The Journal of World Intellectual Property (2007) Vol. 10, no. 2, pp. 97–124
doi: 10.1111/j.1747-1796.2007.00316.x

Patent Rights and Human Rights: Exploring their Relationships

Hans Morten Haugen
Diakonhjemmet University College

The assessment of the relationship between patent rights and human rights has resulted in several tentative findings, such as by the UN Sub-Commission on the Promotion and Protection of Human Rights, that there are "apparent" or "actual or potential" conflicts. Also the World Intellectual Property Organization says that "conflicts may exist" between the two. This article, which is based on a Ph.D. dissertation on the right to food and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement), analyzes the relationship between the two, based on an established understanding of conflict in international law, namely incompatible obligations. Also another level of conflict is introduced, namely conflict on the level of prescribed measures in one treaty which impedes the taking of measures prescribed by another treaty. Finally, the article assesses conflict on the level of impact. The findings are that strict legal conflict between the two is difficult to establish, but that there are serious concerns regarding their implementation. Developing states should make use of all the flexibilities that the TRIPS Agreement provides.

Keywords conflict between treaties; TRIPS; International Covenant on Economic, Social and Cultural Rights; the right to adequate food

After various UN bodies addressed the relationship between intellectual property rights and human rights in 2000 and 2001 (Chapman, 2002),[1] similar energy was not exercised in subsequent years. Recently, however, there are new initiatives that merit attention. From the observations made some years back, that there were "apparent conflicts" (UN, 2000, paragraph 2) or "actual or potential conflicts" (UN, 2001a, preambular paragraph 11), these new initiatives more appropriately analyze the relationship between the two sets of norms.

This article seeks to contribute to a more analytical insight into these relationships, with specific emphasis on the right to food and patent and plant breeders' rights,[2] as recognized in the International Covenant on Economic, Social and Cultural Rights (ICESCR)[3] and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement).[4] By this approach, the relationships between treaties, both whether they conflict and whether they can be mutually supportive, are analyzed with greater precision.

Patent protection is the category of intellectual property rights that has been considered the most problematic in relation to human rights: "Patents restrict the *actual usage* of an idea (in making a physical object), while copyrights restrict only copying an expression of an idea" (Hettinger, 1989, p. 52, emphasis added). At the same time, others emphasize that "[a]n inventor's patent does not deprive

others of an object which would not exist if not for the inventor'' (Nozick, 1974, p. 182).

In simple terms, realization of social human rights, such as the right to food or the right to health, is about the *accessibility* to important goods and resources. Patent rights, on the other hand, have, as a primary purpose, to *restrict* non-authorized access to new inventions.[5] This restriction in access is intended to promote inventiveness, commercialization of new products and access to new knowledge in the patent application.

There is general agreement on two issues relating to access. First, nobody should be restricted from continuing one's traditional activities. Second, everybody should be free to decide whether one wants to purchase the protected products and avail oneself to the conditions set by the right holder. At the same time, the mere *knowledge* of the fact that there exist certain products, but which are only available on the conditions set by the right holder and at a set price, necessarily creates dissatisfaction. This dissatisfaction is particularly strongly felt in the field of life-saving medicines. Other contributions have addressed specifically the issue of patented medicines (Chapman, 2002, pp. 873–9). Hence, *this* article will approach the issue from the equally important angle of patenting of seeds and plants.

The article addresses conventional agricultural activities. Hence, even if mis-appropriation of genetic resources and related knowledge is validly seen as a part of the problem relating to patent and plant variety protection, the analysis of relationship between such protection and human rights protection will not be based on these errors. Relevant examples of such wrongfully granted patents include quinoa (US patent 5,304,718, granted 19 April 1994—abandoned by the patent holder on 1 May 1998), turmeric (US patent 5,401,504, granted 28 March 1995—revoked 28 March 1997) and nap hal (European patent 0,445,929 B1: wheat and derived products, granted 21 May 2003—revoked 23 September 2004) as well as yellow beans (enola—US patent 5,894,079, granted 13 April 1999), which has still not been revoked. In these former cases the novelty or inventive-step criteria were subsequently not found to be met. Easier procedures for reassessments and possible revoking of granted patents must be made available at the patent offices so as to avoid negative consequences of wrongfully granted patents (see Llewelyn 2004, p. 158).

There are two primary angles for approaching human rights and patent rights. First, it is possible to analyze the recognition of patent rights *within* the human rights framework. Simply stated, the creative work of authors,[6] inventors[7] and also plant breeders[8] can be a basis for the enjoyment of human rights in accordance with article 15.1(c) of the ICESCR.[9] This is confirmed in General Comment No. 17 on article 15.1(c) (UN, 2005a). It is, however, not easy to identify when the rights of authors are recognized as human rights, and when these rights fall outside the scope of human rights protection. In this article, this relationship will not be analyzed in detail (see Haugen, 2007; Helfer, 2007). There are, however, three basic requirements that must be fulfilled for the recognition of authors' rights as constituting

human rights: there must be a direct connection between the product that is being protected and the person—or community—with the creative contribution (person–product link); this recognition must be crucial for this person's enjoyment of other human rights (interdependence between human rights); the enjoyment of this human right must not make it more difficult for others to enjoy their human rights (indivisibility between human rights).

Second, it is possible to analyze the *relationship between* human rights and patent rights based on how human rights might be negatively affected by the implementation of patent and plant variety legislation and enforcement of rights in accordance with such legislation. This is where most attention has been devoted recently.

The article will develop a framework for analyzing the relationship between these two sets of internationally recognized norms. Moreover, it will be asked what role human rights realistically will be able to play in future negotiations on patent and the plant breeders' rights legislation.

Critical Observations Made by UN Bodies

There are several UN organs that have made public positions on how intellectual property rights might be a concern in relation to social and cultural human rights. This section will examine the Sub-Commission on the Promotion and Protection of Human Rights, the Committee on Economic, Social and Cultural Rights, the High Commissioner for Human Rights, the UN Special Rapporteur on the right to food and the World Intellectual Property Organization (WIPO).

The Sub-Commission on the Promotion and Protection of Human Rights

The Sub-Commission confirms that article 15.1(c) of the ICESCR constitutes a human right, subject to limitations in the public interest.[10] The Sub-Commission gives no assistance in any of its resolutions for identifying the scope of such limitations, however. In both the resolutions, requests were made to several bodies to take into account and analyze intellectual property rights from a human rights' perspective.[11]

Moreover, the Sub-Commission addresses specific human rights in the two resolutions: health, food, education and adequate housing, the latter three in the context of the tasks of the Special Rapporteurs on these rights.[12]

While especially the first resolution from the Sub-Commission leads to substantial awareness-raising, as well as initiating processes and studies, it must be considered that these resolutions represent general observations and human rights principles rather than an actual examination of the relationship between the two sets of norms.

The Committee on Economic, Social and Cultural Rights

In November 2000 the Committee on Economic, Social and Cultural Rights (the Committee) held a ''day of general discussion'' on article 15.1(c). WIPO, the World

Trade Organization (WTO) and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) were among the participants.[13] One year later, the adoption of a statement on article 15.1(c) was made as a follow-up to the day of general discussion (UN, 2001e). This statement is analyzed by Chapman (2002, p. 868), but some particular aspects merit further attention. First, in paragraph 6, the Committee makes it clear that intellectual property rights and human rights are of a very different nature. Second, in paragraph 12 there is an approach for identifying a balance between human rights and intellectual property rights. The term "inconsistent" is applied to describe an intellectual property rights' regime that makes it more difficult for a state party to the ICESCR to comply with its human rights obligations.

The particular nature of intellectual property rights, however, implies that the potential positive effects are only seen after a certain period.[14] It is not likely that the introduction of—or strengthening of—patent rights particularly will come about without *any* short-term costs. Therefore, as only the costs and not the potential positive effects are seen immediately, a strict application of the approach outlined in paragraph 12 might hinder the introduction of patent protection, even in situations where it might have been desirable in the long term.

The General Comment No. 17 elaborates also on this relationship, saying that authors' rights "cannot be isolated from the other rights" and that states should ensure that their legal regimes for authors' rights ". . . constitute no impediment to their ability to comply with their core obligations . . ." imposed by other human rights (UN, 2005a, paragraph 35; see also paragraph 39(e); see also Haugen, 2007; Helfer, 2007).

The UN Special Rapporteur on the Right to Adequate Food

The UN Special Rapporteur on the right to adequate food, being challenged by the Sub-Commission (UN, 2001a, paragraph 12), has elaborated on the role of transnational corporations, including intellectual property rights, in the context of the realization of the right to food (UN, 2003, paragraph 29; 2004, paragraph 38).

