HUMAN RIGHTS AND INTELLECTUAL PROPERTY PROTECTION IN THE TRIPS ERA

Philippe Cullet

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ABSTRACT

Human rights and intellectual property protection are two distinct fields that have largely evolved separately. Their relationship needs to be re-examined for a number of reasons. First, the impacts of intellectual property rights on the realization of human rights such as the right to health have become much more visible following the adoption of the TRIPS Agreement. Second, the increasing importance of intellectual property rights has led to the need for clarifying the scope of human rights provisions protecting individual contributions to knowledge. Third, a number of new challenges need to be addressed concerning contributions to knowledge, which cannot effectively be protected under existing intellectual property rights regimes. This article examines the different aspects of the relationship between intellectual property rights, human rights, and science and technology related provisions in human rights treaties. It analyzes existing knowledge protection-related provisions in human rights treaties. It also examines some of the impacts of existing intellectual property rights regimes on the realization of human rights. Further, it analyzes the recently adopted General Comment 17 on Article 15(1)(c) of the International Covenant on Economic, Social and Cultural Rights (ICESCR) and proposes an alternative broader reading of this provision focusing on traditional knowledge.

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I. INTRODUCTION

Human rights and intellectual property rights are, to a large extent, fields of law that have evolved independently. On the one hand, intellectual property rights consist of statutorily recognized rights, which provide incentives for the participation of the private sector in certain fields and seek to contribute to technological development. Intellectual property rights, such as patents, are near monopoly rights. This monopoly is offered by society in return for certain concessions such as information disclosure and a limited duration of the rights granted. On the other hand, human rights are fundamental rights, which are recognized by the state but are inherent rights linked to human dignity.

Different kinds of links between intellectual property rights and human rights can be identified. For example, patent laws recognize that there is a socioeconomic dimension to the rights granted and that a balance must be struck between the interests of the patent holder and the broader interests of society. Intellectual property rights also have direct and indirect impacts on the realization of human rights. For example, intellectual property rights include economic and moral elements. The latter can be linked to certain aspects of human rights. Finally, human rights treaties recognize certain rights pertaining to science and technology.

The links between intellectual property rights and human rights have been acknowledged for many decades, as exemplified in the science and technology-related provisions of the Universal Declaration of Human Rights (Universal Declaration). Nevertheless, the main debates concerning the links between human rights and property rights focused for a long time on real property rights rather than intellectual property rights. The adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) and its implications for developing countries have fundamentally changed the nature of the debate concerning intellectual property rights and human rights. This shift is demonstrated in three ways. First, the possible impacts of the introduction or strengthening of intellectual property rights standards on the realization of human rights have been exemplified by the crisis over access to HIV/AIDS medicines (in sub-Saharan African countries in particular). Second, there has been renewed debate over the introduction of intellectual property in fundamental bills of rights at the national or regional level. Third, at the UN level, there has been renewed interest in


the science-related provisions of Article 15(1) of the International Covenant on Economic, Social and Cultural Rights (ICESCR).3

This article analyzes a number of issues arising in the context of the direct and indirect relationships between human rights and intellectual property rights, as well as the broader issue of the possible future role of knowledge-related human rights provisions. The first section examines issues related to the introduction of science and technology-related clauses in human rights instruments at the international level. It also briefly examines several specific regional and national case studies. The second section moves on to highlight issues concerning the relationship between existing intellectual property rights treaties and laws and the realization of human rights such as the rights to health and food. The third section first focuses on General Comment 17 on Article 15(1)(c) of the ICESCR adopted by the Committee on Economic, Social and Cultural Rights (ESCR Committee). It then suggests an alternative reading which takes a broader look at the meaning of knowledge-related provisions in human rights treaties and argues that provisions like Article 15(1)(c) should be seen in the context of broader intellectual property protection challenges such as questions related to traditional knowledge.

II. INTELLECTUAL PROPERTY IN HUMAN RIGHTS INSTRUMENTS

The place of private property rights in human rights treaties and bills of rights has been controversial for decades. On the one hand, property has been claimed as a fundamental right.4 On the other hand, finding a consensus around the notion of a fundamental right to property has never been possible. This is due to at least two broad factors. First, where human rights are seen as rights that are inherent to human beings by virtue of their humanity, it is not possible to include the right to property as a human right.5 Second, there were and remain debates concerning the place of property rights in society. For a long time, these debates took place in the context of a broader ideological discourse, which played out during the Cold War. Even though most communist regimes have been dismantled, there remain significantly different perspectives around the world concerning the place of property rights in the legal system.

More specifically, a number of elements can be highlighted against and in favor of the protection of property as a human right. On the positive side, property rights are deemed to foster security, to provide protection of the individual’s autonomy, to provide a basis for participation in a democratic society, and are seen as conducive to the protection of other human rights such as the right to privacy. On the negative side, private property rights may constitute a source of inequality and condone existing ownership patterns without taking into account their legitimacy. Therefore, property rights tend to contribute to maintaining the status quo of a very unequal distribution of wealth. From a different perspective, it may be asked whether all types of property can or should fall within the scope of human rights protection. Thus, it is often acknowledged that it may be necessary to protect different types of property differently. Personal belongings and one’s dwelling place would, for instance, take precedence over industrial property, while land tilled for subsistence purposes would be granted a higher degree of protection than the land holdings of an absentee landlord.

This general discussion concerning property rights constitutes a necessary introduction to an analysis of the place of intellectual property rights in human rights because the links between the two are often highlighted. Nevertheless, human rights instruments like the Universal Declaration treat real property and intellectual property separately. Thus, while property rights are addressed at Article 17, culture and science come up at Article 27 in the context of the socioeconomic rights recognized in the Universal Declaration. Further, the right to property was not included in the ICESCR while the rights recognized under Article 27 were substantially incorporated in Article 15(1) of the Covenant.

