter 152 of Sabah; the Designs</p>	<p>Trademark Act, B.E. 2534 (1991), Thai patent law of 1979;</p>

	China	India	Indonesia	Malaysia	Thailand
				(United Kingdom) Ordinance Chapter 59 of Sarawak	
Changes brought about by TRIPS	Patent Law of 1984 amended in 1992, 2000-01 in line with TRIPS and modeled on U.S. patent law. Substantial amendments in copyright and trademark law; Regulations for the Protection of New Plant Varieties in 1999	Three sets of amendments to the Patent Act- in 1999, 2002 and 2005 Amendments to copyright Act in in 1992, 1994 and 1999 New legislation- Trademarks Act, 1999; the Geographical Indications of Goods (Registration and Protection) Act, 1999, the Semi-Conductor Integrated Circuit Lay Out-Design Act, 2000; the Protection of Plant Varieties and Farmers' Rights Act, 2001	Amendments to existing legislation- Law No. 14 of 2001 on Patents, Law No. 15 of 2001 on Trademarks; Law No 19 of 2001 on Copyright New laws- Law No. 30 of 2000 on Trade Secrets; Law No. 31 of 2000 on Industrial Design; Law No. 32 of 2000 on Integrated Circuits Design, Government Regulation No.2 regarding Consultants of Intellectual Property Rights 2005; the Government Regulation No.51 on Geographical Indications 2007.	Amendments to the Patent Act of 1983 in 1986, 1993, 2000 and 2006. New legislation- the Industrial Designs Act of 1996 (amended in 2000); the Geographical Indications Act, 2000; Lay-out Designs of Integrated Circuits Act, 2000; Optical Disks Act, 2000; the Protection of New Plant Varieties Act, 2004.	Changes to bring IP regime at par with commitments- Copyright Act B.E. 2537; GI Ministerial Regulation B.E. 2547; GI Protection Act B.E. 2546; Manufacture of Optical Disc Act B.E. 2548; Patent Act B.E. 2522 of 1999; Protection of Layout-Designs of Integrated Circuits Act B.E. 2543; Trademark Act B.E. 2534 consolidated as of 2000.
Member of multilateral	Paris Convention,	Paris Convention,	Berne Convention,	Berne Convention,	Berne Convention,

	China	India	Indonesia	Malaysia	Thailand
agreements on IPRs	Berne Convention, Geneva Convention, the Patent Cooperation Treaty (PCT) and the UPOV (International Union for the Protection of New Plant Varieties of Plants)	Berne Convention, Budapest Treaty, Nairobi Treaty, Patent Cooperation Treaty, Phonograms Convention, Rome Convention, Washington Treaty	Paris Convention PCT, Trademark Law Treaty, Nairobi Treaty, WIPO Copyright Treaty, WIPO Performances and Phonograms Treaty	Paris Convention PCT, Nice Agreement, Vienna Agreement, WIPO Copyright Treaty, WIPO Performances and Phonograms Treaty	Paris Convention PCT

Enforcement issues in the select Asian countries

Enforcement has comparatively been a weak area in the Asian region though efforts have been ongoing to remedy the situation. Coming to the case of China, enforcement has been the subject of much controversy, with the country continuing to figure prominently in the Priority Watch List of the 2010 Special 301 Report brought out by the U.S. government. While enforcement of IP remains a major issue, a number of observers, including those from the Western world point out that it is equally important that the ‘IPR in China’ debate must be set in context with many non-IPR concerns about the ability of Western companies to compete with Chinese ones or fears about the outsourcing of production to take advantage of cheap labour being miscategorised as IPR issues (Harvey and Morgan, op.cit.). In their view, a number of unfounded myths exist about IPRs in China; firstly that Chinese IP laws are unsophisticated (which they point out is not the case); secondly that IP rights in China are of poor quality (which they point is not generally true with patents issued to foreigners being of high quality examined by the best examiners in the country). The myth that Chinese IP laws and poor enforcement favour domestic interests is also not true as in the developed areas of China, the court system is of good quality, the cost of IP litigation is low by international standards and the time fast, and also that the government funded administrative system remains a cheap and quick option.

