

**TECHNOLOGY TRANSFER IN THE UNFCCC AND OTHER INTERNATIONAL LEGAL REGIMES:  
THE CHALLENGE OF SYSTEMIC INTEGRATION<sup>1</sup>**



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## **I. INTRODUCTION**

International protection of Intellectual Property (IP) is said to pose an initial hurdle to public policy prescriptions that facilitate access to technology for vulnerable countries or populations. This issue is now in the spotlight, given the centrality of technology transfer in climate change negotiations and solutions.

The regimes in which IP norm-setting has historically been done, the World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO) have been viewed as unwilling to include concerns regarding the needs and concerns of technology transfer to address climate change. WIPO and the WTO, however, are not the only loci relevant to climate change and technology transfer. The transfer of climate change-related technologies involves a broad web of treaties, international decisions, doctrinal developments, and evolving customs—and it is relevant to an unusually wide range of areas of science, law and policy. Consequently, in addition to IP law, other areas of international law are relevant to any discussion on technology transfer, including climate change law, human rights law, and investment law.

Given this scenario of potentially competing norms arising out of variegated areas of international law, the potential for conflicts and tensions may undermine effective policies ensuring the transfer of climate change-related technologies. Even if particular norms elaborated in the various international regimes are not directly relevant to technology transfer, it may be that their interaction frustrates or slows the objective of effective technology transfer.

This paper explores ways in which the various international legal instruments and regimes having a bearing on technology transfer can synergize. In particular, it looks at the potential for systemic integration, as an interpretative framework developed by the UN International Law Commission, to ensure the harmonious interpretation of the variegated legal instruments relating to technology transfer. Finally, the paper utilizes the framework of sustainable development to enable mutual supportiveness and systemic integration, with a view to ensuring the transfer of technologies necessary to effectively address climate change.

This paper is structured as follows. First it introduces the various international legal regimes bearing on technology transfer. In particular, this section looks at their background, particular provisions on technology transfer, and ways in which they relate to other international law sources. Second, the paper explores the concept of systemic integration, as elaborated by the ILC. Last, it applies this concept to the UN Framework Convention on Climate Change (UNFCCC), exploring concrete options for the international community engaged in negotiations leading to the Copenhagen conference of the parties (COP).

## **II. TECHNOLOGY TRANSFER & INTERNATIONAL LEGAL REGIMES**

Technology transfer is a cross-cutting issue addressed by a number of international legal regimes. However, despite there being broad agreement as to the positive impacts technology transfer can have, there is no universally recognized or enforceable definition as to what technology transfer is or what form it must take. Within the realm of trade agreements, the closest definition was, perhaps, the United Nations Conference on Trade and Development (UNCTAD) Draft International Code of Conduct on the Transfer of Technology which defined it as “the transfer of systematic knowledge for the

manufacture of a product, for the application of a process or for the rendering of a service and does not extend to the transactions involving the mere sale or mere lease of goods.”<sup>2</sup>

In the realm of multilateral environmental agreements, a concept of environmentally sound technologies and their transfer is articulated in Chapter 34 of Agenda 21 of the 1992 Rio Declaration:<sup>3</sup> Also, Agenda 21 Article 34.18 outlines activities that governments can take to engage in technology transfer.<sup>4</sup>

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<sup>2</sup> United National Conference on Trade and Development, ‘Draft International Code of Conduct on the Transfer of Technology’ in UNCTAD *Compendium of International Arrangements on Transfer of Technology: Selected Instruments – Relevant Provisions in Selected International Arrangements Pertaining to Transfer of Technology*, (31 Aug. 2001) UN Doc UNCTAD/ITE/IPC/Misc.5 <<http://www.unctad.org/en/docs//psiteipcm5.en.pdf>>

<sup>3</sup> UN Conference on Environment and Development, ‘Agenda 21’ (2–14 June 1992) UN Doc A/CONF.151/26 Vol. III. <[http://www.un.org/esa/dsd/agenda21/res\\_agenda21\\_34.shtml](http://www.un.org/esa/dsd/agenda21/res_agenda21_34.shtml)>:

34.1. Environmentally sound technologies protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes.

34.2. Environmentally sound technologies in the context of pollution are "process and product technologies" that generate low or no waste, for the prevention of pollution. They also cover "end of the pipe" technologies for treatment of pollution after it has been generated.

34.3. Environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures. This implies that when discussing transfer of technologies, the human resource development and local capacity-building aspects of technology choices, including gender-relevant aspects, should also be addressed. Environmentally sound technologies should be compatible with nationally determined socio-economic, cultural and environmental priorities.

<sup>4</sup> These activities include:

- (a) Formulation of policies and programmes for the effective transfer of environmentally sound technologies that are publicly owned or in the public domain;
- (b) Creation of favourable conditions to encourage the private and public sectors to innovate, market and use environmentally sound technologies;
- (c) Examination by Governments and, where appropriate, by relevant organizations of existing policies, including subsidies and tax policies, and regulations to determine whether they encourage or impede the access to, transfer of and introduction of environmentally sound technologies;
- (d) Addressing, in a framework which fully integrates environment and development, barriers to the transfer of privately owned environmentally sound technologies and adoption of appropriate general measures to reduce such barriers while creating specific incentives, fiscal or otherwise, for the transfer of such technologies;
- (e) In the case of privately owned technologies, the adoption of the following measures, in particular for developing countries:
  - i. Creation and enhancement by developed countries, as well as other countries which might be in a position to do so, of appropriate incentives, fiscal or otherwise, to stimulate the transfer of environmentally sound technology by companies, in particular to developing countries, as integral to sustainable development;
  - ii. Enhancement of the access to and transfer of patent protected environmentally sound technologies, in particular to developing countries;

Technology transfer plays a critical role in international environmental law, and as a tool to ensure that the Global South can pursue a clean development path. The UNFCCC is an example in point, where technology transfer is critical to addressing climate change. It is also important to note that MEAs have consciously and deliberately addressed technology transfer and, by implication, international economic and human rights policies. Despite explicit provisions on technology transfer in MEAs, generally they have not been adequately implemented. The generalized failure to fully implement technology transfer has its roots, not just in difficulties arising from political and economic will, but also from significant disagreements over: the proper relationship between different regimes; what methodologies should be available to fulfill the aims of a particular regime; which regime's objectives should take precedence, if at all; and in which regime or forum should the decisions about such choices be made.

International economic law instruments, such as the WTO Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) are also directly engaged in technology transfer issues. Article 66.2 of the TRIPS Agreement specifically concerns itself with the obligations of industrialized countries to facilitate and promote technology transfer to least developed countries.

Similarly, certain international investment agreements (IIAs), including bilateral investment treaties (IIAs) and investment chapters in free trade agreements, contain provisions regarding performance requirements that explicitly address questions of technology transfer. Investment law is also potentially implicated by the intersection between IP and climate change. One example, the Clean Development Mechanism (CDM), provides a mechanism that is meant to enable technology transfer. More generally, the regulatory tools deployed by States receiving foreign investments to ensure the transfer of technologies may be limited by disciplines included in IIAs.

Human rights law is implicated whenever policy options have human rights implications. Climate change impacts the realization of rights such as the right to health, the right to adequate housing, the right to food, and the right to water. The realization of these rights implies access to the technologies necessary to achieve them, thus linking technology transfer to the realization of human rights.

This chapter explores these various regimes as they relate to technology transfer. In addition to presenting their basic objectives and architecture, this chapter analyzes their relation to technology transfer. Also, in order to enable the analysis and application of systemic integration, this chapter

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- iii. Purchase of patents and licences on commercial terms for their transfer to developing countries on non-commercial terms as part of development cooperation for sustainable development, taking into account the need to protect intellectual property rights;
  - iv. In compliance with and under the specific circumstances recognized by the relevant international conventions adhered to by States, the undertaking of measures to prevent the abuse of intellectual property rights, including rules with respect to their acquisition through compulsory licensing, with the provision of equitable and adequate compensation;
  - v. Provision of financial resources to acquire environmentally sound technologies in order to enable in particular developing countries to implement measures to promote sustainable development that would entail a special or abnormal burden to them;
  - vi. Development of mechanisms for the access to and transfer of environmentally sound technologies, in particular to developing countries, while taking into account development in the process of negotiating an international code of conduct on transfer of technology, as decided by UNCTAD at its eighth session, held at Cartagena de Indias, Colombia, in February 1992.

(f) Improvement of the capacity to develop and manage environmentally sound technologies

explores the relations between these various legal regimes with other international law specialized regimes.

## **II.1 The UN Framework Convention on Climate Change & Technology Transfer**

Climate change is one of the broadest challenges that humanity has ever had to face. The solutions to address climate change must, of necessity, be at least as broad. It is also clear that technology will be a crucial component of most strategies to address climate change, both for mitigation and adaptation. Accordingly, this section explores the contours of the UNFCCC, with an emphasis on its particular treatment of technology transfer.

### *II.1.1. The UNFCCC: Background*

The UNFCCC was adopted in 1992 as part of the Earth Summit held in Rio de Janeiro, Brazil. It was the first attempt to create a comprehensive framework to tackle climate change, both in terms of reducing global warming and coping with the impacts of rising temperatures. Countries agreed that protection of the climate system is to be undertaken based on their common but differentiated responsibilities and respective capabilities. There are provisions in the agreement providing for financial and technological support to developing countries in order for them to adapt to and mitigate climate change. Various sections of the UNFCCC contain specific obligations for industrialized countries to provide specific assistance via the provisioning of finance and technology.

In 1997, a number of Parties to the UNFCCC adopted the Kyoto Protocol, which contains country-specific commitments for industrialized countries to reduce greenhouse gas (GHG) emissions, in addition to technology and finance obligations. To facilitate the reduction of GHG emissions by Annex I Parties,<sup>5</sup> the Kyoto Protocol created three market-based mechanisms (Emissions Trading, Joint Implementation (JI), and the CDM).

Currently, Parties are negotiating the future of climate regime, in particular, what happens in the post-2012 period, once the first commitment period for the Kyoto Protocol ends.

### *II.1.2. The UNFCCC & Technology Transfer*

The UNFCCC has some of the clearest and most strongly articulated provisions on the role of technology transfer in MEAs. These provisions define, inter alia, what the obligations of industrialized countries are with respect to developing country parties.

Technology transfer is addressed in Article 4 of the UNFCCC. This provision covers a range of issues, including financing, transfer and commitments. Article 4.1 addresses the diffusion of technologies amongst all Parties and Article 4.3 addresses the financing of technologies. Article 4.7 links the fulfillment of developing country Party commitments to the effective implementation of developed country Party commitments, particularly the provision of financial support and technology transfer.

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<sup>5</sup> Annex I Parties include the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States.

The key provision for the transfer of technology from Annex II Parties<sup>6</sup> to developing countries is Article 4.5, which states:

The developed country Parties and other developed Parties included in Annex II shall take all **practicable steps to promote, facilitate and finance**, as appropriate, the transfer of, or access to, **environmentally sound technologies and know-how** to other Parties, particularly developing country Parties, **to enable them to implement the provisions of the Convention**. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies.

Article 4.1(c) also commits all parties to:

Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;

The Kyoto Protocol to the UNFCCC directly addresses the transfer of technology in Article 10(c). The Kyoto Protocol also sets up the CDM as one of the market mechanisms for assisting Annex I Parties to reduce their emissions in Article 12. The CDM, ostensibly, provides an incentive to transfer technology to developing countries by encouraging investment projects that reduce the expected GHG footprint of the local economy.

### *II.1.3 The Legal Relationship between the UNFCCC and Other Regimes.*

There is little general indication as to the attitude of UNFCCC Parties to the broader environmental regime and to the international economic regimes. However, the UNFCCC treaty itself mentions how it should relate to other regimes. The preamble affirms “that responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty.”

Then UNFCCC Article 4.1(f) commits Parties to:

Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change.

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<sup>6</sup> Annex II Parties consist of the OECD members of Annex I, but not the economies in transition (EIT) Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change. In addition, they have to “take all practicable steps” to promote the development and transfer of environmentally friendly technologies to EIT Parties and developing countries. Funding provided by Annex II Parties is channeled mostly through the Convention’s financial mechanism.