The observations made primarily reflect the concerns expressed by different actors: "A marked paradigm shift has occurred from a system seeking to foster food security on the basis of the free exchange of knowledge to a system seeking to achieve the same goal on the basis of private appropriation of knowledge" (UN, 2004, paragraph 38). The Special Rapporteur, however, does not disregard patent rights.

The most interesting aspect of the resolutions that have been adopted on the basis of the reports from the Special Rapporteur is the paragraph containing a request to states, private actors and international bodies to promote the realization of the right to food within their sphere of influence and also in political negotiations.[15] At least, this sends a signal to all actors involved in international negotiations to take into account the human right to adequate food.

The High Commissioner for Human Rights

The UN High Commissioner for Human Rights has been exploring the relationship between intellectual property rights and human rights. Experts from the Office of the High Commissioner have been addressing these issues in international seminars on trade and intellectual property law (Walker, 2001). The main contribution is the study "The impact of the TRIPS Agreement on human rights" (UN, 2001b).

The most innovative part of the study is Section I.D., exploring a human rights approach to the TRIPS Agreement. The crucial question is "whether the TRIPS Agreement strikes a balance that is consistent with human rights" (UN, 2001b, paragraph 21). Five subsequent paragraphs address human rights concerns. First, in the TRIPS Agreement, the subject matter of human rights is expressed only in terms of *exceptions*. Second, in the TRIPS Agreement there is no guidance on how to *balance* rights with obligations. Third, the TRIPS Agreement *impedes* on the ability of states to decide their own development strategy. Fourth, the TRIPS Agreement protects the knowledge and technology relevant for, and in a *manner* appropriate for, industrialized States. Fifth, the TRIPS Agreement is *silent* on the protection of the heritage and technology of local communities and indigenous peoples.

At the same time, the study emphasizes that as the TRIPS Agreement gives flexibility, the human rights impact depends on how the TRIPS Agreement is actually being implemented (UN, 2001b, paragraph 28). The study does not, however, establish a framework for assessing the relationship, and while the title emphasizes "impact", the study is more a presentation of relevant concerns.

WIPO

In a response to the Sub-Commission's resolution 2000/7, WIPO acknowledges: "Realization of [article 15.1(a)[16] and 15.1(b)[17]] may depend upon the promotion and protection of [article 15.1(c)]; on the other hand, exercise of the latter rights may *in certain circumstances appear to hinder or frustrate realization of the former rights*" (UN, 2001d, p. 13; emphasis added).

Moreover, on the WIPO home page it is stated: "It is suggested by some that conflicts may exist between the respect for and implementation of current intellectual property systems and other human rights, such as the rights to adequate health care, to education, to share in the benefits of scientific progress, and to participation in cultural life".[18] While food is not explicitly mentioned, there can be no objective basis for treating the right to food different from the right to health. With regard to the realization of the respective rights, access to food-producing resources, such as seeds, is as important as access to health-enhancing medicines.

While neither of these represent a fundamental criticism of the working of the intellectual property system, these observations of WIPO are interesting, as they come from the UN organization that is mandated to promote intellectual property rights. At the same time, WIPO must act in compliance with the interests of its member states, which might effectively restrict the extent to which WIPO can address human rights issues.

While the WIPO treaties are only implicitly addressing public interest considerations, the 1975 Agreement between the United Nations and WIPO emphasizes in article 1 that WIPO shall take "... appropriate action ... for promoting creative intellectual activity and for facilitating the transfer of technology related to industrial property to the developing countries in order to accelerate economic, social and cultural development" (WIPO, 1975). The wording of this agreement has recently been brought up in discussions regarding a development agenda for WIPO.

This assessment of the most relevant documents on human rights and intellectual property rights shows that a rather general approach has been chosen. At the same time, the approaches have varied, from seeking to identify impacts, to proposing approaches for how human rights are to be taken into account. These documents, however, do not actually identify how a problematic relationship between the two sets of norms is identified (UN, 2001c, pp. 17–8) and how the appropriate balance is found.

Analyzing Relationships Based on Three Conflict Categories

When analyzing the relationship between two treaties, one can focus on either how they might be mutually supportive or how they are potentially conflicting. It was found in the introduction above that the object and purpose of the two treaties appear to differ, as the ICESCR emphasizes *access* as crucial for realization of the rights, while the TRIPS Agreement emphasizes how the rights granted make access possible only on the conditions set by the right holder. Therefore, it is necessary to elaborate on the possible conflicts first, and then assess how the treaties can be mutually reinforcing, primarily focusing on the role of human rights in the context of patent and plant breeders' rights.

This section will elaborate on how the relationship between the ICESCR and the TRIPS Agreement can best be addressed. A legal approach must start with the terms of the treaty, interpreted in their context and in the light of the treaty's object and purpose.[19]

Traditionally, the analysis on conflicts between treaties has asked whether obligations under one treaty are preventing the state party from complying with its obligations under another. This article applies the basic approach that the national implementation of one treaty makes it impossible to implement another treaty, in other words there are mutually exclusive obligations. As stated by an author: "A conflict in the strict sense of direct incompatibility arises only where a party to the two treaties cannot simultaneously comply with its obligations under both treaties" (Jenks, 1953, p. 426). There is conflict only if "... two norms remain reconcilable if one norm prohibits one or some, but not all, manners in which the other norm can be performed" (Sadat-Akhavi, 2003, p. 43).

This way of understanding conflict, focusing strictly on treaty terms, is still the most accepted, and establishes a rather high threshold for determining conflicts. In particular the ICESCR contains relatively few prohibitions, and there is a rather

wide margin of discretion when implementing the treaty. Hence, conflict, traditionally understood, does not arise under this technical, narrow approach if one treaty "... does not *compel* a State to act in a certain way" (Helfer, 2004, p. 76).

This narrow understanding of conflicts, emphasizing obligations, has recently been criticized, as there can also be conflict if an obligation of one treaty contradicts the right of another treaty (Pauwelyn, 2003a, pp. 184–7). Hence, the rights under one treaty to restrict certain acts regulated in another treaty could result in a situation where the two treaties are in conflict. The active use of exclusion and exception provisions—where these are available—is a key to avoid such conflicts.

The ICESCR is emphasizing the taking of appropriate measures for the realization of recognized rights. Article 2.1 of the ICESCR states:

> Each State Party to the present Covenant undertakes to take steps individually and through international co-operation especially economic and technical, to the maximum of its available resources with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures.

This is particularly explicit with regard to the right to food, as ICESCR, article 11.2 emphasizes that the state "shall take, individually and through international cooperation, the measures which are needed". The taking of measures must be understood as an obligation under the ICESCR, but *how* the measures are taken is primarily an issue that is left to the individual state.

Conflicts can also be identified on the level of prescribed measures. This understanding supplements the understanding of conflicts on the level of mutually exclusive obligations, and is particularly relevant in an analysis of human rights treaties, which are explicit in identifying measures but less explicit in defining prohibitions. This approach identifies conflict if the ability of the state to adopt the measures prescribed by one treaty is impeded as a result of the measures it has to adopt under another treaty. It is confirmed by three authors, writing specifically on the WTO Agreement and human rights (Marceau, 2001, p. 97; Pauwelyn, 2003b, pp. 1023–5; Petersmann, 2003, pp. 255–6).

In brief, when analyzing the relationship between two treaties, it is important to consider whether either of the two treaties prevents any state from freely adopting the measures considered necessary to achieve the full realization of the recognized rights. This applies particularly to the fulfillment of the Covenant, which shall be done "by all appropriate means" and "to the maximum of its available resources". Therefore, the second category of conflict between treaties (conflict on the level of inconsistent measures) can be applied as an addition to the first category (conflict on the level of inconsistent obligations).

A final category of conflict is addressing the *impact* of one treaty on another treaty. A conflict can be identified if the impact is negative, implying that this other treaty is more difficult to implement. This level of conflict is applied in many critical

studies on the TRIPS Agreement (Cohn, 2001, p. 315; Gana, 1996, p. 427; Yamin, 2003). Such analyses are of relevance for identifying (1) which interests the two treaties actually serve and (2) how one treaty can affect the resource base needed for fulfilling another treaty.

A problem with this conflict category is that it is very wide and the impacts of the TRIPS Agreement are difficult to quantify. How adopting patent and plant variety legislation might impact on the realization of human rights is hence subject to uncertainties, but some legal authors have pointed to potential negative impacts for the poor (Cullet, 2004, p. 262; Petersmann, 2004).

From a human rights' perspective, the term ''all available resources'' of article 2.1 of the ICESCR emphasizes the resource dimension as being important. Therefore, this third category of conflict cannot be excluded, but this category represents a less recognized *legal* approach for identifying treaty conflicts in international law.