Even though the link between intellectual property rights and human rights is tenuous, this does not imply that there is no connection between human rights and intellectual contributions. On the one hand, existing intellectual property rights have the potential to affect the realization of human rights such as the right to health. On the other hand, it is possible to understand existing science and technology provisions in human rights treaties, not as providing a link to existing intellectual property rights but as providing a basis for the recognition of the non-economic aspects of intellectual endeavor. It can be argued that this is in fact what was sought in the context of the adoption of the relevant clauses in the Universal Declaration

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7. Id. at 194.
9. Universal Declaration, supra note 1, arts. 17, 27.
and the ICESCR. This also constitutes the most sensible interpretation of these clauses in the context of today’s debates over the protection of traditional knowledge.\textsuperscript{10}

\section*{A. Global Instruments}

Culture and science-related provisions are found in both the Universal Declaration and the ICESCR. The latter includes such provisions in Article 15, largely derived from Article 27 of the former. Article 15 of the Covenant reads as follows:\textsuperscript{11}

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.\textsuperscript{12}

The drafting history of Article 15(1) sheds some light on the scope of the rights found in this provision. First, the original draft Covenant of 1954 did not include a sub-paragraph (c). The draft Article 16(1) only included the first two sub-paragraphs.\textsuperscript{13} Article 16(1) was thus originally conceived mainly from the point of view of the “end-users” of scientific innovations or cultural development. The original article did not even include an indirect reference to the interests of inventors or authors. The introduction of sub-paragraph (c) was championed by Costa Rica and Uruguay, which sought thereby to protect authors against improper action on the part of publishers.\textsuperscript{14} Uruguay argued, for instance, that the lack of international protection allowed the piracy of literary and scientific works by foreign countries, which paid no royalties to authors.\textsuperscript{15} From this perspective, the purpose of the amendment was not to qualify the first two sub-paragraphs, but rather to highlight one specific problem within the broader framework of culture and science.\textsuperscript{16}

\begin{itemize}
\item\textsuperscript{10} See \textit{infra} Part IV. B, Towards an Alternative Reading of Article 15(1)(c).  
\item\textsuperscript{12} ICESCR, \textit{supra} note 3, art. 15(1).  
\item\textsuperscript{16} The amendment was accepted by thirty-nine states including most Western European and Latin American countries and rejected by nine countries from the communist bloc.
\end{itemize}
From a contemporary point of view, the first general characteristic of Article 15(1) is that it recognizes a number of distinct rights: everyone's cultural rights, everyone's right to benefit from scientific and technological development and everyone's right to benefit from individual contributions they make. In other words, it provides a framework within which the development of science and culture is undertaken for the greater good of society while recognizing the need to provide specific incentives to authors for this to happen. Article 15(1) is more specifically concerned with the balance between individual and collective rights of all individuals to take part in culture and enjoy the fruits of scientific development, as well as the rights of individuals and groups making specific contributions to the development of science or culture. In this sense, Article 15(1) focuses on society's interest in culture and the development of science while providing recognition for the rights of specific individual or collective contributions to the development of a science, arts, or culture.

The two provisions of Article 15(1) that are of specific importance here are sub-sections (b) and (c). The right to enjoy the benefits of scientific progress and its applications needs to be understood in its national and international dimensions. At the national level, there is a duty for governments to ensure that everyone has access to all technologies that contribute to the fulfilment of human rights. An additional duty of governments is to ensure, as required by Article 2(2), that the benefits of scientific progress and its applications are available to all without any discrimination. Article 15(1)b also has an important international dimension. The right to enjoy the benefits of scientific progress implies that everyone in all countries should be able to benefit from all scientific and technological advances. Given the highly skewed distribution of technology around the world, the realization of this right in most developing countries necessitates international assistance and co-operation. The realization of the right recognized at Article 15(1)(b) therefore necessitates significant technology transfers in favor of developing countries. In other words, Article 15(1)(b) is a provision that seeks to promote the diffusion of science and technology both at the national and international levels. This is similar, though approached from a different perspective, to technology transfer provisions inserted in many sustainable development law instruments, which contribute to the operationalization of

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17. ICESCR, supra note 3, art. 2(1).
18. Cf. Committee on Economic, Social and Cultural Rights: The Nature of States Parties Obligations (Art. 2, par. 1): 14/12/90, General Comment 3, 5th Sess. ¶ 14, U.N. Doc. HRI/GEN/1/Rev.7 (1990) [hereinafter General Comment 3] where the Committee indicates that international cooperation for development “is particularly incumbent upon those States which are in a position to assist others in this regard.”
the principle of common but differentiated responsibility or more generally differential treatment.\(^{19}\)

Article 15(1)(c) is a more narrowly drafted provision, which focuses on the interests of authors. It emphasizes their moral and material interests in their creations. The recognition of the author’s moral interest relates to the idea that authors inherently identify with their creations.\(^ {20}\) The recognition of the material interests of authors fits much less easily in a human rights context. In any case, this provision should not guarantee a monopoly rent, but rather only basic material compensation for effective costs incurred in developing a new scientific, literary, or artistic production and to foster a decent standard of living.

Article 15(1) leaves open a number of important questions. First, it does not indicate how the balance between the enjoyment of the fruits of science and incentives for innovation has to be achieved. Second, sub-section (c), which deals with the reward for individual contributions, does not indicate with any specificity the type of contributions which are covered. Intellectual property rights are based on the premise that there must be a balance between the rights granted to the property rights holder and society’s interest in having access to novel developments in the arts, science, and technology.\(^ {21}\) This is related to, but much narrower than, the scope of Article 15(1). While intellectual property rights frameworks introduce rights for individual contributors, they only balance it with a general societal interest in benefitting from artistic or technological advances. Intellectual property rights frameworks do not recognize everyone’s right to enjoy the “benefits of scientific progress and its applications” as an individual and/or collective right. While Article 15(1)(c) is sometimes read as referring to existing intellectual property rights,\(^ {22}\) there is nothing that indicates that sub-section (c) is limited to existing categories of intellectual property rights. In fact, Article 15(1)(c) recognizes intellectual contributions in general without making any special reference to one or the other category of existing intellectual property rights.\(^ {23}\)


\(^{21}\) *Cf.* TRIPS Agreement, supra note 2, art. 7.