Further, Article 3.5, on principles, notes:

The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.

This provision suggests that the UNFCCC asks parties to act in this manner in other fora relevant to the international economic system. The test that they impose here is one that imports language from the Chapeau of Article XX of the WTO GATT, which embodies the General Exceptions clause. To the extent that measures affecting trade in goods are used to address climate change, this principle provides interpretive guidance from the UNFCCC as to how the UNFCCC views the relationship between actions aimed at achieving climate aims and those actions as they relate to rules on trade in goods. This brings into play the broad jurisprudence underlying the WTO interpretation of GATT Article XX which has been one of the greatest loci of conflict in international legal norms.

In the Kyoto Protocol there is little, if any, direction to states on how the protocol relates to other regimes.

The relationship of the UNFCCC to IP regimes has become a significant part of the debate within the UNFCCC. Under the theme of “Enabling Environments for Technology Transfer,” the Parties at the 13<sup>th</sup> Conference of the Parties in Bali recommended that all Parties “avoid trade and intellectual property rights policies, or lack thereof, restricting transfer of technology.”<sup>7</sup> However, common ground on the interpretation of this recommendation and more generally on the question of whether IP constitutes a barrier to technology transfer does not appear to be forthcoming. In this connection, two approaches to IP have been articulated: Cuba, India, Tanzania, Indonesia, China and others argued that IP needs to be addressed as a barrier within the technology transfer discussion; Australia and the US argued that IP is a catalyst, rather than a barrier, to tech transfer.<sup>8</sup>

Within this discussion there have been suggestions from countries, such as Bolivia, that addressing climate change and enabling technology transfer requires fundamental changes to the existing architecture of international IP law, particularly the TRIPS Agreement. However, that call has not been taken up to a wide extent. The approach taken by many industrialized countries is that the existing status quo should prevail and that actions taken under the UNFCCC must not conflict with obligations under the TRIPS Agreement, in particular.

## II.2. International Law on Intellectual Property & Technology Transfer

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<sup>7</sup> UN Framework Convention on Climate Change, ‘Recommendations for enhancing the implementation of the framework for meaningful and effective action to enhance the implementation of Article 4, paragraph 5, of the Convention’, in *Development and transfer of technologies under the Subsidiary Body for Scientific and Technological Advice*, (14 March 2008) U.N. Doc FCCC/CP/2007/6/Add.1  
<<http://unfccc.int/documentation/decisions/items/3597.php?such=j&volltext=/CP.13#beg>> (accessed 8 June 2010)

<sup>8</sup> Maria Julia Oliva, ‘Climate Change, Technology Transfer, and Intellectual Property Rights’ (2008) International Centre for Trade and Sustainable Development Background Paper.



Technology transfer may impact on the management and flow of proprietary knowledge, thereby involving international law on IP. While certain basic elements of IP law can provide the basis for the effective market-based transfer of climate-related technologies, other elements, including the level and scope of protection, may pose an obstacle in this direction. Accordingly, this section looks at the two main international venues for IP norm-setting, WIPO and the WTO, focusing on how these venues address technology transfer and climate change.

### *II.2.1 Background: The TRIPS Agreement & WIPO<sup>9</sup>*

#### The TRIPS Agreement

The TRIPS Agreement was incorporated into international trade law as part of the Uruguay Round of negotiations, which resulted in most of the current WTO Agreements and concluded in 1994. Impatient with progress at WIPO, rightsholders and industrialized countries sought to make international IP law more harmonized and enforceable. The TRIPS Agreement, negotiated largely between industrialized countries, with the participation of some large developing countries, was seen by many developing countries as the price to be paid for achieving market access for industrial and agricultural goods. The TRIPS Agreement sets minimum standard for IP, covering copyright, patents, trademarks, geographical indications, and trade secrets, across all applicable subject matter. It makes those standards subject to the WTO Dispute Settlement Mechanism (DSM), as provided in Annex 2 of the Agreement establishing the WTO, and thus brings international IP under the broader jurisprudence on how the WTO should relate to other regimes.

The broader WTO jurisprudence on the proper relationship between the environment and trade was one of the primary driving concerns regarding the fragmentation of international law. It was the advent of the WTO that concretized what for many people had been a growing concern regarding the fragmentation of international law and the prioritization of some regimes to the detriment of others. Within the WTO jurisprudence, several tests were developed that try to cabin and regulate the relationship of the WTO to other regimes. This has been most evident in the area of trade and the environment. A comprehensive examination of the relationship between trade and environment is available elsewhere.<sup>10</sup> The last part of this section will discuss how the WTO jurisprudence interacts with technology transfer and other legal regimes.

#### The World Intellectual Property Organization

WIPO is an intergovernmental organization that was established in 1970 to “promote the protection of IP throughout the world through cooperation among States, and where appropriate, in collaboration with any other international organizations.”<sup>11</sup> In 1974, it became a specialized agency of the United Nations, being responsible for taking appropriate action “for promoting creative intellectual activity

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<sup>9</sup> Portions of this section are based on: The Center for International Law, ‘A Citizen’s Guide to WIPO’ (2007) CIEL <[http://www.ciel.org/Publications/CitizensGuide\\_WIPO\\_Oct07.pdf](http://www.ciel.org/Publications/CitizensGuide_WIPO_Oct07.pdf)> (accessed 8 June 2010)

<sup>10</sup> For a comprehensive review see: Nathalie Bernasconi-Osterwalder and others, *Environment and Trade: A Guide to WTO Jurisprudence* (Earthscan 2006)

<sup>11</sup> The WIPO Convention, WIPO’s constituent instrument, was signed at Stockholm on July 14, 1967, entered into force in 1970 and was amended in 1979. The *Bureaux Internationaux Reunis pour la Protection de la Propriete Intellectuelle* (BIRPI), WIPO’s first predecessor, was created in 1893.

and for facilitating the transfer of technology related to industrial property to the developing countries in order to accelerate economic, social and cultural development.”<sup>12</sup>

While technology transfer has been at the heart of WIPO’s design, WIPO has exemplified the vertical isolation of economic fora from other regimes. Established as an organization in the interest of rightsholders, it continued to operate in that manner well into the 1990s, narrowly interpreting its mandate as the promotion of IP. There was little or no examination of whether higher IP standards would contribute to the transfer of technology to developing countries, or to sustainable development. Moreover, there was minimal interaction between WIPO and other fora, and no interaction with multilateral environmental agreements.

WIPO’s interpretation of its mandate, and understanding of its competence, explains its narrow focus on the strengthening of IP standards. WIPO has historically emphasized its objective of “promot[ing] the development of measures designed to facilitate the efficient protection of intellectual property throughout the world and to harmonize national legislation in this field.”<sup>13</sup> Thus, WIPO’s focus on this provision, to the exclusion of others, explains why it has aimed its activities at increasing levels of protection as an objective in itself. However, by virtue of its Agreement with the UN, WIPO is obligated to include development within its mandate, including the promotion of technology transfer.

WIPO administers many international treaties on IP and has an agreement with the WTO to serve as the primary body for assisting countries with the implementation of the TRIPS Agreement. It has no dispute settlement mechanism for the treaties it administers; but, by virtue of the inclusion of WIPO treaties within the scope of the TRIPS Agreement (see e.g. TRIPS Article 9.1 on copyright and the Berne Convention), it is the source of significant authority on international IP standards and how they should be interpreted. A case in point is the fact that WIPO was consulted by a WTO panel in one of the first cases interpreting international IP standards.<sup>14</sup>

### *II.2.2 TRIPS & WIPO and Technology Transfer*

With respect to technology transfer, Article 10 of the Agreement between WIPO and the UN<sup>15</sup> obligates WIPO to:

co-operate within the field of its competence with the United Nations and its organs, particularly the United Nations Conference on Trade and Development, the United Nations Development Programme and the United Nations Industrial Development Organization, as well as the agencies within the United Nations system, in promoting and facilitating the transfer of technology to developing countries in such a manner as to assist these countries in attaining their objectives in the fields of science and technology and trade and development.

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<sup>12</sup> Agreement between the UN and the World Intellectual Property Organization (entered into force 17 December 1974) <<http://www.wipo.int/treaties/en/agreement/index.html>> accessed 7 June 2010

<sup>13</sup> Convention Establishing the World Intellectual Property Organization, (Signed at Stockholm on July 14, 1967 and as amended on September 28, 1979) <[http://www.wipo.int/export/sites/www/treaties/en/convention/pdf/trtdocs\\_wo029.pdf](http://www.wipo.int/export/sites/www/treaties/en/convention/pdf/trtdocs_wo029.pdf)> accessed 7 June 2010

<sup>14</sup> World Trade Organization, *United States – Section 110(5) of US Copyright Act* (15 June 1999) WT/DS160/R <[http://www.wto.org/english/tratop\\_e/dispu\\_e/cases\\_e/ds160\\_e.htm](http://www.wto.org/english/tratop_e/dispu_e/cases_e/ds160_e.htm)> accessed 7 June 2010

<sup>15</sup> Agreement between the UN and the WIPO (entered into force 17 December 1974) <<http://www.wipo.int/treaties/en/agreement/index.html>> accessed 7 June 2010

WIPO's failure to take any of this work into account in its norm-setting and work programme was one of the issues that led to a concerted new approach from developing countries and civil society to ensure that WIPO took a new direction. That initiative led to the WIPO Development Agenda.<sup>16</sup> A key component of the WIPO Development Agenda is aimed at transforming how WIPO relates to other fora and regimes. To this end, the scope of subject areas that WIPO must take into account in its policy-making has been expanded to include biodiversity, public health, education, and climate change. It remains to be seen as to how this will translate into the advice and interpretation of rules that WIPO gives to its Member States and to other international governmental organisations.

Generally, technology transfer is framed as one of the primary aims of the TRIPS Agreement, embodied in TRIPS Article 7, which states: "The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations."

Most relevant to climate change concerns, Article 8.1 also notes that: "Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development, provided that such measures are consistent with the provisions of this Agreement."

Article 66.2 of the TRIPS Agreement is specifically concerned with technology transfer. It is one of the few international mandatory articles on technology transfer, requiring developed countries to take measures and provide incentives to their firms and institutions to transfer technology to LDCs. Discussion of this provision has occurred entirely within the framework of the WTO, and it has proven a significant disappointment for developing countries. The reporting requirement established under this Article has shown that very little has been carried out and that developed countries have divergent views on what the actual obligation entails.<sup>17</sup> It is nevertheless a mandatory obligation, subject to dispute settlement, and part of the internal interpretive framework of the TRIPS Agreement.

Aside from provisions on technology transfer, the area of most concern to technology transfer is patent law. In the context of providing access to patented technologies, Article 30 of the TRIPS Agreement states:

Members may provide limited exceptions to the exclusive rights conferred by a patent, provided that such exceptions do not unreasonably conflict with a normal exploitation of the patent and do not unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties.

Moreover, Article 27.2 of the TRIPS Agreement allows for exclusions from patentability stating:

Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality,

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<sup>16</sup> For more detail see: The Center for International Law, 'A Citizen's Guide to WIPO' (2007) CIEL <[http://www.ciel.org/Publications/CitizensGuide\\_WIPO\\_Oct07.pdf](http://www.ciel.org/Publications/CitizensGuide_WIPO_Oct07.pdf)> accessed 7 June 2010

<sup>17</sup> Suerie Moon, 'Does TRIPS Art. 66.2 Encourage Technology Transfer to the LDCs?: An Analysis of Country Submissions to the TRIPS Council (1999-2007)' (16 June 2008) ICTSD <[http://www.iprsonline.org/icts/Dialogues/2008-06-16/2008-06-16\\_doc.htm](http://www.iprsonline.org/icts/Dialogues/2008-06-16/2008-06-16_doc.htm)> accessed 7 June 2010

including to protect human, animal or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.

More generally, there are also several areas of IP law that TRIPS does not address and in which member states have full autonomy. These include:

- The levels at which patentability standards may be set for novelty, inventive step, industrial applicability and disclosure, affecting the quantity, quality and scope of patent grants generally.
- The conditions regulating the market under which patents are granted. For example, patent applicants can be required as a condition of the grant to participate in sectoral agreements, or the government can preclude certain forms of commercial exploitation in its domestic market. The state is free to regulate the pre-grant market in as narrow or broad a manner as it wishes.