The three categories of conflict will now be examined, applied on the ICESCR and the TRIPS Agreement. It must be recalled that conflict between treaties requires that there is overlap between the treaty provisions both *ratione materiae* (same subject matter), *ratione personae* (same state parties) and *ratione temporis* (same time). Of most interest is whether the ICESCR and the TRIPS Agreement actually address the same subject matter. The TRIPS Agreement regulates intellectual property protection, including patent protection for new, technical knowledge applied on genetic resources. The ICESCR regulates human rights protection, including means to ensure improved methods of production of food as well as access to the food which is essential for the enjoyment of the right to food, in article 11.2. Moreover, article 15.1 recognizes the right of everyone to enjoy the benefits of scientific progress and its application (see note 18) and the right of the inventor to enjoy the moral and material interests resulting from his or her scientific production (see note 7), both paragraphs potentially including food production. Common for these provisions is that they relate to ''improved food''.

Therefore, while there are obvious differences between the subject matter in the human rights system (human beings) and the patent and plant variety protection system (inventions or plant varieties), the rights recognized in the two systems might *relate to* physical food or improved food. The treaties do not need to *regulate* this subject matter in an identical way.

First Category: Identifying Conflicting Obligations

Both the TRIPS Agreement and ICESCR give a certain margin of discretion regarding the implementation of the provisions,[20] but the enforcement chapter of the TRIPS Agreement (part III) is very detailed. There are, moreover, far more prohibitions in the TRIPS Agreement than in ICESCR.

Provisions of the ICESCR

The easiest identifiable violations of human rights are taking place on the level of *respect*, meaning that the state unjustifiably and arbitrarily interferes in the

enjoyment of one or more human rights by means of discriminatory or oppressive policies.

The most explicit prohibition provisions of the ICESCR are the non-discrimination provisions in articles 2.2[21] and 3.[22] These apply the terms "guarantee" and "ensure", which implies relatively strong obligations. A particular serious violation of the non-discrimination provisions is that the legislation provides for such discrimination (*de jure*), while the state is obligated to adopt appropriate measures, including legislation, in order to eliminate *de facto* discrimination. These prohibitions do not apply to the subject matter regulated by the TRIPS Agreement.

There is also a strong wording in article 1.2, saying in the latter sentence that "In no case may a people be deprived of its own means of subsistence". This must be understood as a *prohibition* to deprive a people from its own means of subsistence. Food must be considered to be a means of subsistence. Can the implementation of the TRIPS Agreement lead to a situation where a people is deprived of its own means of subsistence? It was seen above that patent rights shall be exercised only in relation to an object which would not exist if not for the inventor. A patent or plant breeders' rights cannot be defined so broadly as to affect the ability of farmers to continue to grow their traditional plants. There are cases of spread of dominant transgenic species that can affect the harvest from traditional plants. As will be argued below, these examples give strong reason for concern, but cannot be directly linked to the TRIPS Agreement implementation.

Moreover, there is a prohibition against subjecting the rights to limitations beyond what is provided for in article 4,[23] and to engage in any activity or perform any act aimed at the destruction of the recognized rights, in accordance with article 5.1. Article 4 establishes three requirements. First, the state may subject such rights only to such limitations as are *determined by law*. Second, limitations are allowed only insofar as this may be *compatible with the nature* of these rights. Third, limitations shall be enacted solely for the purpose of *promoting the general welfare* in a democratic society.

These three requirements of article 4 will now be tested and applied in relation to the TRIPS Agreement. The question is whether the state is allowed to subject any of the rights of the ICESCR to limitation resulting from the implementation of the TRIPS Agreement. The first requirement is met, as the introduction of patent or plant variety legislation in accordance with the TRIPS Agreement is made by law. The second requirement is more difficult to fulfill. Limiting human rights, which seeks to protect *human beings*, as a result of the exercise of patent rights, in order to protect *inventions*, cannot be said to be incompatible with the nature of human rights. The third requirement might potentially apply, as the objective of intellectual property rights is that this shall serve the society and contribute to the general welfare, as will be analyzed in more detail below. Hence, it is found that the introduction of the TRIPS-compatible legislation does not fulfill the requirements of article 4 of the ICESCR in order to justify any limitations on the exercise of the recognized human rights. The primary reason is that human rights derive from human dignity, represent an

inalienable constituent of every human being, and simply cannot be traded or negotiated, while the rights recognized in the TRIPS Agreement are of a more instrumental value. This observation does not prove, however, that the two treaties necessarily are in conflict.

Hence, it is found that none of articles 2–5, which contain certain prohibitions, fall within the scope of the TRIPS Agreement provisions.

With regard to the operative paragraphs in articles 6–15 of the ICESCR, many of these provisions have a wording that relates less to prohibitions. It is, however, a prohibition to remove food from a suffering population (Skogly, 2002, p. 22) or intentionally and unjustifiably destroy food-producing resources.

It will now be analyzed whether the implementation of the TRIPS Agreement can be considered to necessitate any of these actions that are considered as prohibitions and as violations of the human right to adequate food. WTO member states cannot exclude patents in the field of biotechnology, except when done in accordance with TRIPS Agreement, articles 27.2 and 27.3.[24] The patent holders exercise in many jurisdictions exclusive rights over whole plants that have incorporated patented genes. In Canada, a patent relating to a gene has been found by the Supreme Court to also extend over plants, even if this is not provided for in the national legislation (Canadian Supreme Court, 2004, paragraphs 17, 21 and 78).[25]

Two situations are of interest. First is a situation when a patented gene incorporated into a plant can make this plant superior to naturally occurring plants, and spread via pollen into farmers' fields (Busch, 2002, pp. 199–202; Royal Society of Canada, 2000, pp. 122–9; US National Research Council, 2002, p. 237). Such "invasive species" imply that the growing of traditional species can be impeded, because the fields where the invasive species are found must be either cleansed or abandoned, at least if the farmer will not run the risk of infringing the patent. This practice comes close to destroying food-producing resources. The TRIPS Agreement does not necessitate this course of action, however, as will be seen when introducing TRIPS Agreement, part III below.

Another situation is when the growing of transgenic crops is widespread and a plant pest occurs which implies that these crops do not give any harvest and cannot easily be replaced. This also relates to the "superiority" of these plants, which makes them difficult to replace. Moreover, if there is no alternative species actually to replace the pest-infected plants, a serious situation can occur. While it is correct that the TRIPS Agreement *facilitates* the introduction of modern crops, and to a lesser extent monoculture, it is not possible to state that the TRIPS Agreement actually *necessitates* such changes—with potential exposure to risks—in agriculture. Hence, even if these situations cannot be excluded, they do not prove that there is a conflict between the treaties on the first level of conflict.

Another relevant paragraph that could fall within the scope of the TRIPS Agreement provisions is article 15.3, stating that the states undertake to ". . . *respect for the freedom indispensable for scientific research and creative activity*".[26] Could it

be that the TRIPS Agreement provisions, particularly the exclusive rights recognized in accordance with article 28, lead to restriction in this freedom?

There is nothing in the TRIPS Agreement that addresses the issue of scientific freedom. The TRIPS Agreement does not prohibit any action taken with the view of ensuring this freedom. The fact that the TRIPS Agreement is quiet on this issue, however, cannot be interpreted to imply that the implementation of the TRIPS Agreement will never raise issues as to whether scientific freedom is affected. Research could be restrained due to fears that the research might result in a product that falls within the patent claims of an existing patent. Such products are, under normal circumstances, not possible to commercialize while the original patent is in force. Strictly speaking, article 15.3 can only be understood to apply to the research situation, not to the dissemination of the research products. The TRIPS Agreement cannot be interpreted to restrict the possibilities of undertaking research, even on patented products, as long as the research is in the form of experimentation on the patented invention (research exemption, subject to national law) and not with the intentions of marketing a patented product.

Provisions of Part II of the TRIPS Agreement

As regards specific TRIPS Agreement provisions, in particular the exclusion provisions of article 27 have a relationship to human rights (UN, 2005b). Moreover, the exceptions in articles 30–32[27] allow for limiting the enjoyment of exclusive rights, especially if this is done in order to secure prevailing public interest.

Of particular interest in a human rights context is article 27.2. This paragraph gives a right for states to exclude certain harmful inventions from patentability. It is not possible to address all aspects of this paragraph, but it must be observed that inventions *may* be excluded if this is necessary for the protection of *ordre public*, morality, human or plant life or health, or to avoid serious prejudices to the environment. Exclusion or exception provisions of WTO treaties might relate to the same subject matter as human rights law. Hence, what is worded as a *right* of governments to apply an exception in WTO treaties might well be an *obligation* in human rights law (Petersmann, 2005, p. 354, footnote 29).