\(^{23}\) Ostergard, Jr., supra note 22 at 175, who argues that under the Universal Declaration of Human Rights intellectual property is designated as a universal human right, and
B. Regional and National Instruments

In view of the underdeveloped jurisprudence on the place of knowledge in the Covenant, this section briefly examines the extent to which a human right to intellectual property has been included in the European region, India, and South Africa.

In Europe, the right to property has been accepted as a human right since the adoption of the first Protocol to the Convention for the Protection of Human Rights and Fundamental Freedoms. Article 1 of the first Protocol which provides that “[e]very natural or legal person is entitled to the peaceful enjoyment of his possessions” has been analyzed on numerous occasions by the European Court of Human Rights.

However, there have been comparatively few cases dealing with intellectual property. In one case, the European Commission of Human Rights specifically indicated that a patent falls within the scope of the term possession. Further, the Court has accepted that the right to a fair trial in the determination of civil rights and obligations covered under Article 6 of the Convention is applicable to proceedings concerning a patent application. Overall, the case law lacks specificity with regard to intellectual property rights. Nevertheless, it is apparent that no in-depth analysis of the place of intellectual property protection in the context of the Convention has been undertaken. This is, for instance, indicated by the fact that the Commission and Court have simply assumed that existing intellectual property rights constitute the property rights over science, technology, and culture (which need to be protected in the context of the Convention) without considering the impacts that this has over the realization of other human rights.

The European Union has gone further than the European Convention of Human Rights with the adoption of its Charter of Fundamental Rights. This Charter includes not only a right to property but also specifically provides that “[i]ntellectual property shall be protected.” This seems to indicate that


there is an increasingly broad consensus in the European region in favor of making an explicit link between intellectual property rights and human rights. Nevertheless, the Charter falls short of introducing a human right to intellectual property rights because it is addressed to institutions of the European Union rather than right holders.29

The situation in the European region can be compared with the situation in two individual developing countries that have made their own important contributions in this field. In India, a fundamental right to property was included in the Constitution.30 This was deemed to include intellectual property rights in some early judgments.31 The fundamental right to property remained a controversial right in the decades following the adoption of the Constitution. Eventually, in the late 1970s, a constitutional amendment was passed to remove the right from the list of fundamental rights.32 Today, there is a still a constitutional right to property but it is not part of the basic structure of the Constitution, which implies that the constitutional remedies available under Article 32 to foster enforcement are not available any more. In practice, the existing concept of property, which is protected in India, is substantially similar to the original notion developed after independence.33 Nevertheless, the Indian experience is important with regard to the balance between different rights. In India, a decision was taken to provide for a balance between rights, which puts property below inherent rights such as the right to health or food.

Another more recent experience with regard to the place of intellectual property rights in a constitution can be gleaned from the experience of South Africa in the context of the adoption of its new Constitution, which does not recognize a right to intellectual property.34 During certification, this was challenged as not in compliance with the principles outlined in Schedule 4 to the Constitution of the Republic of South Africa Act of 1993 (Interim Constitution).35 Challengers argued that the Interim Constitution called for all universally accepted fundamental rights to be included in the new constitution.36 The Constitutional Court determined that there is no universally accepted trend towards the protection of intellectual property rights in human rights instruments and bills of rights.37

31. See, e.g., Dwarkadas Shriniwas v. Sholapur Spinning & Weaving Co., AIR 38 1951 (Bom.) 86, 90.
34. S. AFR. (Interim) CONST. 1993.
35. Id.
37. In re Certification of the Constitution of the Republic of South Africa 1996 (4) SA 744 (CC) at ¶ 75 (S. Afr.).
The South African Constitutional Court's statement constitutes an apt summary of the situation. Different countries and different regions of the world have different positions on the place of scientific and cultural contributions in human rights frameworks. Most countries protect the economic interests of authors through intellectual property rights such as patents and copyrights. Further, most countries fail to protect the moral and economic interests of intellectual contributions which cannot be protected under existing intellectual property rights. This is, for instance, the case for traditional knowledge.

Overall, there remains uncertainty concerning the place of intellectual contributions in a human rights framework. First, while it can be argued that the material interests of authors have nothing to do with a human rights framework, Article 15(1)(c) of the ICESCR seems to indicate that at least some material interests need to be taken into account in a human rights context. Second, conceptual and practical debates concerning the place of intellectual contributions in a human rights context have usually failed to take into account the multi-dimensional aspects of a provision like Article 15(1) of the Covenant. The balance between everyone's right to benefit from scientific and technological progress and the interests of authors is an integral part of the overall reflection on the place of intellectual contributions in human rights. Third, the material and moral interests of holders of intellectual property rights such as patent holders are more than adequately covered by intellectual property laws and treaties in place. A human rights approach to intellectual contributions may in fact require restrictions on what are today expansive rights. This can be opposed to the absence of protection for traditional knowledge in most countries, which is a shortcoming from the point of view of the implementation of Article 15(1) of the Covenant.

III. INTELLECTUAL PROPERTY RIGHTS AND THE REALIZATION OF HUMAN RIGHTS

Intellectual property rights largely evolved as a distinct field of law for most of their history. This was due in part to the perception that rights like patents made a specific contribution towards economic and technological development. The links between the incentives granted through the patent system and its broader impacts on society were only superficially addressed. Nevertheless, the basis of patent rights is a balance between the interests of society at large in technological and economic development and the rights granted to individual inventors. This is linked to the fact that there has always been a tension inherent in the patent system between the promotion of competitiveness for economic development in capitalist economies and
the introduction of near monopoly rights to ensure similar aims in certain specific fields.\textsuperscript{38} It has therefore always been recognized that a balance should be struck between the rights granted to patent holders and the broader interests of society. In other words, socioeconomic concerns constitute an integral part of patent laws and treaties. This emphasis on socioeconomic concerns is limited by the context within which they are introduced. Patent laws focus on the rights of patent holders and the interests of everyone else. This has two important implications. First, there is no equality of rights between the different actors in presence. Second, patent laws have only made insignificant contributions to the understanding of the potential impacts that they can have on the realization of human rights.