Thus there appear to be significant avenues through which the concerns of other international legal regimes may find purchase, especially with respect to technology transfer to address climate change. The next section looks at the jurisprudence and practice under the WTO to illustrate why many actors are concerned that there may be fundamental conflicts between international IP regimes and human rights and international environmental regimes.

### *II.2.3. TRIPS, WIPO and Other International Regimes*

Unlike the area of trade and the environment, there is not an extensive interpretive practice, internal to WIPO and the WTO, regarding the appropriate relationship between the IP regime and other regimes. This is only partly explained by the historical isolation discussed above. In addition to this isolation there also exists a combination of a lack of purchase in the language of the treaties, and a lack of case law. Any content on the issue of inter-regime relationships can be found in the interpretive practice regarding exceptions and limitations to IP rights. Some of these exceptions are internal to the IP system, but others can be treated as implicit statements about how IP interests should relate to other public interests. This “exceptions” approach has led to narrow readings of the role of other regimes in the context of IP law.

It remains to be seen whether the comparative lack of interpretive practice in WIPO and WTO provides an opportunity or otherwise constitutes an insurmountable barrier to insertion and consideration of the concerns of other regimes. This section will discuss the one significant case as well as several developments in the area of public health that may provide some direction.

The TRIPS Agreement’s exceptions to patentability (Article 30, above) was interpreted in the *Canada – Pharmaceutical Patents*<sup>18</sup> case. In this case, Canada defended the stockpiling of medicines prior to the expiration of a patent as well as allowing generic competitors to produce samples of the product for the purposes of regulatory approval. The European Communities (EC) complained that these provisions violated the rights of EC patent holders to authorize the use and production of their patented pharmaceuticals. Among its key defenses, Canada asserted that these provisions fell within the scope of the TRIPS Article 30 exception.

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<sup>18</sup> WTODS114. This was a panel decision that was lost by Canada and not appealed to the Appellate Body. As of the time of writing, no IP case has been appealed to the Appellate Body. In the case of *China – Measures Affecting the Protection and Enforcement of Intellectual Property Rights* (WTODS362), the panels decision on trademarks was not appealed. However, a related case under the GATT and GATS, *China – Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products* (WTODS363), was appealed to appellate body.

The Panel's approach to exceptions is a strong guide to WTO jurisprudence on the relationship between IP and other public policy aims and goals, such as the human rights dimension of climate change. The Panel approached the issue on the basis of a three-part test involving cumulative steps. The measure:

- (i) must be "limited";
- (ii) must not "unreasonably conflict with normal exploitation of the patent"; and
- (iii) must not "unreasonably prejudice the legitimate interests of the patent owner, taking account of the legitimate interests of third parties."

Key interactions with other policy purposes, including the concerns of other legal regimes, such as the environment and human rights, are found in the second step (in what may be considered a measure that "unreasonably conflicts with normal exploitation of the patent"), and in the third step (in what may "unreasonably prejudice the legitimate interests of the patent owner, taking into account the legitimate interests of third parties"). In the second step, public interests may be inserted into the discussion by examining whether "normal" exploitation should be considered in a normative sense that examines exceptions where the patent holder should not expect remuneration. In the third step, the legitimate interests of third parties could be considered to go beyond those of other commercial actors but to the public at large, including consumers.

The interpretation of the first step, i.e. the 'limited' nature of the measure, requires no analysis of public interest or policy choice elements. The question of whether a measure is indeed "limited" is measured purely against the extent to which the patent right is affected. Therefore, the test is fundamentally one that requires the measure have a minor qualitative and quantitative effect on the rights of the patent holder. If a measure does not meet this test, its public policy purpose(s) need never be examined or taken into account. No matter how dire a need the measure is attempting to address, if the measure is not limited, then it fails the test. Determining the threshold of "limited" remains a fact-based analysis that depends on the size of the market, the expected modes of exploitation of the patent, and the extent to which the exercise of the exception comes into competition with these activities. There is some suggestion from the *Pharmaceutical Patents* case that a degree of competition must be acceptable, but not far beyond a *de minimis* amount. In the climate change context, however, given the current level of uncertainty over the temporal and geographic magnitude of its effects, interpretation of what measures are indeed "limited" may be a critical question to the interaction between TRIPS and the climate change regime..

In interpreting the second step, the Panel first defined "normal exploitation" as "to exclude all forms of competition that could detract significantly from the economic returns anticipated from a patent's grant of market exclusivity."<sup>19</sup> However, finding that the measure in question (*i.e.*, production for regulatory approval) did not conflict with normal exploitation, the Panel did not find it necessary to decide whether the conflict was unreasonable in degree.

The Panel then moved to the third step, describing what the "legitimate interests" of the rightsholder and third parties might be. The Panel noted that "[t]o make sense of the term 'legitimate interests' in this context, that term must be defined in the way that it is often used in legal discourse – as a normative claim calling for protection of interests that are 'justifiable' in the sense that they are supported by relevant public policies or other social norms."<sup>20</sup> However, while examining what were

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<sup>19</sup> WTO, *Canada-Pharmaceutical Patents* (2000) WT/DS114

<sup>20</sup> WTO, *Canada-Pharmaceutical Patents* (2000) WT/DS114

“legitimate interests” of the patent holder, the Panel provided no further indication of what might be encompassed by the legitimate interests of third parties and did not engage in a balancing exercise, as it found that there was no legitimate interest of the patent holder at play in the regulatory approval process. Thus, as far as patent law goes, there is no indication of how future Panels or the Appellate Body might view how this third step could allow for the consideration of other public policy processes and regimes.

The thrust of the decision is that measures can be found invalid long before any element of justification can be brought to bear or considered, especially in the review of the third step of the test articulated by Article 30.

Despite this narrow reading of Article 30, there is an understanding that certain kinds of exceptions (such as private, research, educational and experimental uses, as well as other exceptions existing at the time of the TRIPS Agreement and common in most countries’ patent laws) could fall within the scope of Article 30.

In addition to Article 30, public policy concerns find their way into TRIPS with provisions on compulsory licensing (Article 31: Other Use Without Authorization of the Rightsholder). States may use a compulsory license to take the patent rights held by the rightholder and either exercise the rights themselves, or license the rights to third-parties to help the state exercise such rights. Article 31(b) requires that those seeking compulsory licenses should have “made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time.” However, that provision is waived in circumstances of national emergency, other circumstances of extreme emergency, and public non-commercial use. In any case, each circumstance in which a compulsory license is used requires that adequate remuneration be paid (Article 31(h)). The level of that remuneration appears to be left to the discretion of the national government to determine. In addition, where the goal is to remedy anti-competitive behavior, the requirement of Article 31(b) does not apply. There has been no case testing the application of such compulsory licenses but they have been one of the major causes of controversy regarding the implementation of the TRIPS Agreement as well as the extent to which they should be available for climate-change related technologies.

Other provisions of the TRIPS Agreement that may relate to public policy concerns are Articles 8.2 and 40, which address competition policy and abuses of patent rights, respectively. Parties can adopt any measure to address anti-competitive practices relating to licenses. This could include a refusal to deal, as well as a failure to sufficiently work a patent. This is particularly important given anecdotal evidence from Korea and India of refusals to license technology under the Montreal Protocol system.<sup>21</sup>

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<sup>21</sup> Cameron J Hutchison ‘Does TRIPS Facilitate or Impede Climate Change Technology Transfer into Developing Countries?’ (2006) 3 University of Ottawa Law & Technology Journal 517 <<http://ssrn.com/abstract=1019365>>. During the phase out of CFCs under the Montreal Protocol, the technology for non-CFC refrigerants for air conditioners and refrigerators was held by a few companies, one of which was DuPont chemicals. With relatively fierce competition in the “white goods” market, DuPont found it useful to refuse to license its technology to Korean and Indian producers who were thus kept out of the market for these new CFC-compliant goods while they spent six years developing their own versions of non-CFC refrigerants. Whether this resulted in delayed or more expensive roll-out of non-CFC products in developing countries has not been confirmed although that may be the logical conclusion of such behavior. Such behavior is also generally considered to be on the borderline between abuse of monopoly and legitimate competition. Under the Montreal Protocol, Parties were meant to put in place domestic provisions to encourage such licensing by their domestic companies, something which, in the case of CFCs, developing countries accuse developed countries of failing to do.

Finally, Article 8.1 of the TRIPS Agreement is also relevant to the technology transfer discussion.<sup>22</sup> Article 8.1 mentions “public health and nutrition” as a specific subject area. However, Article 8.1 also mentions a more general goal, “to promote the public interest,” which may be broader than the language in Article XX of the GATT. In the case of Article 8.1, its language states that such provisions must be in conformity with the rest of the TRIPS Agreement before they are tested. Specifically, it states “provided that such measures are consistent with the provisions of this Agreement.”

In connection with Article 8.1, the *Pharmaceutical Patents* Panel acknowledged that Article 8.1 had some interpretive force, but viewed the existence of Article 30, and the way it was narrowly constructed, as a significant indicator that Article 8.1 should not be read to alter the “negotiated” balance exhibited by the TRIPS Agreement.<sup>23</sup> Thus, the Panel believed that much of the balancing required by Article 8.1 is already exemplified by the negotiated TRIPS provisions.

On the specific issue of public health, the Doha Declaration on Public Health serves as the most authoritative statement of the WTO’s views on how the WTO relates to this public policy concern. The language is interesting because it borders on using human rights language, but in the end situates the “right to act” as a right of states to address public health concerns, rather than as an obligation of states to ensure the right to health. Thus, Paragraph 4 of the Declaration states:

We agree that the TRIPS Agreement does not and should not prevent members from taking measures to protect public health. Accordingly, while reiterating our commitment to the TRIPS Agreement, we affirm that the Agreement can and should be interpreted and implemented in a manner supportive of WTO members’ right to protect public health and, in particular, to promote access to medicines for all.

The Declaration also provides explicit interpretive direction with regard to how to interpret the TRIPS Agreement as regards other regimes related to health. Paragraph 5(a) therefore states: “In applying the customary rules of interpretation of public international law, each provision of the TRIPS Agreement shall be read in the light of the object and purpose of the Agreement as expressed, in particular, in its objectives and principles.” This is therefore an exhortation to do more than simply consider that the TRIPS Agreement already expresses the proper balance between IP and human rights.

In addition, and of the most relevance to the exercise of compulsory licenses for climate change, paragraph 5(c) states that, “[e]ach member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency, it being understood that public health crises, including those relating to HIV/AIDS, tuberculosis, malaria and other epidemics, can represent a national emergency or other circumstances of extreme urgency.”

Some more direction can be found in the Doha Ministerial Declaration (2001). Paragraph 6 of the declaration reaffirms the central role of sustainable development and the belief of member states that trade and environmental policies can and should be implemented in a mutually supportive manner. However, work on the relationship between trade and environment, as well as on trade and technology transfer, has remained largely sidelined in committee discussions without much progress beyond the exchange of viewpoints.

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<sup>22</sup> *ibid* 18

<sup>23</sup> WTO, *Canada–Pharmaceutical Patents* (2000) WT/DS114

With respect to existing treaties within WIPO, none of the treaties have any provisions on how they should relate to general international law, or to other regimes. For technology transfer and climate change, the most relevant regime is the Paris Convention on Industrial Property and related patent law systems. The WIPO Handbook on Intellectual Property provides some interpretive guidance on how public policy choices may intersect with the Paris Convention. However, in all cases of potential exception to or limitation of intellectual property rights, the TRIPS Agreement has generally superseded these standards. The Handbook does note however that countries are freer to apply compulsory licenses for any public policy reasons they see fit and that, under the Paris Convention, these were not subject to any restrictions.<sup>24</sup> The TRIPS Agreement does not limit the substantive scope of such compulsory licenses but simply applies procedural requirements which must be met.