The wording of article 27.2 has not been clarified by the WTO's dispute-settlement system. The threshold for applying this provision on exclusions from patentability is high, as illustrated by a necessity requirement as well as the requirement that "such exclusion is not made merely because the exploitation is prohibited by their law". At the same time, human rights values are prevailing values that have a clear relationship to morality (Van Overwalle, 2005, p. 221). Also, the scope of the ICESCR extends to the protection of food plants.[28]

Hence, human rights provisions can be included in a clarification of the scope of article 27.2 of the TRIPS Agreement ("morality" and "protect human or plant life or health") as they are relating to the same subject matter. Notwithstanding the strict requirements of article 27.2, human rights might be relevant in order to justify an exception in accordance with article 27.2 (Matsushita *et al*., 2003, p. 423; Rott,

2002, p. 231). The exclusion provisions in the TRIPS Agreement can be strengthened by ICESCR obligations.

The question of whether the TRIPS Agreement has wide flexibilities must furthermore be based on the scope of the exception provisions of articles 30–32. All of these can be introduced in national legislation to balance the interests of the right holder and the interests of society. With the exception of the first part of article 30, they have not been clarified by the WTO's dispute-settlement system.

First, one element of article 30 that has not been clarified by the WTO's dispute-settlement system is the term "third parties". This term can be understood to refer to technology consumers and not only competitors to the right holder. Article 30 addresses *limited* exceptions. Moreover, it is correct, as observed by the European Communities (EC), that article 30 does not explicitly refer to any societal values (WTO, 2000, paragraph 4.30). At the same time, the Doha Declaration on TRIPS and Public Health states: "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 [Article 7] and principles [Article 8]" (WTO, 2001a, paragraph 5a).[29] Hence, article 30, read in the light of the other provisions of the TRIPS Agreement, allows for limiting exclusive rights in the public interest.

The only report from the dispute-settlement system seeking to clarify the TRIPS Agreement, article 30 has not been able to bring calm, even if it did manage to solve the specific conflict. On the one hand, the panel noted that ". . . Article 30's very existence amounts to a recognition that the definition of patent rights contained in Article 28 would need certain adjustments" (WTO, 2000, paragraph 7.26). On the other hand, the panel found ". . . that the TRIPS Agreement would want to require governments to apply exceptions in a non-discriminatory manner" (WTO, 2000, paragraph 7.92). This latter observation has been criticized (Howse, 2000), as there is no basis for interpreting the exceptions provisions of the TRIPS Agreement in a "non-discriminatory manner". The potential of applying the "limited exceptions" provision of article 30 is restricted, but as will be shown below, the interests of third parties, which includes farmers, are to be taken into account.

Second, article 31 allows the granting of compulsory licenses,[30] but has a long list of requirements that must be observed. As an example, paragraph (h) of article 31 states that the right holder shall be paid adequate remuneration. Article 44.2, however, states that the remedies available can be *limited* to such payment of remuneration. Neither of these provisions has been clarified by the WTO's dispute settlement system.

Third, article 32 has, to a large extent, been ignored as an exception provision. This provision can, however, be used as a basis for revoking patents based on public interest considerations (Gervais, 2003, p. 254; Watal, 2001, pp. 111 and 115). Another author opposes this: ". . . the government may expropriate the patent . . . not simply cancel it" (Pires de Carvalho, 2005, p. 376). The requirement is, as stated in the article, that an opportunity for judicial review is available. Revocation in the

public interest can be an option if there is a serious situation, and compulsory licenses are not able to mitigate this situation.

Moreover, the scope of the TRIPS Agreement, section II, part 5 covers new inventions and plant varieties. The prohibitions set down by the Agreement relate to a relatively small segment of the products that can be utilized in order to contribute to the realization of the right to food. Hence, the prohibitions of the TRIPS Agreement are not of such a kind that they make it impossible to comply with the provisions of the ICESCR, in one way or another.

Based on this analysis of the provisions of both the ICESCR and the TRIPS Agreement, it is found that there are no obligations imposed by one treaty that make it impossible to comply with the obligations imposed by the other treaty. It must be recalled, however, that the scope of article 27.2 is not clarified, and hence it is not clear what possibilities states actually have to exclude certain inventions from patentability, including whether human rights can be used to clarify this provision. With this uncertainty in mind, it is found that while the ICESCR does contain certain prohibitions, these do not fall within the scope of the TRIPS Agreement provisions, and vice versa.

Second Category: Identifying Measures that Cannot be Adopted

This section also analyzes the provisions of the two treaties. The most important part of the ICESCR for the purpose of this analysis is article 11.2(a):

> To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources.

There is general agreement that to ''improve methods of production, conservation and distribution of food'' represent *objectives*, while an example of a *measure* is ''making full use of scientific and technical knowledge'' (Alston, 1984, pp. 34–5). It must be emphasized that article 11.2(a) is not exhaustive, and measures for the realization of the right to food can be taken in all spheres of public policy. This section, however, seeks to analyze whether the measure ''to make full use of scientific and technical knowledge'' for the purpose of contributing to both increased food production and improved food distribution will be impeded by the fact that the measures prescribed by the TRIPS Agreement shall be adopted.

Also of relevance here is article 15.1(b) of the ICESCR (see note 18). This paragraph is vague,[31] but must, as all other substantive human rights, be understood in the light of article 2.1, requiring the state parties to ''take steps to the maximum of its available resources'' and ''achieving progressively the full realization of the rights by all appropriate means''. However, article 15.1(b) cannot be interpreted to imply that the state is under an obligation to provide products

resulting from the scientific process for free, and the rights of the authors as recognized in article 15.1(c) must also be observed.

Turning to the provision of the TRIPS Agreement, its provisions are very explicit in identifying what the state party must do to act in compliance with the treaty, in particular some of the provisions in part III on enforcement.[32] As shown above, part II contains provisions for exclusion from patentability and exception to the exercise of the granted rights. Below, after an analysis of state obligations under part II of the TRIPS Agreement, the most relevant enforcement provisions of part III of the TRIPS Agreement will be analyzed.

Emphasis on State Obligations

It will be analyzed whether the provisions of part II of the TRIPS Agreement imply that measures must be taken which make it impossible to comply with the obligation to take measures for the purpose of improving food production and distribution, in accordance with articles 11.2(a) and 15.1(b) of the ICESCR. Such a situation could arise if patents and plant breeders' certificates imply that it is not possible to adopt effective measures in the field of research on food plant (production) or providing this food (distribution).[33]

It must be emphasized that everyone is free to decide on whether to acquire protected seeds or continue to grow traditional, non-protected seed. Therefore, a problem arises only if there is actually no alternative option available. However, the options available to the state to *protect*[34] the farmers must be emphasized. Moreover, whether the state can contribute to *fulfill* the right to adequate food by facilitating agricultural research is also crucial.

First, the analysis will analyze issues relating to *protect*. Instead of making a detailed interpretation of all the TRIPS Agreement provisions, the analysis will concentrate on whether the state can make use of the limited exception provision of article 30 in a special situation—in order to protect farmers. This situation is when farmers find protected plants on their field without themselves having purchased or by any other act having obtained this protected seed or plant. Can the state legislate in compliance with the TRIPS Agreement in a manner that exempts the farmer from liability in such a situation?

The first case brought to the highest national court is the Canadian Supreme Court ruling in *Monsanto v Schmeiser*,[35] where the accused farmer was found guilty of infringement, as he used the patented gene by replanting (paragraph 92). The Canadian Supreme Court held that he should have asked the company to remove the plants when he discovered them on his field (paragraph 86). He was not ordered to pay compensation, as he "earned no profit from the invention" (paragraph 105).

While the *Monsanto v Schmeiser* case made its way through the Canadian courts, a commission recommended that an amendment to the Canadian Patent Act should include a provision that exempts a so-called "innocent bystander" from liability in those situations where one is actually *using* a patented gene by

replanting—without knowing about it (Canadian Biotechnology Advisory Committee, 2002, p. 14). This proposal must be considered to be a "limited exception" within the meaning of article 30 of the TRIPS Agreement. The right holder does not have any expectations with regard to those farmers with which the right holder has not entered into any contractual relationship. To be exempted from liability in such situations would be important not only for the farmer but also for those who might be affected in one way or another by the adventitious spread of transgenic plants by pollen. Including such provisions can also be a way to secure the right to an adequate standard of living, as recognized in article 11.1 of the ICESCR.

Second, with regard to *fulfill*, can the state undertake measures in the field of food production? This question cannot be answered fully, but will depend on the food plants that are considered. In the field of the most commercially interesting crops, such as maize and rice, there is already a very complex web of patent and plant breeders' rights. There are several important food plants in which there is little private interest, however. These are available to public agricultural research.