The relative isolation of intellectual property rights from broader debates concerning their impact on the realization of human rights or on environmental conservation has ended following the adoption of the TRIPS Agreement, whose main impact has been to substantially raise intellectual property rights standards in a majority of developing countries.\textsuperscript{39} In the context of a majority of developing countries, and probably all least developed countries, the implementation of the TRIPS Agreement has the potential to have significant impacts on the realization of human rights.\textsuperscript{40} The link between patent protection and the realization of human rights is not new per se, but it has been made much more palpable following the adoption of the TRIPS Agreement. Most developing countries have had and are having to quickly adopt intellectual property rights standards which have the potential to trigger significant socioeconomic disruption. This was probably never so visible in developed countries, where the strengthening of patent protection has largely been incremental.

The links between intellectual property rights and the realization of human rights in developing countries exist with regard to a number of human rights. They are easily visible in the case of the rights to food and to health. With regard to the human right to health, the link has become apparent in the relationship between medical patents and the realization of the right to health, particularly in the context of the HIV/AIDS epidemics.\textsuperscript{41} This is due


to the fact that a number of drugs used to alleviate HIV/AIDS are protected by patents. There is, therefore, a direct link between patents, the price of drugs, and access to drugs. With regard to the right to food, there are links between patents in the field of genetic engineering, the limitation of farmers’ rights, and access to food.

While the link between intellectual property rights and human rights has been made, it has been discussed almost exclusively in human rights forums. In other words, there remains to date a visible imbalance insofar as the language of human rights has not penetrated intellectual property rights institutions, while the language of intellectual property rights is now regularly addressed in human rights institutions. At the UN level, this has been the case of the Sub-Commission on the Promotion and Protection of Human Rights (Sub-Commission) and the ESCR Committee.

The Sub-Commission specifically debated the question of the impact of intellectual property rights on the realization of human rights. It indicated in a strongly worded statement:

[T]hat since the implementation of the TRIPS Agreement does not adequately reflect the fundamental nature and indivisibility of all human rights, including the right of everyone to enjoy the benefits of scientific progress and its applications, the right to health, the right to food, and the right to self-determination, there are apparent conflicts between the intellectual property rights regime embodied in the TRIPS Agreement, on the one hand, and international human rights law, on the other.

The ESCR Committee devoted a day of general discussion to the issue in 2000. Following the public controversy concerning access to drugs, medical patents, and the right to health in the context of the price of HIV/AIDS drugs in sub-Saharan African countries most affected by the epidemics, the ESCR Committee went further and adopted in 2001 a statement on intellectual

43. See, e.g., Chapman, supra note 40, at 872.
property rights and human rights. In this statement, the ESCR Committee argued that intellectual property protection must serve the objective of human well-being, which is primarily given legal expression through human rights.\textsuperscript{48} It intimated that intellectual property regimes should promote and protect all human rights.\textsuperscript{49} More specifically, the Committee stated that any intellectual property rights regime that would make it more difficult for a state to comply with its core obligations in relation to the right to health and food would be inconsistent with the legally binding obligations of the concerned state.\textsuperscript{50}

Both the Sub-Commission and the ESCR Committee in its 2001 Statement put the emphasis on the question of the impacts of existing intellectual property on the realization of human rights. One of the specific concerns highlighted by the Sub-Commission was the fact that while the TRIPS Agreement identifies the need to balance the rights and interests of all concerned actors, it provides no guidance on how to achieve this balance.\textsuperscript{51}

### A. Medical Patents and the Human Right to Health

General considerations concerning the impacts of existing intellectual property rights on human rights highlighted above are better analyzed by focusing on specific rights. In recent years, one of the most controversial debates has focused on the impacts of medical patents on the realization of the human right to health in developing countries.\textsuperscript{52}

The right to the “enjoyment of the highest attainable standard of physical and mental health” is specifically protected under the ICESCR.\textsuperscript{53} Core obligations of member states include the necessity to ensure the right of access to health facilities, especially for vulnerable or marginalized groups.\textsuperscript{54} In the

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\textsuperscript{49} Id. ¶ 5.

\textsuperscript{50} Id. ¶ 12.


\textsuperscript{53} ICESCR, supra note 3, art. 12. On the right to health, see generally, Bright C.A. Toebes, The Right to Health as a Human Right in International Law (1999).

case of primary health care, this includes the provision of essential drugs.\textsuperscript{55} In the case of HIV/AIDS more specific elaborations of these obligations have been given. The UN Human Rights Commission adopted resolutions indicating that access to medication in the context of HIV/AIDS is one fundamental element for achieving the full realization of the right to health.\textsuperscript{56} In other words, accessibility of medicines and their affordability are two central components of the right to health.

Medical patents have direct impacts on accessibility and affordability. They have the potential to improve access by providing incentives for the development of new drugs as well as to restrict access because of the comparatively higher prices of patented drugs. In practice, access to drugs is governed by a number of factors. Their price is one important factor. Therefore, the fact that patented drugs are nearly always more expensive than generic drugs is a relevant consideration.\textsuperscript{57} Other factors that influence access include situations where there is only limited competition between generic producers, local taxes, and mark-ups for wholesaling, distribution, and dispensing.\textsuperscript{58} Improving access can thus not be limited to bringing prices down through competition but must also include further measures such as public subsidies, or price control measures.

Fostering better access to drugs can be approached from the point of view of medical patents or the right to health. The dichotomy is unavoidable insofar as each relevant legal framework is largely insulated from the other, but both need to be considered jointly because, in practice, a solution focusing on medical patents that ends up constituting a denial of the right to health would not be acceptable. From the standpoint of the TRIPS Agreement, the question of health is one that can be tackled through some of the exceptions provided in Section 5 of TRIPS or through the two general clauses of Articles 7 and 8. This, however, falls short of providing a reasoned argument concerning the relationship between TRIPS and human rights. From the human rights perspective, the realization of the right to health does not imply an outright rejection of medical patents. Nevertheless, several points need to be highlighted. Patent protection does not ensure that the most common diseases will attract the greatest amount of research.\textsuperscript{59} This implies that

\textsuperscript{57} See, e.g., Dumoulin, supra note 42, at 53.
\textsuperscript{58} See, e.g., Joint Report of the WHO, UNICEF, the UNAIDS Secretariat and Médecins Sans Frontières: Sources and Prices of Selected Drugs and Diagnostics for People Living with HIV/AIDS (2002).
\textsuperscript{59} For the case of India over the past decade, see, for example, Jean O. Lanjouw & Margaret MacLeod, Pharmaceutical R&D for Low-Income Countries: Global Trends and Participation by Indian Firms, 40 Econ. & Pol’y Wkly 4232 (2005).
even if patent protection can be justified in markets where all consumers can afford to pay directly or indirectly the price of patented drugs, this is not so in other situations. The central issue is that the realization of human rights must be judged according to the level of implementation among the most disadvantaged. The issue is not, therefore, whether certain countries can afford patent rights, but whether the poorest in any given country stand to benefit from the introduction of medical patents.