Nevertheless, as Harvey and Morgan (ibid.) point out, despite the advances, a number of challenges and problems continue to exist with respect to implementation of IPR laws in China, such as a continuing backlog of patent applications, the lack of qualified patent examiners and high prevalence of counterfeiting. Interestingly, we did not find much data on the question whether patent abuse is as serious an issue as counterfeiting in China. Massey (2006), Yu (2007) and Crane (2008) observe that another major problem for Chinese enforcement of IPR law arises from the fact that much of the reforms have taken place only at the centre and yet to have an impact at the provincial and local

levels where a high level of local protectionism exists. As a result, in this heavily decentralized country, there are considerable differences between IPR protection at the national, provincial and local levels which can be aptly described by the Chinese proverb ‘the mountains are high and the Emperor is far away’(Massey, 2006). There are considerable disparities in the dealings of regional courts and in order to counter this, the Chinese government has encouraged the use of the federal Supreme Court by foreign companies.

Despite the bottlenecks, China is well on its way to revamp its IPR regime and making efforts to deal with problems of enforcement. This change stems in large part from the official recognition that China’s aspirations for indigenous innovation are unlikely to be met without a far more credible IPR regime and owing to interest of the growing number of Chinese innovators in protecting their IPRs.

In India, IPR enforcement is subject to the provisions of the Code of Civil Procedure, the Indian Penal Code, and the Civil and Criminal Rules of Practice. The Code of Civil Procedure provides for civil remedies and enforcement through civil courts, while penal remedies are provided in the Indian Penal code. India adheres to the common law tradition with judicial precedents of the Supreme Court being binding on the lower judiciary. Statutory enforcement mechanisms are provided in the IP laws, governing patents, trademarks, copyrights etc. Under the Patent (Amendment) Act of 2005, the patentee may file an action for patent infringement in either a District Court or a High Court. The relief that a court may grant in a patent infringement suit, would be either damages or account of profits. Post TRIPS, in 2002, a significant amendment was introduced with respect to enforcement of patents in the form of section 104-A. This section effects a reversal of the burden of proof to the defendant in case of process patents, which is believed to lead to a higher rate of success for the patent holder and acts as a deterrent to potential infringers (Venkataramani, 2007).

Despite these attempts at reform, enforcement of patents in India is believed to be constrained by lack of awareness about patent basics in the judiciary, no prescribed time frame for disposal of cases, non-availability of criminal remedy for infringement of patents as in the case of copyright violation etc. (ibid.). Despite this, Indian courts in their decisions have shown remarkable dexterity in reconciling competing needs, with a key focus on safeguarding the public interest and ensuring access in a number of high profile cases such as the Novartis decision (Novartis AG v. Union of India and others, W.P. No. 24754 of 2006 and W.P. No. 24759 of 2006).

India continues to be on the Priority Watch List of the United States’s Special 301 Report. While it acknowledges that India has made incremental improvements on enforcement, and its IP offices continued to pursue promising modernization efforts, the Report criticizes India for continuing to have section 3(d) or the ‘efficacy test’, absence of provisions to protect data exclusivity and for the lack of a criminal enforcement regime. Indian observers point out that this Report is considerably flawed and a way of enforcing TRIPS plus on India to the detriment of the national interest and hence, should be refused acknowledgement by the Indian government (Prakash, 2010).

Coming to the case of Indonesia, rather than relying on precedents in the same way as in the common law system as the ultimate source of law, the country restricts the power vested in the judges to the role of interpreting the Codes, laws and regulations with respect to a specific situation, which is

typical of a civil law system. It does not have specialized courts for IP laws. But most IP laws come under the jurisdiction of the Commercial Court (within the General Court). Jurisdiction of new Law No. 30, 2000 of Trade Secret is still in the jurisdiction of the General Court. Alternative dispute resolution mechanisms like mediation, arbitration and reconciliation are available.