Simply stated, command over the propagating material to produce food is important (Eide, 1987, p. 27). At the same time, it is crucial that "... modern science and traditionally adapted principles are combined in order to maximize the prospects for adequate food consumption, nutritionally balanced, and in respect of ecological constraints" (Eide, 1987, p. 35). Pro-poor public policies are crucial in establishing this balance. Such policies will in general not be impeded by the TRIPS Agreement provisions, even if there are certain plants where the web of patents discourages any public research efforts.

Moreover, there are two other relevant considerations. First, the relevant patent or plant breeders' right might only be granted in a few states. In all other states, the information available in the application is available for anyone to utilize for research and commercialization purposes (Pardey and Koo, 2003). Second, the use of patented products by public institutions tends to be less of a concern for the right holders than similar use by commercial actors, which are competitors to a stronger extent (Cohen *et al*., 1998; Salazar *et al*., 2000).

Hence, there are several ways by which the state can fulfill its research obligation. The state cannot, however, engage in *any* research that it considers interesting, as this can create problems when the products resulting from the research are to be brought onto the market or delivered to farmers.

Enforcement in Compliance with Part III of the TRIPS Agreement

As regards part III measures, the most explicit articles that are considered particularly relevant in the context of human rights are article 46[36] on other measures for deterring infringement, article 59[37] on remedies and article 61[38] on criminal procedures with regard to infringement.

It will be analyzed whether the measures prescribed by these provisions, relating to the destruction of infringing products, might impede the taking of measures prescribed by the ICESCR.

''Seizure, forfeiture and destruction of the infringing goods'' can be ordered by the judicial authorities. The crucial issue for TRIPS compliance is that the judicial authorities are given this power. Whether there is actually a judicial decision is of less relevance for TRIPS compliance. Destruction of generic products *can*, however, be undertaken in a manner that has serious negative human rights consequences, particularly with regard to the human rights crucial to uphold life such as food and health. This could be the situation if there are no reasonably available alternatives—in either physical or economic terms—for those who depend on access to generic products. This is a more frequent situation in the field of medicines (right to health) than in the field of seeds (right to food). Physical and economic accessibility to goods such as medicines and seeds is crucial in order to enjoy the rights to the highest attainable standard of health and the right to adequate food, recognized in articles 12 and 11 in the ICESCR, respectively.

If the access to cheaper goods is substantially reduced as a result of decisions in accordance with article 61 of the TRIPS Agreement, this might affect the enjoyment of the respective human right for those who depend on such cheaper purchases. The courts must ensure a balance between the interests of the holder of the intellectual property rights and the interests of those who will be worse off as a result of the reduced availability and accessibility of the relevant products. It cannot be presumed, however, that human rights obligations are given similar emphasis as securing the interests of the patent right holder.

Based on this analysis, implementation of the TRIPS Agreement might result in a situation where *fewer* measures might be available, but there is no general impediment on the taking of appropriate measures for both food production and food distribution. There is thus no basis for claiming that there is a legal conflict between the two on the level of measures.

Third Category: Identifying Impacts

There is still too limited knowledge on the actual consequences of gene and seed patents and plant variety protection in the agricultural sector. A study commissioned by the World Bank analyzed the price effects from the introduction of plant breeders' rights in three developing countries with a certain industrial capacity (Mexico, Argentina and Brazil). The study ''. . . indicates somewhat higher prices with IPRs. This would be expected and necessary to recover private [research and development] expenses, but there appears to be little evidence of excessively high prices with agricultural inputs'' (Lesser *et al.*, 2000, p. 9; see also Louwaars *et al.*, 2005).

At least, the price effect in the field of seeds and plants is less dramatic than the price effect in the field of medicines (Wright, 2000, p. 303). As there are more options with regard to plant breeding than with regard to medicines, it must be

expected that farmers are able to make rational decisions on whether to purchase protected seeds or not. There is no current evidence that the price of food to the consumers has increased as a result of the introduction of patent and plant variety protection in agriculture.

The "full use of technical and scientific knowledge", identified as a measure in relation to realization of the right to food, could imply that the state seeks to facilitate that such knowledge is developed and utilized by private actors. Such facilitation, including by means of patents and plant variety protection, is not necessarily contrary to the human rights' obligations of the state.[39] At the same time, the state must ensure that the most marginalized are *not* left in a worse situation as a result of the introduction of such incentives.

In the context of the human right to adequate food, it must be observed that there are both obligations relating to *distribution* of food, or means for purchasing food, and obligations relating to *production* of food. In line with the emphasis on accessibility of food, any measures in the field of food production that at the same time make food distribution more difficult cannot be recommended. Therefore, the state must observe and identify appropriate measures to mitigate potential negative consequences of strengthened intellectual property protection.[40] This must imply, *inter alia*, that the state makes use of the flexibility the provisions of the TRIPS Agreement, adopts appropriate technology and social policies, or seeks to cooperate actively with international agricultural research initiatives if its own resources are too limited.

If the state fails to take the required measures or adopt appropriate policies, resulting in a situation where hunger and suffering is prevailing, this state might be found to act in non-compliance with the obligations imposed by the ICESCR. Increased inequality is at least an indication that the state has not addressed the situation appropriately.

The TRIPS Agreement *will* have as a consequence that resources are transferred from technology consumers to technology producers. This will take place with states as well as between states. Whether the consequences of the TRIPS Agreement are actually contributing to the objectives mentioned in article 7 of the TRIPS Agreement ("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") is difficult to prove, at least for the least-developed states.[41]

At the same time, new and improved products might increase the options, also for those who have limited ability to pay, and could enhance the standard of living for large segments of the society. By leaving the agricultural research, or at least the commercialization of the research products, to private actors relying upon patent and plant variety protection, however, the state effectively limits its own abilities to engage in production of food which can also ensure an adequate distribution. Therefore, the potential negative impact, at least in the short term, can be mitigated by the state observing more actively its human rights obligations. While the

consequences give reason for concern, this author does not find that the consequences by themselves imply that the two treaties are in conflict.

What Role for Human Rights in the Future?

The term "human rights" is not applied in intellectual property treaties.[42] Moreover, the proposal of developing states to include in the Doha Declaration on TRIPS and Public Health a reference to the obligation to "protect and promote the fundamental human rights to life and the enjoyment of the highest attainable standard of physical and mental health"[43] was not included in the final declaration.

Moreover, in current negotiations on categories of intellectual property rights not recognized in the TRIPS Agreement, the term "human rights" appears only in the context of very general principles (WIPO, 2004, paragraph 22) and is not included in the draft of an international instrument (WIPO, 2006).

There are also those who claim that intellectual property does not relate at all to the subject matter protected by human rights treaties:

> It is impossible to see how the fact that the IPR system creates an opportunity (not a right) for the author or inventor to secure a material benefit arising from his contribution to the useful art can conflict with any human right (Crespi, 2003, p. 243).

The present author tends to disagree with this observation, as the means through which one "secures a material benefit" can determine whether others are left in a situation where their human rights can only be enjoyed at an unaffordable cost.

On the other side of the spectrum, seeking to incorporate human rights concerns explicitly is the important principle established by the British IPR Commission:

> We therefore consider that an IP right is best viewed as one of the means by which nations and societies can help to promote the fulfilment of human economic and social rights. In particular, there are no circumstances in which the most fundamental human rights should be subordinated to the requirements of IP protection (IPR Commission 2002, p. 6).

Can it actually be ensured that making sure fundamental human rights are not subordinated to the requirements of intellectual property is the task of the negotiating states? At the same time, if attempts of including public interest provisions and human rights principles in international treaties actually fail, relevant adjudicating bodies can apply treaties by taking into account obligations of states also under other international treaties.[44]

The resistance against human rights in the context of intellectual property disputes can be illustrated by the following statement by the EC: "public health,

nutrition and other public interests were to be considered subordinate to the protection of the intellectual property rights'' (WTO, 2000, paragraph 4.30(a)(I)). In a document to the TRIPS Council, the EC takes another position by stating:

> Article 30 amounts to a recognition that the patent rights contained in Article 28 (''Rights Conferred'') may need to be adjusted in certain circumstances. The provisions of Article 30 should be fully respected, and be read in light of Article 7 and 8 . . . They should not be interpreted as allowing for any substantial or unjustified curtailment of patent rights. However, the EC and their member States are not in principle opposed to exceptions being made, for example, for purposes of research (WTO, 2001b, paragraph 14).