In certain situations, the introduction of medical patents is likely to restrict access to drugs even further than now because price hikes will further limit the number of persons who can afford to purchase medicines.\(^{60}\) In a situation where compliance with commitments under the TRIPS Agreement leads to reduced access to drugs, this raises the question of a substantive violation of the ICESCR. Indeed, while Article 2 of the Covenant does not require immediate full implementation of the right to health, it obliges states to take positive measures towards the fulfilment of the right. Thus, the repeal of legislation which is necessary for the continued enjoyment of the right to health, or the adoption of legislation incompatible with pre-existing domestic or international legal obligations in relation to the right to health, would constitute a violation.\(^{61}\) In this specific case, the introduction of medical patents could be construed as a “deliberately retrogressive” step if no measures are taken to limit the impacts of TRIPS compliance on access to medicines by, for instance, providing that all essential medicines should remain free from patent protection.\(^{62}\)

Where TRIPS compliance leads to a violation of a right under the ICESCR, treaty law provides a number of rules for adjudicating conflicts between conventional norms.\(^{63}\) While these rules would lead to the resolution of a conflict in favor of one norm or the other, it is unclear whether the solution would be deemed appropriate, equitable, and satisfactory according not only to the specific rules of treaty interpretation but also to broader principles of international law. In the case of trade and environment treaties, debates over potential conflicts have led to the realization that existing rules may not provide effective and satisfactory solutions. This has led to the inclusion of savings clauses in several recent environmental treaties, which does not bring much clarity to the issue but highlights the fact that a solution to conflicts between hierarchically equivalent norms cannot be found exclusively in

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61. General Comment 14, supra note 54.

62. General Comment 3, supra note 18, ¶ 9.

existing treaty interpretation rules. In the case of a conflict between human rights and other norms of international law, different perspectives might be adopted by different institutions. In the WTO context, it is unlikely that human rights would be allowed to trump patent rights. In a human rights context, the most specific guidance that exists is provided by the ESCR Committee, which has indicated that a violation of human rights recognized in the Covenant can occur if states agree to international measures which are manifestly incompatible with their previous international legal obligations. This would tend to give priority to human rights norms, at least in the case of direct opposition with the TRIPS Agreement.

In the context of conflict of norms involving human rights, the additional factor of a hierarchy of norms needs to be taken into account. While only limited forms of hierarchy of norms are recognized in international law, there exist peremptory norms (jus cogens) that consist of some fundamental principles and norms that states are not free to modify or abrogate. These include a limited list of some of the most basic principles, accepted by all states today, such as the prohibition of slavery. In practice, one of the main consequences of the existence of peremptory norms is that states are not allowed to adopt treaties which violate them. There are sound arguments that human rights should be recognized as having peremptory status. This is confirmed by the fact that at the time of the drafting of the Vienna Convention on the Law of Treaties, a number of states mentioned human rights in their enumeration of peremptory norms. Further, human rights treaties recognize the peremptory status of some specific rights. Nevertheless, the peremptory status of human rights remains controversial and it would be difficult to find a consensus among states on this issue. As a result, an internationally adjudicated conflict might recognize, at best, that human rights take priority over intellectual property rights.


68. Hannikainen, supra note 66, at 429, noting that “in my view there is no doubt that contemporary international law has reached a stage in which it has the prerequisites for the existence of peremptory obligations upon States to respect basic human rights.”


70. Dominique Carreau, Droit International 84 (7th ed. 2001).
IV. RETHINKING INTERACTIONS IN THE TRIPS ERA

The past decade has seen tremendous change in the international legal framework for trade and economic relations among states. This includes, among many other instruments, the adoption of the TRIPS Agreement. On the human rights side, the major treaties that have been in place for several decades have not been modified, but supervisory bodies such as the ESCR Committee have ensured that the content of the rights recognized has become progressively more specifically known through the adoption of general comments. On the one hand, intellectual property rights treaties like the TRIPS Agreement have not contributed to a better understanding of the relationship between intellectual property rights and human rights since they are still largely conceived as stand-alone legal instruments. On the other hand, human rights bodies have addressed the question of the impacts of existing intellectual property rights on the realization of human rights, in particular the right to health and the question of the science, technology, and culture related provisions in the ICESCR.

The World Intellectual Property Organization (WIPO) and the WTO, which are two of the main international forums where intellectual property rights policy is defined, are constantly rethinking the legal frameworks that have been adopted, largely with a view to strengthen them in favor of intellectual property rights holders. These two institutions neither have any specific mandate to consider human rights issues nor do they show any definite inclination to address the human rights implications of the legal regimes they put forward.\(^7^1\) As a result, it cannot be expected that significant contributions to the relationship between intellectual property rights and human rights will be made in the context of either institution. On the human rights side, a variety of bodies can be concerned with the question of intellectual property protection.

This section focuses on Article 15 of the ICESCR and the role of the ESCR Committee in fostering its implementation. In this context, two main issues are taken up. The ESCR Committee has adopted a general comment which provides an authoritative pronouncement on Article 15(1)(c) and is analyzed in the first sub-section. The limited focus of the general comment ensures that it does not provide a sufficient framework for addressing all relevant links between human rights, intellectual property rights, and contributions to knowledge. As a result, the second sub-section goes beyond the general comment to suggest an alternative and broader reading of Article 15(1) of the Covenant.