The foregoing analysis shows that the flexibilities in international IP law have played a limited role in facilitating the accomplishment of public policy objectives, despite the clear intent of including such provisions, which suggests the vertical isolation and over-large influence of economic and private sector concerns in the international IP regime. Such conditions make it likely that where the concerns of technology transfer for climate change interact with IP rules, technology transfer for climate change may suffer, if addressed in international IP fora.

There have been few cases regarding how TRIPS should relate to the environment and human rights, although there have been significant developments such as the Doha Declaration on Public Health, as well as ongoing negotiations under the Doha Round. The TRIPS Agreement contains no General Exceptions article such as that embodied by GATT Article XX. Instead, it generally relies on narrowly construed exceptions to accommodate other public policy concerns. These exceptions do not have the benefit of the significant jurisprudence on the broad language of Article XX of the GATT to help lend a degree of certainty to the ability of the TRIPS Agreement to help fulfill public policy objectives.

### **II.3. International Investment Law and Technology Transfer**

International investment law has rapidly developed during the last three decades. Generally, this area of law is characterized by dispersion and multiple sources, including customary and conventional law. In respect of the latter, international investment agreements (IIAs) include a range of agreements relating to the protection of investors and investments, including bilateral investment treaties, investment contracts, and investment chapters in free trade agreements. Many of these instruments provide for arbitration as the mechanism to settle disputes, including between investors and their host States. This has given rise to numerous decisions that are shaping this expanding field of international law. Given its focus on disciplining governmental measures that may affect investors and their investments, this legal regime also implicates technology transfer initiatives. This section studies the contours of this proposition.

#### *II.3.1. Background: International Investment Law*

Since the 1990s there has been a proliferation of IIAs that discipline governmental measures relating to foreign investors and their investments. Given this wide reach, a number of governmental measures adopted by host States could come under the purview of IIAs. These measures may include policies to effectuate the transfer of technology. In point of fact, IIA practice by the United States and Canada proscribes performance requirements such as obligations to transfer technology.

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<sup>24</sup> WIPO, *WIPO Intellectual Property Handbook* (WIPO, Geneva, 2006) <<http://www.wipo.int/about-ip/en/iprm/>> accessed 8 June 2010



It may be useful here to distinguish the kind of measures that could be implicated by IIAs, in relation to the different forms of technology transfer. At a general level, international investments may themselves embody the transfer of technology and know-how into the host State. To the extent that the host State is a developing country, and that the investment reduces the carbon footprint of the local economy, this form of transfer of technology will be beneficial both to the host State economy and to the international community's effort to address climate change. In this scenario, the investor always remains in control of the technology, and the transfer occurs by the establishment of the investment utilizing the technology in the host State.

At another level, technology transfer could involve host State policies requiring the foreign investor to transfer technologies to domestic economic operators or State agencies. These kinds of policies may or not run afoul of disciplines in IIAs regarding, for example, expropriation, fair and equitable treatment (F&ET), national treatment and performance requirements. This following sub-section analyzes these issues in greater detail.

IIAs generally provide for arbitration to resolve disputes between the contracting parties, as well as between host governments and private investors. A number of cases have involved challenges brought by investors against health, safety and environmental laws and regulations. In this regard, one key concern with IIAs is that they may pose an obstacle to the development of government regulations to ensure the realization of environmental and human rights. In this regard, a host State that requires the transfer of technology from the foreign investor to national entities, including in connection with health, safety and environmental measures, could face international arbitration and potential monetary damages.

### *II.3.2. International Investment Law & Technology Transfer*

Several disciplines included in IIAs interact with technology transfer, for example, non-discrimination rules, F&ET, expropriation, and performance requirements. All these rules can implicate issues of technology transfer.<sup>25</sup>

The first question in the analysis of the interplay between IIAs and technology transfer is whether there is an investment. The answer to this question generally turns on the definition of investment concluded by the Parties of the IIA. However, in the International Centre for Settlement of Investment Disputes (ICSID) context, certain characteristics of the investment have been required for jurisdictional reasons. In this vein, whether IP can be protected as a specific investment asset outside of an existing relationship to other, tangible assets remains to be seen. Nevertheless, IP rights have at times been included explicitly in the definition of intangible assets and investment.<sup>26</sup>

Then, where a host State requires the investor to transfer technology to national economic operators, it may be necessary to distinguish whether the IIA only protects investments admitted by the host States or whether it also includes pre-establishment rights, *i.e.*, the right to establish the investment in the host-State, in accordance to that State's internal legal framework. In the former case, the host State may determine conditions for the establishment of the investment, and where the technology

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<sup>25</sup> It would go beyond of the scope of this paper to analyze in detail each one of these disciplines, and so the following is a schematic overview of the salient points.

<sup>26</sup> Ermias Biadgleng, 'IP Rights Under Investment Agreements: the TRIPS-Plus Implications for Enforcement and Protection of the Public Interest' (2006) South Centre Research Paper No. 8

transfer is a condition of entry the IIA will usually be inapplicable to this issue. However, if the technology transfer is required after the investment is established, it may implicate IIA rules. In the latter case, where the IIA provides pre-establishment rights and market access, depending on the circumstances, conditions of entry such as technology transfer may be regarded as incompatible with the IIA.

The next step is to identify how IIA disciplines relate to technology transfer.

In connection with non-discrimination, the critical issue will turn on the meaning of “like circumstances.” Where an international agreement, for example one concluded under the UNFCCC, requires countries to discriminate in their treatment of investors to achieve climate change goals, including perhaps with respect to technology transfer, a strong argument will support the view that investors are not in like circumstances and thus there is no breach of non-discrimination standards. Absent an external basis requiring the State to discriminate, it may be harder for it to find an objective, public policy need to do so. But should a compelling public policy justify discrimination, the non-discrimination disciplines may accommodate it through the reading of “in like circumstances” as the key operational element of the standard.

In relation to F&ET, the question usually turns on whether due process of law has been followed in the adoption and enforcement of governmental measures. Certain tribunals have also read F&ET independently from the minimum standard of treatment in general international law, and have looked into whether the host State’s measures frustrate the legitimate expectations of the foreign investor.<sup>27</sup> Under this latter reading, a technology transfer measure that was not anticipated in the regulatory framework at the time the investment was made, and that frustrates expectations of profit, may be found to breach the F&ET standard.

In relation to expropriation, the question turns on whether technology transfer involves the taking of IP from the investor. To the extent that IP is a form of property under domestic law, it would be protected by expropriation provisions. If a taking is effected, even as a result of measures having an effect tantamount to expropriation, then the duty to compensate arises. The key question here is whether non-discriminatory technology transfer polices could be regarded as a legitimate exercise of the police powers and the right to regulate, especially in the face of the climate change crisis affecting the rights of citizens in the host and other states. Finally, several IIAs allow an exception to expropriation provisions to grant compulsory licenses that are consistent with TRIPS.<sup>28</sup>

Finally, certain IIAs, notably those concluded by the United States and Canada, proscribe performance requirements, including requirements to transfer technology both at the pre and post-establishment phases of the investment. The US IIAs also include exceptions for measures consistent with Articles 31 or 39 of the TRIPS Agreement concerning compulsory licensing and protection of undisclosed information, respectively, as well as for requirements enforced by courts in connection with anti-competitive practices.

In addition to the general disciplines, certain IIAs include exceptions to the rules. These exceptions can be general, such as for national security and public order, or more specific to particular existing

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<sup>27</sup> For example, see: *Técnicas Medioambientales Tecmed, S.A. v. United Mexican States* (2003) ICSID Case No. ARB(AF)/00/2

<sup>28</sup> For example, see: *Técnicas Medioambientales Tecmed, S.A. v. United Mexican States* (2003) ICSID Case No. ARB(AF)/00/2

non-conforming measures, *i.e.*, laws and regulations of the host State that may not be compatible with the disciplines but are nevertheless safeguarded by agreement of the Parties. It is doubtful that the general exceptions for national security can be used to justify technology transfer requirements otherwise in contravention with the IIA disciplines, although this proposition may be tempered by the recognition of the security implications of global climate change.

To conclude, the emphasis of IIAs is on disciplining the host State's exercise of authority. To the extent that the host State is giving effect to an international agreement relating to technology transfer and climate change, especially one binding the home State as well, there is less room for a tribunal to conclude that its implementing measures breach a IIA.

### *II.3.2. International Investment Law & Other International Regimes*

IIA disputes are usually settled under the rules of ICSID or UNCITRAL (United Nations Commission on International Trade Law). The ICSID Convention also contains rules on applicable law:

The tribunal shall decide a dispute in accordance with such rules of law as may be agreed by the parties. In the absence of such agreement, the Tribunal shall apply the law of the Contracting State party to the dispute (including its rules on the conflict of laws) and such rules of international law as may be applicable.

Generally, the parties have agreed to the applicable law as defined in the IIA, and IIAs usually provide that any dispute will be decided on the basis of the treaty and applicable rules of international law. It has generally been understood that the phrase "applicable rules of international law" refers to certain elements of customary law relating to the interpretation of treaties and the secondary rules of State responsibility.

Although IIAs usually have no references to other regimes, such as human rights, or environmental regimes, ICSID Arbitral Tribunals have been willing to consider or refer to other international obligations in interpreting terms of the IIA.<sup>29</sup> However, a key challenge for analysis in this area is the lack of transparency of many such awards, making it difficult to understand and follow the reasoning underlying the cases.

In addition, the variation of treaty language being interpreted by dispersed investment arbitrations makes it hard for investment law to construct a sufficiently homogeneous body of law that would be applicable across all IIAs. In this regard, it is not clear that there is or could be a sufficiently consistent and self-referential body of decisions giving rise to a "jurisprudence" of international investment law. This makes it difficult to establish the extent to which there is a consistent view of the relationship between investment law and other international law regimes.

## **II.4 International Law on Human Rights and Technology Transfer**

### *II.4.1 Background: Human Rights Law*

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<sup>29</sup> Luke Eric Peterson and Kevin R. Gray, 'International Human Rights in Bilateral Investment Treaties and in Investment Treaty Arbitration' (2005) International Institute for Sustainable Development  
<[http://www.iisd.org/pdf/2003/investment\\_int\\_human\\_rights\\_bits.pdf](http://www.iisd.org/pdf/2003/investment_int_human_rights_bits.pdf)> accessed 8 June 2010

Both the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic, Social and Cultural Rights (ICESCR) are relevant to the discussion of technology transfer and climate change. The further development and interpretation of these covenants is the responsibility of two committees, (Human Rights Committee for the ICCPR and the Committee on Economic, Social and Cultural Rights for the ICESCR). The covenants have mechanisms for state reporting, managed through the committees, and the committees also address interpretive issues in the covenants through General Comments. There are also optional protocols that provide for individual complaints procedures under both covenants, although the procedure for the ICESCR is only beginning to operate.

#### *II.4.2 Human Rights Law & Technology Transfer*

There is no explicit right to technology transfer within the human rights regime. However, it is clear that there are rights within each of the covenants and other human rights conventions, the realization of which requires access to particular technologies. In particular, the Committee on Economic Social and Cultural Rights (CESCR or the Committee) has looked at technology transfer within the context of international economic law, especially with respect to IP. In addition, there has been significant progress in clarifying the linkages between human rights and climate change, including with respect to technology transfer.