Developed countries and multinational companies have expressed concerns about Indonesia's lack of enforcement of IP obligations under IPR and TRIPS. However, it is also argued that most ordinary Indonesian citizens do not deliberately violate or resist IPR, but, rather, are not fully aware of what IPRs represent. Such violations happen mostly in the areas of copyright and trademark but not patents which cannot be infringed upon by ordinary people. Lack of enforcement may also be a result of inadequate administrative capabilities. In fact, there have been cases where the staff at the Directorate General for Intellectual Property (DGIP) has approved the registration of well known international labels by domestic entities (Sardjono 2007).

In the case of Malaysia, enforcement of IP has always been a controversial area, with the country figuring continuously in the Priority Watch List of the Special 301 Reports of earlier years for its 'inability' to check counterfeiting and piracy. However, there has been substantial efforts to make improvement, which the Special 301 Report for 2010 acknowledges and has now put it on the Watch List (a lesser 'offensive' category than the Priority Watch List). Most remarkable in this context is the setting up of a specialized IP Court in 2007 consisting of 15 Sessions Courts in every state to handle IP cases and 6 High Courts in the 6 states with the highest number of IP infringement cases, namely Kuala Lumpur, Selangor, Johor, Perak, Sabah and Sarawak (Kadir, 2008). According to Kadir (ibid.), prior to its establishment, IP disputes in Malaysia were brought before the criminal and civil courts presided over by judges who were not very knowledgeable on IP, leading to inefficient and slow proceedings, a severe backlog as well as not very sound decisions. The special IP court is expected to address this problem, though it is still very early days to judge its effectiveness.

Both civil and criminal action may be taken against infringers of a Thai registered patent. Thailand has a specialized IP court, namely Central Intellectual Property & International Trade Court. It also has the provision for alternative dispute settlement in case of civil cases related to intellectual property issues but not for criminal cases.

The Thai Department of Intellectual Property (DIP) has in recent years taken several initiatives on public education designed to raise awareness on IPR issues and discourage people from trading in pirated and counterfeit goods. However, it is difficult to stop supply of counterfeit products because of low level of awareness, high rate of unemployment and availability of cheap labour. Thailand is also known for skilled workers able to manufacture high quality imitations that are often quite difficult to detect (Kelly and Chuenjaipanich 2002).

Between November 2006 and January 2007, Thailand issued compulsory licenses for two AIDS drugs: efavirnz and the combination of lopinavir+ritonavir and one antihypertension drug (clopidogrel). The pharmaceutical industry vehemently objected to these compulsory licenses, and sought the US government's assistance in the matter. Though USTR had been careful not to claim that the Thai government had violated the TRIPS Agreement, it did place Thailand on the 301

Report's Priority Watch List - a means of censure in the U.S. Trade Representative's 2010 Special 301 Report. It may be noted that the U.S.-based manufacturing association PhRMA requested that Thailand be designated as a Priority Foreign Country (Huang 2010). In 2008, the Thailand Ministry of Public Health also announced compulsory licenses for three cancer drugs that include Novartis' breast cancer drug letrozole, Sanofi-Aventis' breast and lung cancer drug docetaxel and Roche's lung cancer drug erlotinib. The Ministry also intended to announce a compulsory licence on Novartis's leukemia drug imatinib as well, but changed the decision because Novartis agreed to provide the drug for free to patients under the universal healthcare scheme. Dr Mongkol, the then Minister of Public Health signed four ministerial announcements on January 4, 2008 just before the end of his term. A plan by the Public Health Minister Chaiya Sasomsab to review the policy on compulsory licensing (CL) for four cancer drugs hit a major obstacle after officials from three ministries found that it cannot be revoked. Although Mr. Chaiya could not change the policy, it was expected that government might take no further action under CL to bypass the patents.