A. General Comment No. 17

As noted above, the ESCR Committee put out a statement on intellectual property and human rights in 2001 as an intermediary step towards the preparation of a general comment on this issue. However, while the 2001 statement addressed broad connections between intellectual property and human rights, the Committee decided, in view of the controversial nature of several of the issues contained in Article 15(1), to first address only subparagraph (c) of Article 15(1). The Committee started the consideration of a draft general comment in 2004. General Comment 17 was eventually adopted at its November 2005 session. This is an important document because it sets the framework within which all concerned actors are now meant to understand Article 15(1)c and its relation with other rights contained in the Covenant.

At the outset, the Committee clearly asserts that everyone has a right to benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which she is the author. The Committee specifically indicates that this is a human right, which derives from the inherent dignity and worth of all persons. This is used as a way to contrast this human right claim with claims recognized under intellectual property rights regimes. In fact, the Committee specifically distinguishes the human rights claim, which is meant to maintain a link between authors and their creations to allow them to enjoy an adequate standard of living and intellectual property rights, which primarily protect business interests and investments. In the Committee’s words, it “is therefore important not to equate intellectual property rights with the human right recognized in article 15, paragraph 1 (c).”

The Committee’s analysis makes it clear that while it sees a clear distinction between the rights protected at Article 15(1)(c) and intellectual property rights, it also puts the two in direct perspective. This is confirmed in other parts of the general comment. Thus, the Committee specifically indicates that the realization of the rights protected at Article 15(1)(c) depends on

75. Id. ¶ 1.
76. Id. ¶ 2.
77. Id. ¶ 3.
the enjoyment of other rights among which the right to property is singled out. This makes the position of the Committee on the dichotomy between human rights and intellectual property rights less clear than it appears in the opening paragraph of the general comment. This is due not only to the fact there is no human right to property under the Covenant but also to the fact that in treaties where a right is recognized, as under the European Convention of Human Rights, the inclusion of intellectual property under the right to real property has been deemed relatively unproblematic. Similarly, the Committee reverts to a property right analogy at paragraph 24, where it argues that adequate compensation based on the property rights model may be an appropriate tool to compensate individuals affected by limitations of their right.

With regard to the scope of protection afforded under Article 15(1)(c), the Committee reads the words “any scientific, literary or artistic production” as including scientific publications and innovations, including knowledge, innovations, and practices of indigenous and local communities. In other words, even though the formulation of Article 15(1)(c) which refers to authors would have provided the Committee scope to restrict the ambit of this provision to authors in a narrow sense, it has chosen to provide a broad interpretation. This provides scope for rewarding most if not all types of contributions to knowledge.

The Committee introduces an important restriction to the scope of the notion of author under the general comment. It makes it clear that no legal entity can be deemed to be an author. This is an important confirmation from a human rights point of view. However, the general comment does not seem to take into account the fact that it has become difficult to distinguish the rights of the individual author and the rights that may accrue to businesses under intellectual property rights frameworks. In the context of innovations protected by patents, for instance, it is becoming increasingly difficult to dissociate individual inventors from institutions with which they are associated. The general comment fails to take into consideration that today there are few, if any, patented inventions that are commercially exploited by individual inventors, and rather that most patents are owned by big businesses. The fact that the general comment does not make this distinction explains why

78. Id. ¶ 4.
79. See infra Part II. B, addressing the developments in Europe.
80. General Comment 17, supra note 74, ¶ 24.
81. Id. ¶ 9.
82. Id. ¶ 7.
it may intimate that states must, for instance, ensure that the high costs for access to essential medicines or seeds does not undermine the rights of the population to health and food.\textsuperscript{84} While this is an obvious point to make in the context of the relationship between medical patents and the realization of the right to health, it is not clear how the realization of individual authors’ rights under Article 15(1)(c) will ever affect the realization of people’s right to health. In the real world, it is only large companies holding intellectual property rights, such as patents, whose actions can have a direct impact on people’s access to medicines. In other words, if the general comment really focuses exclusively on individual authors’ material claims allowing them to individually have an adequate standard of living without any link to intellectual property rights regimes, there is no direct link between the rights protected at Article 15(1)(c) and the impacts of medical patents held by big pharmaceutical companies.

The fact that intellectual property rights regimes fail to provide effective protection to individual inventors is cause for worry in the context of Article 15(1)(c). It is therefore surprising to see that instead of providing alternative solutions, the Committee seems to conceive levels of protection in the context of existing intellectual property rights regimes. The general comment provides, for instance, that the protection afforded must be effective, but that it need not reflect levels of protection found in existing intellectual property rights regimes.\textsuperscript{85} In other words, the only thing that the general comment seems to advocate is that the protection should be less than a monopoly right. An alternative framework could be not to recognize any link with intellectual property rights regimes and to provide for a minimal level of protection that reflects the livelihood needs of authors, or protection that contributes to an adequate standard of living.\textsuperscript{86} Similarly, where the general comment considers states’ obligation to protect, it emphasizes various elements, such as the need to prevent unauthorized use, the need to adequately remunerate authors for the use of their productions, and the need to provide compensation for unauthorized use.\textsuperscript{87} These elements are directly borrowed from existing intellectual property rights regimes. This reflects a bias in favor of a conception of authors and inventors based on the monopoly right model. This restricts any broader interpretations that may have theoretically been given to sub-sections (a) and (b) of Article 15(1) that would take into account the relevance and need for open access policies. In other words, while the general comment openly distances itself from intellectual property rights regimes, its conceptual framework is still largely influenced by existing intellectual property rights frameworks.

\textsuperscript{84} General Comment 17, supra note 74, ¶ 35.
\textsuperscript{85} Id. ¶ 10.
\textsuperscript{86} The notion of “adequate standard of living” is in fact found at id. ¶ 30.
\textsuperscript{87} Id. ¶ 31.
Further comments can be made concerning the specific legal obligations that are deemed to flow from Article 15(1)(c). First, the Committee takes what may be seen as a progressive position by highlighting the special position of indigenous peoples and the need to provide protection to “expressions of their cultural heritage and traditional knowledge.” This opens up the scope of protection beyond mainstream conceptions of protection. However, there is no conceptual or practical reason to limit the scope of Article 15(1)(c) to indigenous peoples. In fact, it is every type of intellectual contribution from any individual or group that should fall within the scope of Article 15(1)(c).