With respect to IP, the CESCR and other human rights organs have expressed concerns regarding the negative impacts of IP on human rights.<sup>30</sup> The Committee on the Rights of the Child, in 2004, requested El Salvador to consider all aspects of the Convention on the Rights of the Child in concluding IP provisions in Free-Trade Agreements (FTAs).<sup>31</sup> The CESCR has raised the issue of limitations on farmers' rights to exchange and re-use seeds during its concluding observations on India's Country report in 2008.<sup>32</sup> It has also consistently raised the issue of the interaction between the right to health and IP in ensuring access to medicines, addressed at the state level in bilateral FTAs, as well as multilaterally in the WTO.<sup>33</sup>

On the other side of the ledger is the CESCR's work on Article 15(1) of the ICESCR. Article 15(1) states:

1. The States Parties to the present Covenant recognize the right of everyone:
  - (a) To take part in cultural life;
  - (b) To enjoy the benefits of scientific progress and its applications;
  - (c) To benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

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<sup>30</sup> See e.g., Magali Fabre, *A compilation of references to trade and trade-related issues in the work of the Committee on Economic, Social and Cultural Rights, 2002-2005* (3D, April 2006) <<http://3dthree.org/en/complement.php?IDcomplement=58&IDcat=5&IDpage=32>> accessed 8 June 2010

<sup>31</sup> Davinia Ovet, *Policy Brief on Intellectual Property, Development and Human Rights: How Human Rights Can Support Proposals for a World Intellectual Property Organization (WIPO) Development Agenda* (3D, February 2006) 3 <[http://www.3dthree.org/pdf\\_3D/3DPolBrief-WIPO-eng.pdf](http://www.3dthree.org/pdf_3D/3DPolBrief-WIPO-eng.pdf) > accessed 8 June 2010

<sup>32</sup> Zoe Goodman, *Towards Human Rights-Consistent Trade Policies: Samples and Suggestions for Engaging with Human Rights Treaty Bodies* (3D, December 2008) 11 <[http://www.3dthree.org/pdf\\_3D/HR&tradepolicies.pdf](http://www.3dthree.org/pdf_3D/HR&tradepolicies.pdf)> accessed 8 June 2010

<sup>33</sup> *Ibid* 1212

The interpretation of Article 15(1) has raised quite few problems. Article 15(1)(b) presents the possibility of potentially generating a right to technology transfer from within the human rights framework. However, Article 15(1)(c) may also be considered, by some, the source of a right to IP.

The CESCR has embarked on a process to interpret Article 15, beginning with Article 15(1)(c) which resulted in General Comment 17 in 2005. General Comment 17 presents a particular viewpoint of IP as it relates to human rights, and it makes several important clarifications. It clarifies the distinction between human rights and IP rights: the rights contained in the CESCR are human rights and cannot be asserted by legal persons, only natural persons.<sup>34</sup> IP rights, unlike human rights, can be revoked, assigned and are usually temporary in nature. Thus, IP rights cannot be equated with the rights in 15(1)(c).

Still, the articulation of 15(1)(c), without an accompanying articulation of the other provisions of 15(1), has produced an incomplete viewpoint of the relationship between IP rights and human rights. For example, analysis of 15(1)(b) would clarify how mutually supporting and limiting these two provisions might be. The CESCR, however, is presently addressing Article 15(1)(a). Nevertheless, the CESCR leaves several questions open, which introduce a certain degree of confusion into the debate.

One key area is that the CESCR, while not equating IP with human rights, seems to adopt the concept that *exclusive* rights are the only way that the rights in Article 15 may be recognized. The Committee fails to make the distinction between a right of remuneration (to receive benefits from), which is the nature of Article 15(1)(c), and exclusive rights of IP that allow a person to actually prohibit uses, sometimes resulting in remuneration through supra-competitive pricing. Indeed, a right of remuneration can be ensured through a variety of alternative approaches such as liability regimes, 'right of use regime with mandatory remuneration', or even 'free use' systems supported by state levies or taxes. The Committee's approach relies on only one particular method of ensuring remuneration, IP, rather than considering the full range of action outside of exclusive rights.

Given some of the references to the right to property in the discussion of Article 15 and IP, as seen in General Comment 17, it may be also appropriate to consider developments in international human rights law concerning the relationship between private property and public interests. What standards apply in respect of limitations to property rights in human rights law, and are they more or less flexible than the kinds of limits allowed on intellectual property rights?

In this regard, human rights law recognizes a right to regulate private economic activity for the benefit of the common good, in connection with the protection of property. In this context, property appears not in isolation but within a broader constellation of rights and collective interests. For example, the European Court of Human Rights accepts a very wide margin of appreciation under Protocol 1 Article 1 to assess the fair balance between the demands of the general interest of the community and the requirements for the protection of the individual's fundamental rights, assuming that the assessment undertaken on the domestic plane remains within the boundaries of its discretion, unless manifestly without reasonable foundation.<sup>35</sup> This qualified deference to the national authority in the context of property protection mirrors that found in the TRIPS Agreement with respect to compulsory licenses

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<sup>34</sup> UN Committee on Economic, Cultural and Social Rights 'General Comment No. 17 (2005): The right of everyone to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he or she is the author (article 15, paragraph 1 (c), of the Covenant)' (12 January 2006) para 1-3, UN Doc. E/C.12/GC/17

<sup>35</sup> Marius Emberland, *The Human Rights of Companies: Exploring the Structure of ECHR Protection* (OUP, Oxford 2006) 191

(Article 31), where a WTO Member is authorized to infringe on the patent for discretionary reasons. Ultimately, this jurisprudential line allowing for limitations of property rights in the economic sphere preserves a measure of policy space necessary to accommodate societal interests, including with respect to technology transfer.

The discussion on Article 15(1) so far has addressed the issue of a right to technology transfer per se within the human rights system and whether it had been foreclosed by the CESCR interpretation of article 15(1)(c). However, there are other rights that may require technology transfer for their fulfillment. The Office of the High Commissioner for Human Rights (OHCHR) Analytical Study on human rights and climate change points to several human rights that are impacted by climate change, including the right to health, the right to food, and the right to water.<sup>36</sup> Work conducted by the Center for International Environmental Law (CIEL) also clarifies how human rights may be affected by climate change and/or by mitigation and adaptation efforts, including the right to life, the right to own and use property, the right to enjoy culture, and the right to adequate housing.

In addition to specific rights, the climate discussions could be strongly impacted by Article 2(1) of the ICESCR regarding the duty to provide international assistance and cooperation in fulfilling the relevant economic, social and cultural rights. In this regard, ICESCR Article 2(1) may also add a powerful rights-based substrate to the principle of common but differentiated responsibilities and the duties established under Article 4.5 of the UNFCCC for industrialized countries to transfer technology. Thus, the role that Article 2(1) of the ICESCR may play in this regard is especially important in the context of climate change, given the need for international cooperation in addressing a problem of global proportions, while allowing for the implementation of the right to development.

#### *II.4.1 Human Rights Law & Other International Regimes*

Traditionally, human rights obligations function in international law as obligations *erga omnes* and thus, by definition, are applicable law for all States in all their activities. Moreover, human rights are fundamental and cannot be contracted out of. In addition, certain human rights are recognized as *jus cogens*, thus having formal primacy over other international norms. Outside of *jus cogens*, human rights norms have more force than other norms given that they provide the moral foundation for the international community and thus concern fundamental values of the international community.

To the extent that the issue of how to relate to other regimes has been taken up, the human rights committees have consistently applied the standard that human rights are fundamental obligations of states which are not subject to 'balancing' tests. They can be mutually supportive with other regimes but only to the extent that such regimes remain compatible with human rights law. Even in the realm of the application of economic sanctions the CESCR conclusively stated in General Comment 8, that:

the provisions of the Covenant, virtually all of which are also reflected in a range of other human rights treaties as well as the Universal Declaration of Human Rights, cannot be considered to be inoperative, or in any way inapplicable, solely because a decision has been taken that considerations of international peace and security warrant the imposition of sanctions. Just as the international community insists that any targeted State must respect the civil and political rights of its citizens, so too must that State and the international community

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<sup>36</sup> Stephen Humphreys, *Climate Change and Human Rights: A Rough Guide* (International Council for Human Rights Policy 2008) Appendices 97

itself do everything possible to protect at least the core content of the economic, social and cultural rights of the affected peoples of that State.<sup>37</sup>

This is, however, nuanced by several doctrinal elements, especially for economic, social and cultural rights. This includes the principle of “progressive realization” of rights, taking into account the different capacities of countries to deliver on these rights, and the different timeframes in which the realization of some rights will have to occur.

From the point of view of the regime–fora relationship, the human rights bodies clearly view human rights as having priority over other standards or objectives. It is the rhetorical and substantive power of human rights that has made human rights language attractive, both to those wishing to limit the power and role of IP rights, as well as to those wishing to expand its role and power. Within the context of climate change, human rights has become an increasing part of the discussion, although it has yet to be fully addressed within the context of the CESCR.<sup>38</sup>

### III. FRAGMENTATION AND EXPANSION OF INTERNATIONAL LAW AND SYSTEMIC INTEGRATION

The most significant and authoritative attempt to address the question of fragmentation and expansion of international law has been undertaken by the International Law Commission (ILC).<sup>39</sup> This section describes the basic principles put forward by the ILC and the basic solution to conflicts that it prescribes. It then outlines some of the potential solutions to addressing the tensions between the various international regimes bearing on technology transfer and climate change, studied above.

The ILC’s report on the fragmentation of international law is actually titled: “Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law”. This reflects one of its key conclusions: that there is not necessarily a danger in the increasing complexity and diversity of international law.<sup>40</sup> This follows from the ILC’s belief that there are no conflicts between existing treaties that cannot be addressed within the framework of legal methodologies, including customary law and the Vienna Convention on the Law of Treaties (VCLT).

The ILC’s approach relies on the existence of the VCLT as a common frame for considering the issue of conflicts of rules and rule–making. The ILC analyzes concepts such as *lex specialis* and *lex posteriori*, but cautions against overly literal application of these principles. In particular, the ILC cautions that using such tools to invalidate a prior or more general law may be a fundamental error, unless a broader understanding of both treaties as operating within a system that maintains the existence, at least as an interpretive fact, of the prior or more general law.<sup>41</sup> In addition, in seeking to apply such

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<sup>37</sup> UN Economic and Social Council, ‘The relationship between economic sanctions and respect for economic, social and cultural rights’ (12 December 1997) para. 7, S/C.12/1997/8, CESCR General Comment 8

<sup>38</sup> The CESCR has decided to hold a 1–day consultation on climate change and economic, social and cultural rights.

<sup>39</sup> Martti Koskenniemi and others, ‘Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission’ (13 April 2006) UN Doc. A/CN.4/L.682; ILC, ‘Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law, Report of the Study Group of the International Law Commission’ (18 July 2006) UN Doc. A/CN.4/L.702

<sup>40</sup> Koskenniemi and others (n 39) para 222; ILC (n 39)

<sup>41</sup> Koskenniemi and others (n 39) para 32; ILC (n 39)

principles, the ILC grapples with the issue of “same subject matter” outlined in VCLT Article 30 on prior and subsequent treaties. The report notes that categories such as trade law, environmental law and human rights law are professional designations not based on any fundamental, natural partitioning of international law.<sup>42</sup>

The ILC divides the kinds of conflicts into four categories<sup>43</sup>:

- (a) Relations between special and general law;
- (b) Relations between prior and subsequent law;
- (c) Relations between laws at different hierarchical levels; and
- (d) Relations of law to its “normative environment” more generally.

The difficulty, of course, is in defining the type of relations at issue; for example, which law can be understood to be special and which one general. There can be reasonable disagreement, especially with respect to international environmental law and international economic law, as well as the increasing linkage between international environmental law and international human rights law. The issue of prior law is simpler, but surrounded by complications regarding whether the laws cover the same subject matter. For instance, the ILC categorizes the debate over trade and environment as a dispute between two special regimes under category (a), above.

### *III.1. The Questions of Conflict & Inter-Regime Tensions*

The ILC defines conflicts as “a situation where two rules or principles suggest different ways of dealing with a problem.”<sup>44</sup> In addition to conflicts, this paper addresses the question of inter-regime tensions, which, in addition to the interplay between rules or principles, involves governance and other structures set up within each regime that have a bearing on the attainment on other regimes’ objectives.

The ILC proposes to resolve conflicts in international law by emphasizing systemic integration anchored in VCLT Article 31(3)(c). This provision and the role of systemic integration are well known elements of customary law on treaty interpretation. VCLT Article 31(3)(c) states that “...There shall be taken into account, together with the context...(c) any relevant rules of international law applicable in the relations between the parties.”

Given its emphasis on dispute settlement in its work on systemic integration, the ILC also makes a useful distinction between jurisdiction and applicable law. While jurisdiction arises from a given instrument and is therefore limited, there need not be any limit to the scope of applicable law, unless the instrument also explicitly defines one. The issue of applicable law is crucial because a party must be presumed to have intended to situate itself within a broader corpus or system of law, which includes prior and/or related treaties existing at the time.<sup>45</sup> In this regard, the system of public international law imposes some limits on what elements of international law may be contracted out of in individual treaties.