The issue has also raised legal concerns as some people argued that such actions violated Thailand's own laws. Section 50 sets out the process for negotiations between the parties and the procedures which must be followed before a compulsory licence could be issued by the Director-General of the Department of Intellectual Property to the applicant. Section 50 specifically states that: "When the royalty, conditions for exploitation, and restrictions have been prescribed by the Director-General, he shall issue a licensing certificate to the applicant." It has been argued that in seeking to impose compulsory licences on various patented drugs, the Ministry of Public Health has not taken the appropriate steps required by law. In addition, section 50 also provides for an appeals procedure, which would allow patent owners an opportunity to subject the decision regarding compulsory licences to judicial review (Rungpry and Kelly 2008).

Are Asian countries being coerced to go the TRIP Plus way?

While the WTO-TRIPs introduced the principle of minimum intellectual property standards, TRIPs Plus refers to both those activities aimed at increasing the level of protection for right holders beyond that which is given in the TRIPs Agreement and those measures aimed at reducing the scope or effectiveness of limitations on rights and exceptions (Musungu and Dutfield, 2003). Such rules and practices have the effect of reducing the ability of developing countries to protect the public interest and may be adopted at the multilateral, plurilateral, regional and/ or national level (ibid.).

China has committed itself to TRIPs Plus obligations going quite ahead of the minimum standards to protect IPRs in its accession to the World Trade Organisation and the TRIPs. In fact, the China Accession Protocol in a first of its kind initiated the idea of TRIPs Plus obligations prior to which very few WTO Plus obligations existed for the several WTO acceding Members (Qin, 2003). According to Qin, the China Accession Protocol, unlike any other WTO protocol of accession, is not a standardized document but contains a large number of special provisions that elaborate, expand, modify or deviate from the existing WTO agreements. This has been to the effect that China on acceding to TRIPs has had to adhere to much higher standards than required by other WTO members. Wu (2007) points out that the China Accession Protocol has highly elevated standards with respect to the TRIPs requirements for transparency, uniform administration and independent judicial

review. The transparency provision has been highly strengthened including extension of coverage, publication before implementation with a right to comment, enforcement only of those published laws and regulations, entitlement of individuals and enterprises to request for relevant information etc. With respect to the requirement for independent judicial review, while other members are given the leeway to ‘maintain, or institute as soon as practicable, judicial, arbitral or administrative tribunals or procedures’ (GATT X: 3(b)), China is obliged to ‘establish, or designate, and maintain tribunals, contact points and procedures’. Again, while other members are not required to initiate a new review mechanism inconsistent with their constitutional structure or the nature of their legal systems (Article VI: 2 (b) of GATS), China is mandated under section 2 (D)(i) of the Protocol to set up tribunals independent of the agency entrusted with administrative enforcement’. In the context of uniform administration, the Protocol requires China to apply and administer all its laws, regulations and other measures in a uniform, impartial and reasonable manner. Under Article 2(A), individuals and enterprises can bring to the notice of the central government instances of non-uniform application.

According to Wu (2007), the effect of these elevated standards on IPRs in China has been that changes have come about in both legislative efforts and judicial practices. Case law indicates that there have been remarkable changes in terms of procedural requirements such as right to be heard and right to defend, examination of evidence, and more effective administrative review. Wu further notes that Chinese domestic courts are acting cautiously and sensitively while responding to claims of foreign IPR holders.

Along with the multilateral approach, TRIPS Plus obligations have also been sought to be imposed upon developing countries through bilateral, plurilateral or regional approaches. Free Trade Agreements (FTAs) and Regional Trade Agreements (RTAs) have been one way of accomplishing this, with some of the most recent ones containing certain provisions or a chapter on IPRs. China has been at the forefront in voicing concerns about this ‘TRIPS plus enforcement trend’ which it points out could result in problems such as potential legal conflicts and unpredictability, possible distortion of legitimate trade, upsetting the balance to the detriment of developing countries and forcing them to allocate limited public resource to enforce private IP rights which could hinder their ability to deal with other social problems (South Bulletin, 2010).