What is the reason for this insistence on subordination of human rights principles and public interest consideration, but acknowledgement of the research exemption? There seems to be a fear that by including human rights principles, this will result in uncertainty with regard to the application of intellectual property rights, with the result that the intellectual property system becomes ''unmanageable''.[45] This author argues that human rights will serve as a guide to establish appropriate systems for the administration and enforcement of intellectual property rights. As has been seen, the ICESCR contains provisions relating to science, technology and intellectual property.

Conclusions

This article has found that human rights are relevant to consider in negotiations or disputes relating to intellectual property rights. There is no disagreement that intellectual property rights are tools that shall serve the interests of society. Human rights protect fundamental values and societal interests (Kirchner, 2004, p. 59). Still, however, human rights are alien to most advocates and scholars of intellectual property rights. Moreover, not even states are actively pursuing a human rights approach to ensure a balance between the private interests of the author, inventor or breeder, on the one hand, and the interests of those making use of such contributions for their living, on the other.

Human rights are implicitly recognized in the TRIPS Agreement, article 8.1, but this paragraph is only applicable to the extent that the adopted measures are ''consistent with the provisions of this Agreement''. Human rights concerns can also be relevant in the context of article 27.2 of the TRIPS Agreement as well as other exception provisions in part II, section 5 of the TRIPS Agreement.

Most allegations regarding the existence of a legal conflict between the ICESCR and the TRIPS Agreement are based primarily on their different object and purpose. There is a problematic relationship between the two treaties, primarily as the negative short-term impact is evident, while there are uncertainties regarding the potential positive long-term impact for developing and least-developed states.

However, this analysis, exemplified by patent and plant variety protection, does not find that there is a conflict as understood in the strict sense of mutually exclusive obligations. With regard to conflict on the level of measures and on the level of impacts, it is found that the states need to be more observant regarding the prescribed measures of the ICESCR to ensure a more appropriate balance.

It is found that the framework for assessing whether conflict between treaties exists, which also includes whether treaty-prescribed measures are impeded, is valuable. Other policy and technology areas could also be analyzed by applying the same framework.

About the Author

Hans Morten Haugen is Associate Professor, at Diakonhjemmet University College, in Oslo. In 2006, he was awarded a Ph.D. Degree in Law at the University of Oslo with the dissertation "The Right to Food and the TRIPS Agreement: With a Particular Emphasis on Developing Countries' Measures for Food Production and Distribution", to be published in *Raow Wallenberg Institute Human Rights Library*, Vol. 30. Martinus Nijhoff, Leiden. The work was undertaken while being a member of the International Project on the Right to Food in Development (IPRFD) at the Norwegian Centre for Human Rights; e-mail: *haugen@diakonhjemmet.no*

Notes

1 In short, in the 2 years 2000 and 2001, the UN human rights bodies produced *two resolutions* (Sub-Commission resolution (UN, 2000; 2001a), *one statement* (UN, 2001e—on article 15.1(c) of the International Covenant on Economic, Social and Cultural by the Committee on Economic, Social and Cultural Rights); *one study* (UN, 2001b—by the Office of the High Commissioner for Human Rights) and two *compilations of responses* from organizations and institutions (UN, 2001c; 2001d—by the Secretary-General).

2 Plant breeders' rights are regulated in the International Union for the Protection of New Varieties of Plants (UPOV) Convention, which was initially signed in 1961, and which has been rewritten three times since. The 1991 Act of the UPOV Convention is the most recent. Currently UPOV has 59 member states, but this number is likely to increase due to the requirement of article 27.3(b) of the TRIPS Agreement, that all states must have in place an "effective *sui generis* system" for the protection of plant varieties. UPOV is located with WIPO and is also being co-directed with WIPO, but is not a part of the United Nations.

3 Adopted 16 December 1966 as UN doc A/RES/2200 (XXI), annex; registered as 993 U.N.T.S. 3; entered into force 3 January 1976.

4 Adopted 15 April 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994).

5 Robinson (1971, p. 87): "... by slowing down the diffusion of technical progress it ensures that there will be more progress to diffuse".

6 See the text of article 15.1(c) of the ICESCR, recognizing "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 is the author".

7 The term ''inventors'' is not used in the ICESCR, unlike the non-binding 1948 American Declaration of the Rights and Duties of Man, which includes authors' rights (see article 13). Observe, however, that in the drafting of the Universal Declaration, the term ''any invention'' was proposed in document A/C.3/360 of 20 November 1948. It was not included in document A/C.3/361 of 22 November 1948, which was included as article 25.2 and subsequently adopted as article 27.2.

8 The present author agrees with Pires de Carvalho (2005, p. 242), that plant breeders can also fall within the scope of article 15.1(c) of the ICESCR, and, moreover, that farmers can be regarded as breeders or ''developers'' (see, for instance, articles 9.1 and 12.3 of the Food and Agricultural Organization's International Treaty on Plant Genetic Resources for Food and Agriculture, which entered into force on 29 June 2004).

9 See common paragraph 7 in UN (2000; 2001a): ''Calls upon States . . . to cooperate internationally in order to realize the legal obligations under the Covenant, *including in the context of international intellectual property regimes*'' (emphasis added).

10 *Ibid*., paragraph 2 and preambular paragraph 4.

11 In UN (2000), the following bodies are addressed in paragraphs 8–13: WTO, Special Rapporteur on Globalization of the Commission on Human Rights, UN High Commissioner for Human Rights, Committee on Economic, Social and Cultural Rights, WIPO, World Health Organization, United Nations Development Programme, United Nations Conference on Trade and Development, United Nations Environment Programme and Conference of the Parties to the Convention on Biological Diversity. In UN (2001a), fewer bodies are addressed, but the High Commissioner is entrusted with more specific tasks, including to investigate ''. . . whether the patent, as a legal instrument, is compatible with the promotion and protection of human rights and corresponding State obligations'' (paragraph 10). Except for an Expert Group Meeting on Human Rights and Biotechnology (see UN, 2002, paragraph 4), no substantial analysis has been undertaken.

12 *Supra* n. 9, paragraph 2 and paragraph 12, respectively. The fact that the Special Rapporteur on the right to the highest attainable standard of health was left out from the list is an omission.

13 The presentations can be found as E/C.12/2000/12–E/C.12/2000/20. Except for a WIPO Seminar in 1998, organized in collaboration with the High Commissioner for Human Rights to commemorate the fiftieth anniversary of the Universal Declaration of Human Rights (WIPO, 1999) this is the only attempt of bringing together different interests and perspectives to analyze the real content of the paragraph on authors' rights.

14 In this context, see Correa (2003) on the difference between static efficiency (short term), understood as the most efficient use of existing resources, and dynamic efficiency (long term), understood as the optimal introduction of new and better products or production processes.

15 See Resolutions E/CN.4/RES/2004/19:Commission on Human Rights, The Right to Food (2004), paragraph 7 and E/CN.4/RES/2005/18:Commission on Human Rights, The Right to Food (2005), paragraph 8: ''*Requests* all States and private actors, as well as international organizations within their respective mandates, to take fully into account the need to promote the effective realization of the right to food for all, including in the ongoing negotiations in different fields''. Only the United States voted

against these resolutions, as they are generally dissatisfied with the approach of the Special Rapporteur, including in the field of genetically modified organisms. For both the 15 October 2002 statement and the official US response, see the website available at ⟨http://www.twnside.org.sg/title/service38.htm⟩ [Accessed on 2 June 2005].

16 Article 15.1(a) recognizes "the right of everyone to take part in cultural life".

17 Article 15.1(b) recognizes "the right of everyone to enjoy the benefits of scientific progress and its applications".

18 *Human Rights and Intellectual Property: An Overview* [online]. Available at ⟨http://www.wipo.int/tk/en/hr/⟩ [Accessed on 2 June 2006].

19 Vienna Convention on the Law of Treaties, article 31.1.

20 Even the paragraph of patentability under TRIPS Agreement (article 27.1) has been found by the WTO's Dispute Settlement Panel to ". . . not prohibit *bona fide* exceptions to deal with problems that may exist only in certain product areas" (WTO, 2000, paragraph 7.92).

21 Article 2.2 reads: "The States Parties to the present Covenant undertake to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status".

22 Article 3 reads: "The States Parties to the present Covenant undertake to ensure the equal right of men and women to the enjoyment of all economic, social and cultural rights set forth in the present Covenant".

23 Article 4 reads: "The State Parties to the present Covenant recognize that in the enjoyment of those rights provided by the State in conformity with the present Covenant, the State may subject such rights only to such limitations as are determined by law, only in so far as this may be compatible with the nature of these rights and solely for the purpose of promoting the general welfare in a democratic society".

24 See also WTO (2000), paragraph 7.92, where the panel noted: "Article 27 does not prohibit *bona fide* exceptions to deal with problems that exist only in certain product areas".