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<sup>42</sup> Koskenniemi and others (n 39) para 254; ILC (n 39)

<sup>43</sup> Koskenniemi and others (n 39) para 18; ILC (n 39)

<sup>44</sup> Koskenniemi and others (n 39) para 25; ILC (n 39)

<sup>45</sup> Koskenniemi and others (n 39) para 45; ILC (n 39)



The ILC also spent significant effort analyzing the recent literature on “self-contained regimes” and whether they could truly exist in isolation from other elements of international law. The report concluded that the concept of “self-contained regimes” was an artificial construct that was not accurately descriptive of existing relationships between subject matters.<sup>46</sup>

In addition to the concept of “self-contained regimes”, the literature has also discussed the idea of “specialized regimes”<sup>47</sup> to describe the nature of the relationships operating in international law and policy. In this regard, decisions in one specialized regime can act to limit or prevent action in another. In the face of that reality, e.g. between trade and environment and the way that the trade regime has limited particular kinds of environmental actions, there is a real substantive and legal effect. This gives rise to the issue of inter-regime tensions, where the objectives of the regimes may be undermined by decisions adopted in another forum, even where there is no formal conflict.

The ILC Report, while also noting that specialized regimes may benefit from the *lex specialis* priority, nevertheless establishes that they may not derogate from *jus cogens*. Moreover, the following situations arise:<sup>48</sup>

- (1) The regime may not deviate from the law benefiting third parties, including individuals and non-State entities;
- (2) The regime may not deviate from general law if the obligations of general law are of “integral” or “interdependent” nature, have *erga omnes* character or practice has created a legitimate expectation of non-derogation;
- (3) The regime may not deviate from treaties that have a public law nature or which are constituent instruments of international organizations.

However, while this provides a framework for looking at specialized regimes with respect to general international law, it provides limited guidance as to the relations *between* specialized regimes. In addition, there is not much guidance as to what actually defines a specialized regime, except as instantiated in a treaty or a set of treaties forming a formal framework, e.g., the WTO Agreements.

The ILC also has an extensive discussion on the limitations of so-called savings clauses that purport to define a particular relationship to other treaties and regimes.<sup>49</sup> The report notes that most go only so far as to seek coordination and harmony with either a specific regime or all other related regimes, but do not go so far as to detail specific rules of priority with respect to other treaties or regimes.<sup>50</sup>

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<sup>46</sup> Koskenniemi and others (n 39) para 193; ILC (n 39)

<sup>47</sup> Anja Lindroos and Michael Mehling, ‘From Autonomy to Integration. International Law, Free Trade and the Environment’ (2008) 7 Nordic Journal of International Law 253

<sup>48</sup> Martti Koskenniemi and others, ‘Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission’ (13 April 2006) para 154, UN Doc. A/CN.4/L.682; ILC, ‘Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law, Report of the Study Group of the International Law Commission’ (18 July 2006) UN Doc. A/CN.4/L.702

<sup>49</sup> For example, the TRIPS Agreement states in Article 2(2) “Nothing in Parts I to IV of this Agreement shall derogate from existing obligations that Members may have to each other under the Paris Convention, the Berne Convention, the Rome Convention and the Treaty on Intellectual Property in Respect of Integrated Circuits.”

<sup>50</sup> Martti Koskenniemi and others, ‘Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission’ (13 April 2006) para 272–282, UN Doc. A/CN.4/L.682; ILC, ‘Fragmentation of International Law: Difficulties Arising From the

### III.2. *The Principle of Systemic Integration*

The ILC report puts forward a principle it calls “systemic integration,” rooted in the application of VCLT Article 31(3)(c), to address the potential conflicts that arise as a result of the diversification and expansion of international law. The principle is premised on the insight that at the core of all the legal approaches and techniques to address conflicts is the idea of relationships within a broader system. The ILC suggests that all interpretive decisions should take place against that broader systemic background with full awareness of the links, accompanied by a proactive attempt to integrate different rules with each other and that broader systemic background which consists of general international law, *jus cogens* obligations, and obligations *erga omnes*.<sup>51</sup> Thus, care must be exercised not to invalidate other provisions in other treaties and regimes. Interpretation should render both provisions operational and compatible, and if that is not possible, the rule that is determined to have priority must nevertheless take the other rule into account.

Fundamentally, systemic integration is about ensuring coherence by treating each regime as if it is part of an intentional system with a particular shared direction. The ILC reiterates, and is quite adamant, that VCLT Article 31(3)(c) is explicitly meant to treat other treaties and regimes as part of the systemic background against which interpretation should take place. It is a mandatory part of the interpretation process and is not subordinate to other interpretive sources in Article 31, including any examination of the ordinary meaning of the text.

In light of the ILC’s conclusions regarding the ability of systemic integration to address conflicts and tensions between specialized regimes, this paper will apply this framework to the issue of technology transfer at the UNFCCC.

## IV. SYSTEMIC INTEGRATION APPLIED TO TECHNOLOGY TRANSFER AT THE UNFCCC

An effective fight against Climate Change will require action across various areas that will merit a framework of systemic integration. Systemic integration should address international, regional, and national regimes, and the interaction among the various regimes. Van Asselt, Sindico and Mehling have recently pointed out the relevance of the systemic integration concept of the ILC to the UNFCCC.<sup>52</sup> This paper tries to take their point a step further and apply it to the specific case of technology transfer for climate change, IP, and human rights.

Van Asselt, Sindico and Mehling critique the narrow focus on ‘conflicts’ that emerged after the ILC report. This narrow focus on ‘conflicts’ only examined treaty language, ignoring other venues of activity and decision-making that can sometimes be more relevant.<sup>53</sup> Specifically, Van Asselt, Sindico

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Diversification and Expansion of International Law, Report of the Study Group of the International Law Commission’ (18 July 2006) UN Doc. A/CN.4/L.702

<sup>51</sup> Martti Koskenniemi and others, ‘Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission’ (13 April 2006) para 410–415, UN Doc. A/CN.4/L.682; ILC, ‘Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law, Report of the Study Group of the International Law Commission’ (18 July 2006) UN Doc. A/CN.4/L.702

<sup>52</sup> Harro Van Asselt and others, “Global Climate Change and the Fragmentation of International Law” (2008) 30 L and Policy 423

<sup>53</sup> *Ibid* 425

and Mehling examine the legal role and force of decisions by bodies such as the UNFCCC COP and the relationship to other treaty fora and decision making bodies. This paper is concerned in particular with the relationship between the UNFCCC COP, the WTO TRIPS Council, the WTO General Council and the two major human rights committees (the Committee on Civil and Political Rights, and the Committee on Economic, Social and Cultural Rights). This paper will focus on how a broader view of the venues for decision-making may provide a better indication of where actual conflicts may be, and where actual opportunities for systemic integration may exist.

The first form of application of the principle of systemic integration requires the determination of a methodology that can identify which regimes and treaties merit integration. Regimes and treaties that merit integration will depend on whether a treaty deals with the same or related subject matter. In this connection, a “basic effects” test could be employed, involving an examination of whether or not one set of provisions in a treaty would essentially limit, negate or impair the effectiveness of other provisions or regimes. However, when looking at applying the basic effects test, *i.e.*, on the realization and/or effectiveness of the provisions in another treaty or regime, the first place to look for guidance is to treaties that share objectives. Once shared objectives are established, a connection can be clarified by seeking specific shared provisions that suggest that the provisions need to be read together in some fashion to give effect to all of them.

A second form of application of the systemic integration principle may be applied by looking at the competencies of particular treaty regimes and their obligations to address particular issues. Competency is a subject matter question which overlaps with jurisdiction to a certain extent. Though competency will be rooted in the constitutive instrument of the treaty or forum, a second effects test that will require a fora examination of the areas of law that may determine the effectiveness of the regime and integrate those bodies of law as applicable law within the fora. The aforementioned approach has been adopted by the WTO Panels and the Appellate Body. Arguably, this approach should be adopted by other regimes because it provides the target for action, albeit with an important variation: competency will require a minimum awareness of the applicable law and an obligation to not to impair its effectiveness. The required minimum awareness will create an obligation to act and incorporate relevant standards into norm-setting and treaty interpretation.

The second approach above provides the tools and a methodology to determine the regime that can be integrated with outside norms against the general background of international law. By following this approach, the forum’s interests and goals will continue to be pursued while also integrating common provisions to ensure its effect and proper execution of measures. In addition, the approach will ensure the elimination of artificial barriers to engagement on issues of common concern.

Finally, there is dispute about whether there is an empirical basis for assertions that IP constitutes a barrier to technology transfer. Though research on this question has been conducted there are no definitive conclusions, in particular on matters of licensing practices. However, it is clear that IP does not pose a barrier to the transfer of non-IP protected technologies because the technologies and know how are either in the public domain or potentially vulnerable to reverse engineering. Instead, other sources, such as absorptive capacity and access to capital, contribute to the problem of transferring technology. This paper has identified legal doctrines and approaches that may pose conflicts to States that attempt to transfer technology, as provided in the UNFCCC.

#### **IV.1 Objectives and Methodologies**

Within the regimes of IP, international human rights, and technology transfer the shared objective is sustainable development. The preamble to the Marrakesh Agreement establishing the WTO recognizes

the objective of sustainable development. The TRIPS Agreement gives effect to sustainable development in Articles 7 and 8.1. The Appellate Body has acknowledged that the concept of sustainable development must “give colour and texture” to WTO obligations under the WTO covered agreements.<sup>54</sup>

The UNFCCC also has sustainable development as a key objective. The Preamble and Objectives (Article 2) of the UNFCCC recall the principle sustainable development, as well as the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972.

While the ICESCR predates some of the conceptual framework that built the concept of sustainable development, human rights are the third pillar of sustainable development, and are thus understood as core to the concept. The International Law Association, for example, in its New Delhi Declaration Of Principles of International Law Relating to Sustainable Development, has formulated the “principle of integration and interrelationship, in particular in relation to human rights and social, economic and environmental objectives”.<sup>55</sup>

Sustainable development has been a useful way of reconciling objectives that have sometimes been considered conflicting i.e. social equity and stability, economic growth and environmental protection. While it has been a useful rhetorical tool, it also has substantive content which can inform legal analysis. The WTO has done so, for example, in its jurisprudence on Article XX, in considering what are exhaustible natural resources.<sup>56</sup>

The Brundlandt Report (*Our Common Future*, 1987) defines sustainable development as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” In addition, the report outlines other elements including:

- efficient resource allocation to meet basic human needs;
- equitable and just allocation of resources and benefits arising from their use;
- ecological sustainability – maintaining the long-term viability of supporting ecosystems;
- social sustainability – fulfilling people’s cultural, material, and spiritual needs in equitable ways;
- increased accountability in institutions of governance;
- increased and meaningful public participation;
- strengthening of local democracy;
- focus on environmental rights;
- economic viability; and finally,
- greater sensitivity to conditions in the Global South.

The concept of sustainable development has become a core element of international norm-setting.<sup>57</sup> All mainstream definitions require three things: (1) integration of social, environmental and economic

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<sup>54</sup> WTO, *United States – Import Prohibition of Shrimp and Shrimp Products* (6 November 1998) WT/DS58/R/AB, para 129

<sup>55</sup> International Law Association Resolution 3/2002, ‘Sustainable Development, New Delhi Declaration Of Principles Of International Law Relating to Sustainable Development’ (Report of the 70th Conference New Delhi 2–6 April 2002)

<sup>56</sup> For an analysis of this see Nathalie Bernasconi-Osterwalder and others, *Environment and Trade: A Guide To WTO Jurisprudence* (Earthscan, London 2006) 79

<sup>57</sup> Center for International Environmental Law, *One Species, One Planet: Environmental Justice and Sustainable Development* (CIEL 2002) 3 <[http://www.ciel.org/Publications/OneSpecies\\_OnePlanet.pdf](http://www.ciel.org/Publications/OneSpecies_OnePlanet.pdf)> accessed June 8 2010

objectives and methodologies; (2) integration of the interests of future generations; and (3) transparency, participation and accountability of all relevant stakeholders.<sup>58</sup> The definition provides a framework for standards and norms from other institutions to integrate and apply sustainable development as applicable law, or form of information on the applicable law of another regime.