In the context of India, Gopakumar and Amin (2005) opine that India embarked on a ‘TRIPS plus’ regime when the government issued an ordinance on December 26, 2004 to amend the Patents Act of 1970. While technically, only one further amendment was required under TRIPS, that is, the introduction of product patents for pharmaceutical inventions, the ordinance carried out a further 74 amendments to the Patents Act, thus taking it much beyond the TRIPS requirements (ibid.). Owing to severe criticism, the government was forced to withdraw or re-draft several of the amendments, thus resulting in the Patents Amendment Act of 2005, which sought to balance a number of competing interests. Nevertheless, they further opine that some of the key amendments are riddled with loopholes and ambiguities and have not made much use of flexibilities under TRIPS to safeguard the public interest, particularly with respect to pharmaceutical products.

With respect to TRIPS plus through FTAs, India’s position as articulated at the TRIPS Council in 2010 has been to the effect that the surge of TRIPS Plus initiatives in multilateral fora, RTAs and

plurilateral initiatives like the Anti Counterfeiting Trade Agreement (ACTA) are 'likely to disturb the balance of rights and obligations enshrined in the TRIPS Agreement and have the potential to constrain the flexibilities and policy space provided by it to developing country members like India particularly in areas such as public health, transfer of technology, socio-economic development, promotion of innovation and access to knowledge'. TRIPS Plus could also potentially negate decisions taken multilaterally such as the Doha Declaration on Public Health in WTO and the Development Agenda in WIPO. India could also end up accepting TRIPS Plus protection through FTAs such as EU-India FTA, unless India is able to negotiate and address the IPR issues in a manner consistent with its own interests. The negotiating texts so far known to indicate that India is resisting many aspects of the EU demands of higher IPR standards such as extension of patent term and data exclusivity (Correa, 2009). There is also pressure on India from the United States, as evident from the Special 301 Report of 2010 to protect undisclosed test or other data generated to obtain marketing approval for pharmaceutical and agricultural chemical products, which is a TRIPS Plus measure.

Indonesia is yet to sign a trade agreement with TRIPS plus provisions. There have been talks of an FTA with the US but it did not progress much. An FTA between ASEAN and the EU, however, is a possibility which might bring some TRIPS plus commitments. Indonesia has already taken a step towards this. It signed a Partnership and Cooperation Agreement (PCA) with the EU in 2009. The agreement covers diverse areas of cooperation such as trade, investment, human rights, climate change, migration, as well as efforts to address organised crime and communicable diseases. The PCA with Indonesia is the first such agreement signed by the EU with an Asian country (Chandra 2009). The PCA is not a free-trade agreement (FTA). While it enhances cooperation in various trade matters, it does not include specific trade concessions by either party. However it talks about strengthening IPR regime as well which, some observers believe, might be leveraged to restrict the use of TRIPS flexibilities.

Coming to the case of Malaysia, the country could be on its way to accepting TRIPS Plus standards, as required by certain FTAs it is trying to negotiate. Though Malaysia has a number of FTAs with countries like Japan, New Zealand, Pakistan, Chile and in the process of negotiations with Turkey, India, Australia, the negotiations with the United States has been the most contentious in the context of IP. This is because of the fact that the U.S. has used FTAs generally as a tool to introduce tighter patent provisions in developing countries much beyond what is stipulated by TRIPS (Smith, Correa and Oh, 2009). The US-Malaysia FTA is being negotiated following the signing of the Trade Investment Framework Agreement between the United States and Malaysia in 2004. Strongly opposed by the Malaysian public namely health activists, human rights groups, consumers and people living with HIV-AIDS, it is apprehended that this FTA would result in very stringent TRIPS Plus standards in the form of greater exclusivity rights to drug originator companies and a weakening or elimination of the compulsory license provision (Galantucci, 2007). He further observes that 'as the U.S. is Malaysia's largest trading partner and its largest foreign investor, the harsh reality of the bilateral negotiation forum is that the U.S.'s bargaining power may prevent Malaysia from extracting even those minimal concessions that are necessary for it to deal with public health crises' (ibid.). TRIPS Plus has also been imposed through the Japan-Malaysia FTA signed in 2006, with the Japanese particularly inclined towards TRIPS Plus protection for plants through patents, requiring

commitment to provide adequate protection for as many genera or species as attainable within the shortest possible time period (Article 123 of the Agreement).