In the context of traditional agricultural knowledge, for instance, it is not only the knowledge of indigenous peoples that needs to be protected but the knowledge of all agricultural communities and all farmers. Another surprising aspect of this section is that the Committee proposes that the protection granted to indigenous peoples should “include the adoption of measures to recognize, register and protect the individual or collective authorship of indigenous peoples under national intellectual property rights regimes.” This is unexpected in the context of the Committee’s assertion that the rights recognized under Article 15(1)(c) are to be distinguished from intellectual property rights. Further, this falls within the context of ongoing debates and negotiations concerning the relevance of existing intellectual property rights for traditional knowledge protection, the need to develop sui generis forms of protection and the assertion that traditional knowledge may be completely unsuited for any form of intellectual property protection.

The Committee also devotes space to defining the concepts of moral and material interests. The notion of moral interest which is proposed by the Committee is close to the notion of *droit moral*, whose main characteristics it incorporates. This, therefore, includes the notion that the moral interests protected under the Covenant are closely connected to the person of the author, in part because they cannot be ceded. While the notion that individuals have moral interests over their intellectual contributions is relatively uncontroversial, this is not the case with regard to material interests. The definition of material interests given under the general comment perfectly illustrates the difficulties faced by the Committee in neither clearly moving away from the conceptual framework of intellectual property rights regimes nor analyzing Article 15(1) in its entirety. On the one hand, the Committee emphasizes that the protection of material interests under the Covenant is

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88. *Id.* ¶ 32.
89. *Id.*
limited to the basic material interests of authors allowing them to enjoy an adequate standard of living.\textsuperscript{93} The general comment also links this economic dimension of the rights protected under Article 15(1)(c) to other rights protected under the Covenant such as the opportunity to gain one’s living by work which one freely chooses and the right to an adequate remuneration.\textsuperscript{94} On the other hand, the Committee asserts that there is a close link between the protection of authors’ material interests and the right to own property.\textsuperscript{95} Here again, the general comment seems to emphasize the link between what it sees as the human right to property and Article 15(1)(c). This is both unnecessary in view of the Committee’s claim that there is no link between Article 15(1)(c) and property rights and inappropriate because the general comment can only make this link by referring to Article 17 of the Universal Declaration because there is no right to property under the Covenant. The general comment further reverts to a conception of material interests based on existing property rights regimes where it indicates that the rights vested in the authors to allow them to enjoy an adequate standard of living should be exclusive rights. While this may seem perfectly acceptable from the point of view of promoting the interests of individual authors, this should be read within the context of sub-sections (a) and (b).

An analysis of the general comment also needs to take into account the scope it carves for itself. As noted above, the Committee consciously decided to first consider Article 15(1)(c) and move to the other two sub-sections subsequently.\textsuperscript{96} This choice first raises the question of the priority given to certain rights over other rights. Further, since there is a direct relationship between the three sub-sections, the interpretation given to Article 15(1)(c) by definition constrains and probably restricts the interpretation that will be given to the other two sub-sections. This is of concern because, while Article 15(1)(c) tends to take a narrow view of intellectual contributions to socioeconomic development, sub-sections (a) and (b) provide a much broader perspective. The relationship between the three sub-sections is in fact of great importance because this is the kind of balance that intellectual property rights regimes have failed to effectively provide. It relates to the balance between social policy and private interests found in intellectual property rights regimes but goes much further because sections (a), (b), and (c), in principle, each have the same weight. It is therefore regrettable that the general comment does not follow the structure of Article 15(1), which would have allowed human rights law to make substantial headway on the issue of the balance of rights between the different claims found in each sub-section. This may still be

\textsuperscript{93} General Comment 17, supra note 74, ¶ 2.
\textsuperscript{94} Id. ¶ 4.
\textsuperscript{95} Id. ¶ 15.
\textsuperscript{96} Id. ¶ 4.
achieved when the Committee addresses the other sub-sections but given the temporal priority given to Article 15(1)(c), it is likely that the other two sections will be seen in the light of general comment 17. This is also borne out by the fact that the existing general comment does not put all claims on the same level. It determines that in the balance between private and public interests, the latter should only be “given due consideration.” Similarly, the general comment seems to put the interests of the author ahead of the protection of human rights. It only intimates that states “should” ensure that legal regimes for the protection of authors’ rights constitute no impediment to their ability to comply with their core obligations in relation to the rights to food, health and education, as well as to take part in cultural life and to enjoy the benefits of scientific progress and its applications, or any other right enshrined in the Covenant.

B. Towards an Alternative Reading of Article 15(1)(c)

Article 15(1) of the ICESCR provides an appropriate basis for addressing issues related to culture, science, and technology in a human rights framework because it recognizes the existence of different rights in this field and provides a balance between everyone’s interest in sharing the fruits of intellectual development and the desire to acknowledge individual contributions. Article 15(1)(c) constitutes only one of three important sets of rights recognized under Article 15(1) which should be approached concurrently. In view of the context given to Article 15(1)(c) by the other two sub-sections and in view of human rights such as the rights to health, food, education, and participation, this section seeks to propose an alternative reading of Article 15(1)(c) to the reading proposed under the general comment.

An alternative reading of Article 15(1)(c) should be based on several principles. First, it should be borne in mind that any form of individual or collective protection of knowledge may not be appropriate or welcome in all situations and all contexts. Second, the premise should be not only that there is no relationship between the rights protected under Article 15(1)(c) and existing intellectual property rights, but also that the protection afforded under this provision does not cover anyone who can directly or indirectly benefit from existing intellectual property rights. These frameworks provide more than adequate protection of material interests. Third, the focus of any interpretation of a human rights provision should be on people who are most disadvantaged and least able to take advantage of the protection offered. In

97. Id. ¶ 35.
98. Id.
the case of the protection proposed under Article 15(1)(c), one of the starting points for protection should be the protection of traditional knowledge holders who are largely excluded from the protection provided by intellectual property rights regimes while often being subjected to biopiracy. Fourth, any regime for the protection of individual or collective contributions to knowledge should take into account the fact that different people have different reasons for seeking the protection of their knowledge which may or may not have any links with prospects for its commercialization.