However, the concept is also useful in the way that it is fundamentally tied to human rights through its social objective and thereby linking human rights to economic and environmental considerations. The link between human rights and the environment has become an accepted element of broader international law. Specifically, the right to a healthy environment has become an increasingly important element of international policy making and has lent strength to legal challenges against environmental degradation or pollution that affects the right to life, the right to health, as well as other human rights affected by particular acts of environmental degradation or pollution. The right to a healthy environment can be found in Article 12(2)(b) of the ICESCR that calls on states to “improve all aspects of industrial and environmental hygiene.” It is also found as a corollary to the realization of other rights such as the right to life, health, and a safe working environment.<sup>59</sup> However, human rights are an integral element of international law making, where they function as *erga omnes* obligations. Thus, the failure to explicitly mention human rights law as applicable law in a treaty is no obstacle to its application in that treaty.

In addition, the standards for when and how human rights may be abrogated or limited would apply, thus placing the burden on those seeking to invalidate a measure that achieves or is aimed at achieving fundamental human rights. As noted earlier, the role of human rights in the specific context of technology transfer for climate change may pose some problems given the unfortunate role that General Comment 17 has played, as discussed previously. However, the human rights impacts of climate change on the right to health, food, and water provides a way to argue that technology transfer is required to meet human rights standards. Thus, measures pursued with the aim of ensuring the right to health, food, and water would also be subject to the same analysis.

Finally, sustainable development is crucial to the way in which the climate change problems must be solved. Addressing climate change requires a fundamental change in economic production that will address negative impacts on human rights, while ensuring development and the progressive realization of economic, social and cultural rights.

Focusing on shared objectives, such as sustainable development, may also enable a way around the problem of scope of membership of different treaties. The *EC-Biotech* WTO panel has argued that VCLT Article 31(3)(c) only applies in the WTO context, to treaties that have the exact same membership as the WTO. The ILC has countered that since that is a virtual impossibility in international law, that approach robs VCLT Article 31 of any application or meaning within the context of the WTO. The ILC suggests that this is especially dangerous for other treaties of almost equally broad application, such as the VCLT or human rights treaties, which differ in membership by a small number of members.<sup>60</sup>

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<sup>58</sup> Ibid 4

<sup>59</sup> For more detail see CIEL, “One Species, One Planet: Environmental Justice and Sustainable Development” (CIEL 2002) 11 <[http://www.ciel.org/Publications/OneSpecies\\_OnePlanet.pdf](http://www.ciel.org/Publications/OneSpecies_OnePlanet.pdf)> accessed June 8 2010

<sup>60</sup> Martti Koskenniemi and others, ‘Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission’ (13 April 2006) para 471, UN Doc. A/CN.4/L.682; ILC, ‘Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law, Report of the Study Group of the International Law Commission’ (18 July 2006) UN Doc. A/CN.4/L.702

Per VCLT Article 30(4), between two parties who are parties to the same set of agreements, an earlier treaty only applies to the extent that its provisions are compatible with the later treaty. While addressing a relatively narrow set of circumstances, the VCLT envisions some divergence of interpretation as to obligations between specific member states. The consensual divergence of interpretation suggests that there is no blanket restriction on the application of Article 31(3)(c) only to circumstances where all member states are parties to an agreement. In particular, the examination of whether there is incompatibility will require the application of all elements of Article 31.

Article 30(2) also provides guidance on how to relate to other treaties on the same subject matter. It notes that: “When a treaty specifies that it is subject to, or that it is not to be considered as incompatible with, an earlier or later treaty, the provisions of that other treaty prevail.” In this context, there is an obligation on part of a forum to seek out those other treaties and regimes that may state such facts and may influence the applicability of the existing treaty as to the specific parties in a dispute. Arguably, where a treaty’s jurisdiction and competency reaches out to matters also covered by other agreements, this constitutes the “same subject matter” for the purposes of establishing an Article 30 conflict.<sup>61</sup>

By focusing on a congruence of shared objectives between the treaties and the governing bodies, we can seek entry of the objectives of another agreement through VCLT Article 31(1), “[a] treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and *in the light of its object and purpose*” (our emphasis). Thus, despite the fact that a party may not be a member of another treaty, where the treaty makes reference to another agreement or shares its objectives, the party should be the subject of attempts to integrate and to select among methods of achieving those goals that select for methodologies that still enable the achievement in both agreements of the shared objective. In this sense, they mutually can be limiting and supportive.

Going forward, an agreement regarding the role of an agreement to which another party is not a member would still be effective regarding non-parties because it would be a commitment that they have expressly agreed to in another forum.<sup>62</sup> Article 35 of the VCLT would apply, as the State’s agreement would be considered to have agreed to be bound, in a specific manner, in writing. Interestingly, Article 35 does not require that this be done through accession or treaty amendment but through some form of agreed decision, thus enabling COP decisions, and perhaps decisions of other governing bodies, to have effect. Such an agreement would also apply as an agreement between the parties to a treaty under Article 31(3)(b) on the interpretation of a treaty or the application of its provisions.

Another way to look at the shared objectives in technology transfer is to look at specific shared provisions aimed at technology transfer. In the TRIPS Agreement (Articles 7 and 66.2), in the ICESCR (Article 15(1)(b)) and in the UNFCCC (Article 4.5) there are shared provisions that emphasize the promotion of transfer of technology to developing countries as an important aim of the agreement.

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<sup>61</sup> Martti Koskenniemi and others, ‘Fragmentation of International Law: Difficulties arising from the Diversification and Expansion of International Law: Report of the Study Group of the International Law Commission’ (13 April 2006) para 23, UN Doc. A/CN.4/L.682; ILC, ‘Fragmentation of International Law: Difficulties Arising From the Diversification and Expansion of International Law, Report of the Study Group of the International Law Commission’ (18 July 2006) UN Doc. A/CN.4/L.702

<sup>62</sup> Harro Van Asselt and others, “Global Climate Change and the Fragmentation of International Law” (2008) 30 Law and Policy 423

Thus, in addition to shared objectives, there are shared provisions that outline a particular methodology for achieving the goals i.e. technology transfer that goes beyond the protection of IP and requires some action by developed country governments. The effect of a systemic integration approach would be to ensure that all these provisions are made operative. A UNFCCC technology transfer mechanism that may affect IP rights and might be challenged on the basis of the TRIPS Agreement may find shelter under the principle of ensuring provision effectiveness under both the UNFCCC and TRIPS Agreement. Consideration of the jointly shared objectives will have to take into account that such methods were envisaged within the TRIPS Agreement in referring to technology transfer and that UNFCCC parties were aware and knowledgeable about the scope and meaning of such provisions when constructing a mechanism under the UNFCCC.

However, one area of the law that remains somewhat outside of this analysis is international investment law. While human rights obligations may relate to foreign investments, the role of sustainable development as an articulating principle of shared objectives remains underdeveloped. Thus the intensity of connection between investment law and other regimes through shared objectives remains a question.

Finally, while the foregoing discussion focuses on the way that a shared objective analysis would enable international trade fora to better identify the outside law to apply to the interpretation of WTO Agreements, it is important to note that the analysis flows in the other direction as well. To the extent that economic fora share similar objectives and shared provisions, the objectives and relevant provisions of that agreement would be treated as applicable law in the environmental and human rights regime. While this may pose some danger, given that international trade law has already had a significant chilling effect on multilateral environmental policy-making, it may be appropriate to have that occur within a predictable and equitable framework, in which both fora are recognized to have shared competencies.

## **IV.2 Competencies**

One of the key lessons to be learned from the TRIPS Agreement and public health debate is that economic policy, especially IP policy, is not separate from other key policy areas. Economic policy is integral to the development and achievement of issues like food security, health, and, in this case, technology transfer for climate change. Patent protections and transactions form part of the set of policy tools provided within IP frameworks i.e. the broad panoply from patent pools, open source approaches, utility models, etc. No one would suggest that policies on these issues be left only to WIPO or to the WTO. The competence of WIPO in IP is extensive, but it is also limited by lack of internal expertise and knowledge regarding the various subject areas that its work affects. Likewise, the same applies to member state participation and rule-making at the WTO. Therefore, the argument that separate organizations should limit themselves to the areas of work where they have mandate and competence is no longer viable when faced by challenges of broad scope, such as climate change. Thus, one of the ways in which systemic integration is to be operationalized, in this context, is for organizations to integrate their programmes and work together. This is referred to as the “competencies approach.”

A first step in ensuring systemic integration under the competencies approach is to identify linkages between fora that require that they be linked and address the same issues. Recognition of that linkage is crucial. There may in fact be gradations of linkages, for example, the link between IP policy and child labor may be more tenuous than the link between IP and public health. In the broader context of IP, other fora who should be involved and who have competence related to IP and its relationship to other issues include: the UN Economic and Social Council and the Commission on Science and

Technology for Development; the International Labour Organization (through Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent States); the Food and Agricultural Organization and the International Treaty on Plant Genetic Resources for Food and Agriculture; United Nations Educational, Scientific and Cultural Organization; the Convention on Biological Diversity; the World Health Organization; the United Nations Industrial Development Organization; United Nations Conference on Trade and Development; the WTO and TRIPS; the Human Rights Council; the Committee on Economic, Social and Cultural Rights; and finally, the UNFCCC.<sup>63</sup>

The argument for the institutional competencies approach is also supported by the role that the WTO has played in IP policy-making. IP is not a natural fit with a system intended to remove barriers to trade and the movement of goods. IP is specifically aimed at restricting the movement of knowledge. The WTO was able to make an argument for including IP by arguing that there are crucial 'trade-related' aspects of IP that it had to deal with. That same argument can therefore be applied by other fora, such as the UNFCCC, with far more justification.<sup>64</sup>

The competencies approach also has another strong argument in its favor. The issue of how IP can ensure global welfare cannot be addressed in a single forum because no one organization has the mandate to ensure global welfare. However, some organizations may have a broader mandate that approaches ensuring global welfare, such as the UNFCCC, in addressing climate change. These types of organizations would be obligated to take on these issues and to engage other institutions in norm-setting processes to ensure that there is systemic integration. The increasing tension in this regard is due to the fact that such large issues have been left to organizations with limited mandates.<sup>65</sup>

Unfortunately, this may encourage institutions to engage in fields where they have little experience or perhaps even an active antipathy. For example, institutions such as the World Bank, the WTO and others have not refrained from becoming involved with subject matter tangentially related to their regimes, with which they have little or no competence. In that sense, such institutions are already addressing human rights and environmental standards and rules within their systems. The danger that exists is that they have not recognized the need for also applying the international law related to that subject matter or their own lack of knowledge in that field. It has been recognized that there is a need to apply other international law and that there is a lack of in-house knowledge within a particular fora. The recognition reasonably suggests the need to interact with the decision makers who have more expertise in the relevant applicable law.

The competencies approach to systemic integration is also attractive because, before decisions are made to codify one particular approach over another, the approach allows for ongoing dialogue and innovation<sup>66</sup>, in multiple fora. Therefore, this suggests that each venue should fully engage in the attempt to integrate with other venues, while simultaneously bringing each actor's skills and viewpoint to the problem. This may be another way for the regular balancing to still take on some force after the fact.

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<sup>63</sup> For a review of the specific competencies with respect to intellectual property issues of each of these organizations see Sisule F Musungu, 'Rethinking Innovation, Development and Intellectual Property in the UN: WIPO and Beyond' TRIPS Issues Paper 5 (Quaker International Affairs Programme, Ottawa 2005) 25

<sup>64</sup> Ibid 22

<sup>65</sup> See *e.g.*, Ibid 6

<sup>66</sup> For a discussion of this view see Harro Van Asselt and others 'Global Climate Change and the Fragmentation of International Law' (2008) 30 Law and Policy 423, 426



In sum, fora should be far more conscious about how they intend to relate to other regimes and fora. The relationships to other regimes and fora should be based on the principles of integration, coherence, and the achievement of shared objectives like sustainable development.