25 *Monsanto Canada Inc. v Schmeiser* [2004] SCC 34, Canadian Supreme Court, paragraphs 17, 21 and 78.

26 Note in this context that the International Law Commission (ILC), in their process of drafting what was to become the Vienna Convention on the Law of Treaties, made some clarifications with regard to the Antarctic Treaty, stating that article 2 of that treaty ". . . which provides for *"freedom of scientific investigation" is of an "integral" type*, though it may involve some elements of "reciprocating" obligations . . ." ((1964) *ILC Yearbook*, II, 60, emphasis added).

27 Article 30 ("exceptions to rights conferred") establishes three requirements, which must all be met for such exceptions to be justified. Article 31 ("other use without the authorization of the right holder") establishes several requirements for using the subject matter of the patent by means of compulsory licenses. Article 32 ("revocation/forfeiture") states that opportunities for judicial reviews of such decisions shall be available, but does not define the criteria for such decisions, implying that revocation in the public interest is an option.

28 See the following phrases of the ICESCR: "means of subsistence" (article 1.2) and "development and utilization of natural resources" (article 11.2(a)).

29 TRIPS Agreement, article 8 does not prevent the adoption of measures " ... necessary to protect public health or 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".

30 The six bases for granting compulsory licenses are refusal to deal; emergency and extreme urgency; public non-commercial use (all based on article 31(b)); anti-competitive use (article 31(k)); dependent patent (article 31(l)); and when producing for a country that has no production capacity (article 31*bis*).

31 Observe from the *travaux préparatoires* of the Universal Declaration of Human Rights that the phrase "and its benefits" was introduced to make it clear that not everyone could be expected to "participate", but that everyone should have the right to share in the benefits of scientific advancement: A/C.3, General Assembly Official Records 1948: Draft international declaration of human rights (E/800), item 79, at 627.

32 See ECJ Case C-300/98 *Parfumes Dior* and Case (C-392/98) *Assco Gerüste v Wilhelm Layher GmbH & Co. KG and Layher BV* [2000] ECR I-11307 (joined cases) which concerned the jurisdiction of the court to interpret provisions of the TRIPS Agreement, and the issue of direct effect. Before this joined case, the European Court of Justice (ECJ) had consistently refused to recognize the direct effect of the WTO Agreements. In this case, the ECJ found in paragraph 49: "... Community law neither requires nor forbids that the legal order of a Member State should accord to individuals the right to rely directly on the rule laid down by Article 50(6) of TRIPs".

33 National laws include both private use exemptions and research exemptions. The line between private and experimental use, on the one hand, and commercial exploitation, on the other, is not easy to draw.

34 To *protect* individuals against third parties is a recognized state obligation, in addition to *respect* the human rights of the individual by non-interference (see article 15.3 for an illustration), and to *fulfill* by adopting measures, including legislation; see, *inter alia*, General Comment No. 12 on the right to adequate food, UN doc E/2000/22, pp. 102–10, paragraph 15.

35 *Supra* n. 25.

36 Article 46 reads (extracts): "... [T]he judicial authorities shall have the authority to order that goods that they have found to be infringing be, without compensation of any sort, disposed of outside the channels of commerce in such a manner as to avoid any harm caused to the right holder, or, unless this would be contrary to existing constitutional requirements, destroyed".

37 Article 59 reads (extracts): "... subject to the right of the defendant to seek review by a judicial authority, competent authorities shall have the authority to order the destruction or disposal of infringing goods in accordance with the principles set out in Article 46".

38 Article 61 reads (extracts): "In appropriate cases, remedies available shall also include the seizure, forfeiture and destruction of the infringing goods ... ".

39 UN (1991) states in paragraph 8: "... in terms of political and economic systems the Covenant is neutral and its principles cannot accurately be described as being predicated exclusively upon the need for, or the desirability of a socialist or a capitalist system, or a mixed, centrally planned, or laissez-faire economy".

40 "Strengthened protection" refers to an extension of *patentability* (such as patenting of micro-organisms) or protection of plant varieties, an extension of the *patent scope* (protection extends to organisms in which the patented trait or gene is inserted) as well as stronger *legal protection* (increased possibilities for enforcement).

41 States experience that multinational companies have chosen to close down their production facilities in the aftermath of the strengthening of patent legislation, as legislation in accordance with the TRIPS Agreement, article 27.1 will make it easier to import this company's patented products from outside the country.

42 A group of developing states attempted to have included in article 30 ("limited exceptions") *"inventions capable of being used for the production of food and medicines"* (WTO, 1990), p. 9.

43 IP/C/W/312, 4 October 2001, Proposal: Draft Ministerial Declaration: Proposal from a Group of Developing Countries.

44 See Vienna Convention on the Law of Treaties, article 31.3(c): "There shall be taken into account, together with the context ... any relevant rules of international law applicable in the relations between the parties".

45 Henry Bosch, Senior European Patent Attorney, and Henk Laanen, Assistant European Patent Attorney, Monsanto, Brussels, Belgium, personal communication, 29 August 2002.

References

Alston, P. (1984) 'International Law and the Human Right to Food', in P. Alston and K. Tomasevski (eds.), *The Right to Food*. Martinus Nijhoff Publishers, Dordrecht, pp. 9–68.

Busch, N. A. (2002) 'Jack and the Beanstalk: Property Rights in Genetically Modified Plants', *Minnesota Intellectual Property Review*, 3(1), 1–234.

Canadian Biotechnology Advisory Committee (2002) *Patenting of Higher Life Forms and Related Issues*. CBAC, Ottawa.

Chapman, A. (2002) 'The Human Rights Implications of Intellectual Property Protection', *Journal of International Economic Law*, 5(4), 861–82.

Cohen, J. I., Falconi, C., Komen, J. and Blakeney, M. (1998) *Proprietary Biotechnology Inputs and International Agricultural Research*, ISNAR Briefing Paper No. 39, International Service for National Agricultural Research, the Hague.

Cohn, M. (2001) 'The World Trade Organization: Elevating Property Interests above Human Rights', *Georgia Journal of International and Comparative Law*, 29(3), 427–40.

Correa, C. (2003) 'Managing the Provision of Knowledge: The Design of Intellectual Property Laws', in I. Kaul, P. Conceicao, K. Le Goulven and R. U. Mendoza (eds.), *Providing Public Goods: Managing Globalization*. Oxford University Press, Oxford, pp. 410–31.

Crespi, S. (2003) 'IPRs Under Siege: First Impressions of the Report of the Commission on Intellectual Property Rights', *European Intellectual Property Review*, 25(6), 242–7.

Cullet, P. (2004) 'Intellectual Property and Food Security in the South', *Journal of World Intellectual Property*, 7(3), 261–86.

Eide, A. (1987) *Report on the Right to Adequate Food as a Human Right* (E/CN.4/Sub.2/1987/23) (Published as Human Rights Study Series No. 1, United Nations Publications Sales No. E.89.XIV.2).

Gana, R. (1996) 'The Myth of Development, the Progress of Rights: Human Rights to Intellectual Property and Development', *Law and Policy*, 18(3–4), 315–54.

Gervais, D. (2003) *The TRIPS Agreement: Drafting History and Analysis*, 2nd edition. Sweet & Maxwell, London.

Haugen, H. M. (2007) 'General Comment No. 17 on "authors' rights"', *Journal of World Intellectual Property*, 10(1), 53–69.

Helfer, L. R. (2004) 'Regime Shifting: The TRIPS Agreement and New Dynamics of International Intellectual Property Lawmaking', *Yale Journal of International Law*, 29(1), 1–83.

Helfer, L. R. (2007) 'Towards a Human Rights Framework for Intellectual Property', *University of California Davis Law Review*, 40 (in press).

Hettinger, E. C. (1989) 'Justifying Intellectual Property', *Philosophy and Public Affairs*, 18(1), 31–52.

Howse, R. (2000) 'The Canadian Generic Medicines Panel—A Dangerous Precedent in Dangerous Times', *Journal of World Intellectual Property*, 3(4), 493–508.

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

Jenks, W. (1953) 'The Conflict of Law-Making Treaties', in *British Yearbook of International Law*. Oxford University Press, Oxford, pp. 401–53.

Kirchner, S. (2004) 'Relative Normativity and the Constitutional Dimension of International Law: A Place for Values in the International Legal System?', *German Law Journal*, 5(1), 47–64.

Llewelyn, M. (2004) 'From GATT to G.A.T.T.: Fifty Years of European Bio-IP, Part II', *Bio-Science Law Review*, 6(4), 142–62.