Thailand is yet to take any TRIPS plus obligation. However, its negotiation with the US for a bilateral FTA has been quite controversial as it has been speculated that such an FTA will include TRIPS plus provisions. Several NGOs are concerned that the FTAs will result in “TRIPS-plus” obligations, or greater intellectual property protection than Thailand is required to implement under the WTO’s TRIPS Agreement. It is also negotiating bilateral trade agreements with Japan and the European Free Trade Association which might also insist on including TRIPS plus provisions. It is also discussing an FTA with EU as a part of the ASEAN.

Very strong intellectual-property protection going beyond the WTO’s TRIPS agreement and is a distinguishing feature of the US FTAs. Among the US’s demands are: an extension of patent protection to compensate for delays in granting patent, data-exclusivity rights (to protect clinical trial data from being used by generic manufacturers) for several years after the expiry of patent protection; the extension of patent protection to plants and animals; restriction on compulsory licensing, the extension of copyright protection to 70 years (compared with 50 years in TRIPS); the criminalisation of certain IP offences; and Thai ratification of several international IP conventions to which it is not a signatory (e.g. The Patent Cooperation Treaty, The Trademark Law Treaty and The International Convention for the Protection of New Varieties of Plants). Apart from the possible adverse impacts, these demands would require an extensive overhaul of Thai IP legislative framework which will also involve substantial costs.

Conclusion

As far as compatibility with TRIPS is concerned, the above findings indicate that all the countries studied have fully TRIPS complaint regimes. Even prior to joining TRIPS, most had an IPR regime in place, which was influenced by the law of their colonial rulers. With accession to TRIPS, all countries have enacted a series of amendments to existing laws and brought into force new TRIPS complaint IP laws. Enforcement of IP has been acknowledged to be a problem by all the countries though all have been engaged in substantial efforts to remedy this. As some studies indicate, there are a lot of myths surrounding the issue of IP enforcement in developing countries and a tendency in the Western world to mis-categorize other issues as IPR issues. This particular study of the five countries indicates that most IPR violations have been in the context of copyright infringement, trademark violation, and piracy while instances of patent abuse are limited. According to Nanda and Srivastava (2009), in the particular context of clean technology transfer, companies in developing countries are not infringing patents either because they are respecting the patent rights or are not capable of using the patented knowledge.

Assessment of patent regimes in these countries by the developed world is often made by using their own standards which these countries have not yet accepted. Thus, issues like data exclusivity or patentability criteria followed by these countries are often questioned even though they are TRIPS

compatible in this regard. India's copyright enforcement is reasonably strong, and it has never used compulsory licensing provision, yet it is criticized for its patentability criteria which are TRIPS compatible. Similarly, Thailand is criticized for making use of compulsory licensing which is also TRIPS compatible. These countries barring the exception of Thailand, have all been very reluctant to invoke provisions like compulsory license to safeguard the public interest. India and Thailand have shown some innovativeness in adopting a sui generis model wherein they have tried to protect farmers' interest and remaining TRIPS compatible at the same time.

One worrisome trend is the imposition of TRIPS Plus obligations by developed countries on the developing countries, which could go against the public interest in the latter. China had to accept some TRIPS plus obligations during its accession to the WTO. Among others, only Malaysia has accepted TRIPS plus obligations in its FTA with Japan. Other countries, though, are resisting such obligations in FTAs being negotiated, it is a big question as to how long they can do so in the face of sustained pressure on them to go for TRIPS Plus.

Nevertheless, as the findings from this study indicate, the contention that weak IPRs in developing countries constitute the biggest barrier to technology transfer seems to be untenable. It must, however, be admitted that developing countries still have a long way to go in terms of enforcement and building administrative capabilities as they lack the necessary financial and human resources.

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