### IV.3 Implications for UNFCCC Policies and Norm-setting

In the absence of proactive policies, insufficient technology transfer will take place under existing international market conditions. Fear of losing control over IP rights (IPRs) by private actors, as well as the fact that IPRs lead to prices above the socially optimal (competitive) level, means that technology development and diffusion to address climate change is unlikely to happen without significant interventions.<sup>67</sup> Therefore the following policy interventions and directions should be pursued:

- decreasing transaction costs of developing country buyers in accessing the international knowledge market;
- decreasing the transaction costs of international rights holder's when making their knowledge and technologies available to developing country actors;
- reducing the cost of acquiring technology;
- reducing the cost of absorbing existing technologies;
- increasing capacity and incentives for domestic innovation.<sup>68</sup>

To achieve these goals, the UNFCCC will have to provide direction and guidance to national policy makers and to decision-makers in other fora to cooperate, adapt, and integrate these objectives into their norm-setting and work programmes. The preceding sections provided some of the legal basis for how the UNFCCC can act in this area in ways that may interact with other regimes to accomplish technology transfer for climate change. The conclusions that can be drawn are that those regimes must take into account the objectives of addressing climate change in assessing potential conflict with UNFCCC provisions, while the UNFCCC will also have to incorporate and give effect to the objectives of those other regimes. The previous sections also made the argument for why it is important to consider that the UNFCCC has competence to establish norms and to establish how it will interact with other national provisions.

The sections that follow suggest some concluding thoughts on the ways that the UNFCCC Member States might wish to consider the linkages and relationships between IP, human rights and technology transfer for climate change and the role of systemic integration.

#### *IV.3.1 Avoidance of conflicts*

Going forward, a key step to enable the UNFCCC to address technology transfer will be to rely on proactively avoiding recognized conflict conditions. Proactive conflict avoidance accentuates non-norm setting solutions like joint cross-border research and development (R&D) that will ensure that all involved parties have ownership. Studies have shown that investment in R&D has a significant impact on technology productivity and capacity building.<sup>69</sup> Providing equal access to R&D subsidies and fund to firms from developing countries is a crucial way to encourage technology transfer without stumbling into a conflict scenario.

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<sup>67</sup> Bernard Hoekman and others, "Transfer of Technology to Developing Countries: Unilateral and Multilateral Policy Options" (1 June 2004) World Bank Policy Research Working Paper No. 3332, 16 <<http://ssrn.com/abstract=610377>> accessed 8 June 2010

<sup>68</sup> Ibid 16

<sup>69</sup> Ibid 8

The establishment of global voluntary patent pools is another avoidance strategy. Global voluntary patent pools consist of rightsholders placing technologies in exchange pools where rightsholders are able to access others technologies, the know-how, and the capacity building to make the most effective use these other technologies. To further avoid conflict, parties could place technologies and know-how in the public domain to make them readily accessible.

Additionally, the UNFCCC could focus on ensuring appropriate policies in source countries, to provide incentives for outward foreign-direct investment (FDI) that includes technology transfer. This could include investment guarantees, insurance, as well as subsidies. The UNFCCC could also require source countries to specifically and unilaterally open their markets, by lowering their tariffs on environmentally sound technologies produced by developing countries, especially by low and middle income countries.<sup>70</sup>

The competition authorities of industrialized countries should investigate anti-competitive behavior of their companies in developing countries with little or no capacity to pursue competition policy, including adequate remedies.<sup>71</sup> Additionally, these authorities should cooperate with competition authorities of middle income and larger developing countries to investigate firms that engage in anti-competitive behaviour in developing countries.

The UNFCCC could create a multi-user platform where firms, countries, and other actors could transparently negotiate licenses to technologies. Meanwhile the suggested multi-user platform could receive funding from the UNFCCC financing mechanism. UNFCCC's financial mechanism could build on the technology information of TT: CLEAR, the UNFCCC's online information platform.

With respect to the CDM, a specialized investment regime could be put in place for projects under the CDM. The regime would govern how performance requirements for technology transfer and local content would apply within the framework of sustainable development and technology transfer.

Ultimately, the key to the avoidance of conflict is for UNFCCC negotiators to establish the appropriate process and mechanisms based on cooperation and an understanding of the effects of climate change and the realization of human rights. Ideally, the UNFCCC will be able to establish a process that recognizes the broad range of transfers involved in technology transfer and establishes a mechanism that can bypass potential regime conflicts. The best way to avoid regime conflicts with respect to IP in the UNFCCC may be for developed countries to fulfill their financing pledges to assist developing countries, and to pay for the full incremental costs of technology transfer, including the cost of patent licenses. In the absence of such actions, conflict arises on how to address the costs imposed by the IP system, as states seek to act unilaterally to achieve the technology transfer aims of the climate change regime.<sup>72</sup>

#### *IV.3.2 Proactive Options*

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<sup>70</sup> Ibid 20

<sup>71</sup> Ibid 26

<sup>72</sup> For a specific example of this argument with respect to compulsory licensing see Dalibdyebo Shabalala, 'Cooperation nor compulsion on clean technology transfer' [3 June 2009] SciDevNet <<http://www.scidev.net/en/opinions/cooperation-not-compulsion-on-clean-technology-tra.html>> accessed 8 June 2010

The importance of a clear and consciously chosen strategy for interacting with other regimes cannot be overstated with respect to the climate change regime. Given the broad range of areas affected by climate change, conflicts regarding both objectives and methodologies are inevitable.

First, the new UNFCCC Agreement, or the COP decisions relating to any such Agreement(s), must elaborate general interaction and savings clauses that account for the broad shared objectives and the specific shared provisions among the UNFCCC and other regimes. These “interaction clauses” will enable the agreement to more comprehensively address the relationship to other regimes, and put forward a pro-active mode of cooperation rather than one of avoidance.<sup>73</sup> In the specific case of technology transfer, an option may be the use of an International Declaration on Climate Change and Intellectual Property Rights (DCCIPR). Similar to the Doha Declaration on Public Health, DCCIPR will be an interpretive statement of existing international law on the issue, while also providing a decision framework for organizations that encounter the issue. While the Doha Declaration is largely limited to discussion on compulsory licenses, the DCCIPR may need to be broader. The proposed declaration should address the full panoply of flexibility and policy options available to member states under the international intellectual property regimes.

There are some lessons that can be learned from the experience of the Doha Declaration. One key lesson is that a discussion on the proposed declaration should not, and is not required to take place in the context of the WTO. Abbott has argued that the economic and political power imbalance may be less pronounced against developing countries in the UNFCCC than in the WTO. It may be more appropriate to seek such a declaration in the context of the broader mandate of the UNFCCC rather than the relatively narrow focus of the WTO’s TRIPS Agreement.<sup>74</sup>

The proposed DCCIPR would outline the urgency of climate change, the urgency of the human rights challenge, the key obligations of states to fulfill and protect those human rights, and the necessity for technology transfer to achieve those rights. This may pose a slight problem for states that are not a party to the ICESCR, but language that is not explicitly based on the ICESCR may also be found. The proposed declaration could provide interpretive force, but only if adopted through a COP decision and directed to be shared with the Human Rights Council, the WIPO General Assembly, and the WTO General Council as well as the UNCITRAL and ICSID rule-making bodies.

There are, nevertheless, some areas of existing international economic law, especially within the TRIPS Agreement and under treaties administered by WIPO, which might need to be addressed specifically. The UNFCCC can specifically address this purpose by either making an agreement on these issues that notes that it is acting as *lex specialis* (a special application of the general law), or to request that the other organizations proceed to make the adjustments. Comity would make the second option more attractive, but in terms of ensuring that the effectiveness of the UNFCCC takes priority, it may be best to carry out such standard setting within the UNFCCC. The specific policy directives that the UNFCCC could pursue include:

- Reinstating the non-actionability of R&D subsidies in the WTO, only for developing countries, for the purpose of enabling developing countries to provide subsidies for environmentally

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<sup>73</sup> Harro Van Asselt and others, ‘Global Climate Change and the Fragmentation of International Law’ (2008) 30 Law and Policy 423, 431

<sup>74</sup> Frederick M. Abbott, *Innovation and Technology Transfer to Address Climate Change: Lessons from the Global Debate on Intellectual Property and Public Health* (Intellectual Property and Sustainable Development Series: Issue Paper 24, June 2007)

sustainable climate technologies.<sup>75</sup> Non-actionability could also be made available for those developed country subsidies that included and enabled participation of developing country projects.

- Expanding the approach of TRIPS Article 66.2 in order to include all developing countries, and not just least-developed countries, especially those without a strong scientific or technological base.<sup>76</sup>

These examples illustrate the possibility of an agreement to be reached under the UNFCCC, without creating actual conflict(s) in international law. The aforementioned examples would not require amendment to the TRIPS Agreement or to treaties administered by WIPO. While there may be some argument regarding minimum levels of protection, an agreement in the UNFCCC could also state that such action are *per se* covered by either general exceptions in IP law, or are considered to be acceptable exceptions and limitations under Article 30. These would function as subsequent agreements under article 31(3)(b) of the VCLT.

In many ways, the fragmentation of international law arises from the mistaken assumption of many regimes that their silence on how they should relate to other regimes will protect them from interference from other regimes. The increasing interlinkages created by the expansion and diversification of international law have put that illusion to rest. The only option available is active engagement. It is the terms of that engagement that this paper has tried to elucidate for technology transfer to address climate change. The first lesson of the ILC report is that regimes and fora need to be far more aware of the areas of subject matter which impact their mandates, and upon which their mandates impact. This paper has tried to provide some methodologies for accomplishing that in this specific case.

The second lesson is that regimes and fora need to be as clear as possible, without necessarily detailing every aspect, on the nature of the relationship between their norms and other relevant norms. This paper believes that the systemic integration concept put forward by the ILC presents the best chance for doing so in a manner that maintains the integrity of each regime while engaging in respectful and innovative dialogue with other regimes that have shared objectives. The freedom that the climate change regime has to fashion its relationship with other fora is important because it is a rare opportunity due to the scope and scale of the challenge that is to be faced within the next few decades.

## V. CONCLUSION

Technology is a crucial component of most strategies to effectively address climate change, for both mitigation and adaptation purposes. As the foregoing discussion shows, the transfer of climate change-related technologies involves a broad web of treaties, international decisions, doctrinal developments, and evolving customs. Many areas of international law are relevant to any discussion on technology transfer, including climate change law, IP law, human rights law and investment law.

There is growing concern over emerging conflicts and tensions between environmental, IP, human rights, and investment regimes in international law. While certain flexibilities are present in

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<sup>75</sup> Bernard Hoekman and others, 'Transfer of Technology to Developing Countries: Unilateral and Multilateral Policy Options' (1 June 2004) World Bank Policy Research Working Paper No. 3332, 25  
<<http://ssrn.com/abstract=610377>> accessed 8 June 2010

<sup>76</sup> Ibid

international IP agreements that might be useful in accelerating the transfer of technologies to fulfill public policy objectives, such as fostering low-carbon development or enhancing the climate-resilience of communities, actual use of these flexibilities has required interpretative direction in order to promote public policy objectives.

This failure is particularly problematic in the climate change context, as climate change requires a dynamic and enduring solution, given the broad array of subject areas in international law that are implicated by climate change. Although declarations may be useful in providing interpretive direction in certain instances, they have not proven to be a satisfactory response in providing a dynamic and enduring solution to normative conflicts that emerge when issues implicate several international legal regimes.

The methodology of systemic integration presents a means of reconciling normative conflicts within the broad web of legal and institutional interactions that influence – and may impede – the transfer of technologies to achieve objectives in addressing climate change. As shown in the preceding analysis, when applied to the objective of effectively addressing climate change, systemic integration may help to reconcile conflicts between environmental, economic and human rights regimes in international law by building on shared objectives.

The methodology of systemic integration may not resolve all conflicts in the complex web of legal authority that relates to climate change. However, the analysis above suggests that applying the methodology of systemic integration is a promising means of limiting the number and/or severity of conflicts in legal regimes, in order to accelerate the transfer of technologies for adequately responding to the human rights implications of climate change.