Lesser, W., Hortskotte-Wesseler, G., Lele, U. and Byerlee, D. (2000) 'Intellectual Property Rights, Agriculture and the World Bank', in U. Lele, W. Lesser and G. Hortskotte-Wesseler (eds.), *Intellectual Property Rights in Agriculture: The World Bank's Role in Assisting Borrower and Member Countries*. The World Bank, Washington, pp. 1–21.

Louwaars, N. P., Tripp, R., Eaton, D., Henson-Apollonio, V., Hu, R., Mendoza, M., Muhhuku, F., Pal, S. and Wekundah, J. (2005) *Impacts of Strengthened Intellectual Property Rights Regimes on the Plant Breeding Industry in Developing Countries*. The Centre for Genetic Resources, Wageningen.

Marceau, G. (2001) 'The WTO Settlement and Human Rights'. Presentation made at the seminar held by American Society of International Law and the World Trade Forum on 'International Economic Law and Human Rights', Bern, Switzerland, 13–14 August (on file with author).

Matsushita, M., Schoenbaum, T. and Mavroidis, P. C. (2003) *The World Trade Organization: Law Practice and Policy*. Oxford University Press, Oxford.

Nozick, R. (1974) *Anarchy, State and Utopia*. Basil Blackwell, Oxford.

Pardey, P. and Koo, B. (eds.) (2003) *Research at a Glance; Brief 3*. International Food Policy Research Institute, Washington, DC.

Pauwelyn, J. (2003a) *Conflict of Norms in Public International Law: How WTO Law Relates to Other Rules of International Law*. Cambridge University Press, Cambridge.

Pauwelyn, J. (2003b) 'How to Win a World Trade Organization Dispute Based on Non-World Trade Organization Law? Question of Jurisdiction and Merits', *Journal of World Trade*, 37(6), 997–1030.

Petersmann, E.-U. (2003) 'Human Rights and the Law of the World Trade Organization', *Journal of World Trade*, 37(2), 241–81.

Petersmann, E.-U. (2004) '"The Human Rights Approach" advocated by the UN High Commissioner for Human Rights and by the International Labour Organization', *Journal of International Economic Law*, 7(3), 605–27.

Petersmann, E.-U. (2005) 'Introduction', *Journal of International Economic Law*, 8(2), 347–62.

Pires de Carvalho, N. (2005) *The TRIPS Regime of Patent Rights*, 2nd edition. Kluwer Law International, The Hague.

Robinson, J. (1971) *The Accumulation of Capital*, 3rd edition. MacMillan, London.

Rott, P. (2002) *Patentrecht und Sozialpolitik unter dem TRIPS-Abkommen*. Schriftenreihe des Zentrums für Europäische Rechtspolitik an der Universität Bremen (ZERP), Nomos Verlagsgesellschaft, Baden-Baden.

Royal Society of Canada (2000) *Elements of Precaution: Recommendations for the Regulation of Food Biotechnology in Canada; An Expert Panel Report on the Future of Food Biotechnology prepared by The Royal Society of Canada at the Request of Health Canada* [online]. Canadian Food Inspection Agency and Environment Canada, Ottawa, Ontario. Available at ⟨http://www.rsc.ca//files/publications/expert_panels/foodbiotechnology/GMreportEN.pdf⟩ [Accessed 30 November 2006].

Sadat-Akhavi, S.-A. (2003) *Methods of Resolving Conflicts between Treaties*. Martinus Nijhoff Publishers, Leiden.

Salazar, S., Falconi, C., Komen, J. and Cohen, J. I. (2000) *The Use of Proprietary Biotechnology Research Inputs at Selected Latin American NAROs*, ISNAR Briefing Paper No. 44, International Service for National Agricultural Research, the Hague.

Skogly, S. (2002) *Extra-National Obligations Towards Economic and Social Rights* [online]. International Council on Human Rights Policy. Available at ⟨http://www.ichrp.org/paper_files/108_w_04.doc⟩ [Accessed 30 November 2006].

United Nations (1991) *General Comment No. 3: the Nature of State Parties' Obligations* (UN doc. E/1991/23, 83–87).

United Nations (2000) E/CN.4/Sub.2/RES/2000/7: Sub-Commission on the Promotion and Protection of Human Rights, *Intellectual Property Rights and Human Rights*.

United Nations (2001a) E/CN.4/Sub.2/RES/2001/21: Sub-Commission on the Promotion and Protection of Human Rights, *Intellectual Property and Human Rights*.

United Nations (2001b) E/CN.4/Sub.2/2001/13: *The Impact of the Agreement Trade-Related Aspects of Intellectual Property Rights on Human Rights, Report from the High Commissioner*.

United Nations (2001c) E/CN.4/Sub.2/2001/12: Sub-Commission on the Promotion and Protection of Human Rights, *Intellectual Property Rights and Human Rights, Report from the Secretary-General* (14 June).

United Nations (2001d) E/CN.4/Sub.2/2001/12: Sub-Commission on the Promotion and Protection of Human Rights: *Intellectual Property Rights and Human Rights, Report from the Secretary-General, Addendum 1* (3 July).

United Nations (2001e) E/C.12/2001/15: *Statement by the Committee on Economic Social and Cultural Rights: Follow-up to the Day of General Discussion on Article 15.1(c)*.

United Nations (2002) E/CN.4/Sub.2/2002/41: *Intellectual Property and Human Rights, Note by the Secretariat*.

United Nations (2003) *The Right to Food, Report of the Special Rapporteur on the Right to Adequate Food* (A/58/330, 28 August).

United Nations (2004) E/CN.4/2004/10: *Report by Special Rapporteur on the Right to Food, submitted in accordance with Commission on Human Rights Resolution 2003/25*.

United Nations (2005a) E/C.12/GC/17: *General Comment No. 17: 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 is the Author. Article 15.1(c) of the Covenant*.

United Nations (2005b) *Human Rights and World Trade Agreements: Using General Exception Clauses to Protect Human Rights*. Office of the High Commissioner for Human Rights, Geneva.

United States National Research Council (2002) *Environmental Effects of Transgenic Plants: The Scope and Adequacy of Regulation*. Committee on Environmental Impacts Associated with Commercialization of Transgenic Plants, National Academy Press, Washington, DC.

Van Overwalle, G. (2005) 'Legal and Ethical Aspects of Bio-Patenting: Critical Analysis of the EU Biotechnology Directive', in P. Drahos (ed.), *Death of Patents, 11 Perspectives on Intellectual Property Law and Policy*. Lawtext Publishing, Oxford, pp. 212–27.

Walker, S. (2001) 'TRIPs, the World Health Organization, the World Intellectual Property Organization, and the Food and Agricultural Organization: The Human Rights Angle'. Presentation given at the seminar held by American Society of International Law and the World Trade Forum on 'International Economic Law and Human Rights', Bern, Switzerland 13–14 August (on file with author).

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

World Intellectual Property Organization (1975) *Agreement between the United Nations and the World Intellectual Property Organization*, WIPO Publication No. 111.

World Intellectual Property Organization (1999) *Intellectual Property and Human Rights, Proceedings of a Panel to Commemorate the 50th Anniversary of the Proclamation of the Universal Declaration of Human Rights*, WIPO Publication No. 762(E).

World Intellectual Property Organization (2004) WIPO/GRTKF/IC/6/6: *Traditional Knowledge, Traditional Cultural Expressions and Genetic Resources: the International Dimension*.

World Intellectual Property Organization (2006) WIPO/GRTKF/IC/9/5, Annex I: *The Protection of Traditional Knowledge: Revised Objectives and Principles*.

World Trade Organization (1990) MTN/GNG/NG11/W/71: *Communication from Argentina, Brazil, Chile, China, Colombia, Cuba, Egypt, India, Nigeria, Pakistan, Peru, Tanzania, Uruguay and Zimbabwe*, Annex 1 (14 May).

World Trade Organization (2000) *Canada—Pharmaceuticals*, Report of the Panel, WT/DS114/R.

World Trade Organization (2001a) WT/MIN(01)/DEC/W/2: *Declaration on the TRIPS Agreement and Public Health*.

World Trade Organization (2001b). IP/C/W/280: *The Relationship between the Provisions of the TRIPS Agreement and Access to Medicines*, Communication from the European Communities and their Member States (12 June).

Wright, B. (2000) 'Intellectual Property Rights Challenges and International Research Collaboration in Agricultural Biotechnology', in Q. Matin, A. F. Krattiger and J. von Braun (eds.), *Agricultural Biotechnology in Developing Countries: Towards Optimizing the Benefits for the Poor*. Kluwer Academic Publishers, Boston, MA, pp. 289–314.

Yamin (2003) *Intellectual Property Rights, Biotechnology and Food Security*, IDS Working Paper 203 (Biotechnology Policy Series No. 22). Institute for Development Studies, Brighton.