It is unclear whether the understanding of Article 15(1)(c) proposed under the general comment provides any additional protection to authors and inventors currently benefitting from the direct or indirect protection offered by intellectual property rights. However, Article 15(1)(c) can be understood as providing a basis for human rights to make a contribution to some of the important ongoing debates concerning the protection of intellectual contributions like traditional knowledge, which cannot be protected under existing intellectual property rights but warrant some form of protection. The protection of the rights of traditional knowledge holders under Article 15(1)(c) would go a long way to making sub-section (c) relevant in the twenty-first century for the majority of contributors to knowledge whose rights are currently neither recognized nor protected.

Traditional knowledge protection in a human rights framework needs to be put in the broader context in which it arises. Debates over traditional knowledge conservation and protection have taken place in several forums in recent years, particularly in the context of the Biodiversity Convention and the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of WIPO. Two main conceptual issues have arisen. First, it is debated whether traditional knowledge can be at all compared to knowledge that is protected by intellectual property rights because it is often not individually held and because it progresses incrementally. This is why a number of proposals focus on providing incentives to traditional knowledge holders to conserve existing knowledge rather than providing incentives to further develop their knowledge. The concept of

99. On biopiracy, see, for example, Pat Roy Mooney, *Why we call it Biopiracy, in Responding to Bioprospecting: From Biodiversity in the South to Medicines in the North* 37 (Hanne Svarstad & Shivcharn S. Dhillion eds., 2000).


102. See, e.g., Law No. 7788, Biodiversity Law, art. 10(6), 1998 (Costa Rica).
benefit sharing is one of the instruments that is being used to implement a strategy focusing on conserving existing traditional knowledge which is seen mostly as a reservoir of knowledge for other applications. Once traditional knowledge is incorporated, it can then be protected by existing intellectual property rights.\textsuperscript{103} Second, there is a parallel debate which questions the attempts to fit traditional knowledge within existing categories of intellectual property rights. Some argue this is an inappropriate strategy because, over time, intellectual property rights have come from a different logic and been inimical to traditional knowledge.\textsuperscript{104} Debates from a conservation and protection point of view are still ongoing at the international level, but some states have already attempted to introduce what are known as \textit{sui generis} protection systems. These systems seek to provide intellectual property protection to traditional knowledge holders in a context which takes into account at least some of the specificities of traditional knowledge.\textsuperscript{105}

Traditional knowledge protection through Article 15(1) is a proposition which has not been given significant consideration yet. While it has not been widely debated in the context of the Covenant, it is not a completely new proposal. In fact, the Declaration on the Rights of Indigenous Peoples recognizes that indigenous peoples “have the right to maintain, control, protect and develop their intellectual property.”\textsuperscript{106}

In the context of Article 15(1), traditional knowledge protection does not need to be equated with protection in an intellectual property context. In other words, a human rights perspective on traditional knowledge provides an opportunity to conceive protection in a broader sense that takes into account not only new contributions to knowledge but also existing contributions. Further, while Article 15(1) formulates rights as individual rights in accordance with the general orientation of the ICESCR, human rights are generally more easily adaptable to notions of collective rights than intellectual property rights instruments.

A human rights perspective on traditional knowledge constitutes a step forward compared to an intellectual property rights-based discussion. It provides scope for an understanding of rights which are not based on a

\textsuperscript{103} See, e.g., Culit, \textit{Intellectual Property Protection and Sustainable Development}, supra note 90, ch. 5.


hierarchical difference between knowledge that can be protected through intellectual property rights and knowledge that cannot, and is in the public domain and freely available to all. In this sense, a human rights perspective to contributions to knowledge constitutes one way to rethink the place of different bodies of knowledge and put them on a par, something that the intellectual property rights system is unable to achieve.

As noted above, the protection of traditional knowledge is not in itself necessarily welcomed, even by traditional knowledge holders, who see it as clashing with cultural or spiritual values favoring the sharing of knowledge rather than its individual or collective appropriation. A protection perspective through human rights may therefore not be the best solution to existing shortcomings in traditional knowledge policies. Nevertheless, it is an alternative worth considering for two reasons. First, it seems improbable that states will revert, in the near future, to a system privileging the sharing of all knowledge as a way to foster scientific and technological development. In a context that favors appropriation, the lack of protection of traditional knowledge has the unfortunate consequence of making it part of the public domain and therefore freely available.\textsuperscript{107} Second, Article 15(1)(c) constitutes a good basis for strengthening the claims of marginalized traditional knowledge holders and Article 15(1) in its entirety constitutes a good basis for rethinking the balance of rights between the users of science and technology and contributors to knowledge. In fact, this fits with the ESCR Committee’s own views where it argues that:

> Because a human right is a universal entitlement, its implementation is evaluated particularly by the degree to which it benefits those who hitherto have been the most disadvantaged and marginalized and brings them up to the mainstream level of protection. Thus, in adopting intellectual property regimes, States and other actors must give particular attention at the national and international levels to the adequate protection of the human rights of disadvantaged and marginalized individuals and groups, such as indigenous peoples.\textsuperscript{108}

Traditional knowledge protection through human rights can be operationalized in a variety of ways. First, member states to the ICESCR could take the initiative of formally recognizing, for instance, in the context of a General Comment on Article 15(1) that in the context of their commitments to protect the most disadvantaged sections of the society, they recognize that traditional knowledge is to be considered as falling under the scope of Article 15(1)(c). Second, states could make sure that all negotiations on traditional knowledge (including negotiations on related issues such as ac-

\textsuperscript{107} On questions related to the appropriation of public domain knowledge, see, for example, Cullet, Intellectual Property Protection and Sustainable Development, supra note 90, at 295–305.

\textsuperscript{108} 2001 Statement, supra note 48, ¶ 8.
cess and benefit sharing) are not conceived mostly from the perspective of its economy. Third, even if the previous proposition is successfully implemented, states still need to take action at the national level to give content to this recognition. This can, for instance, be undertaken in the context of the variety of legal instruments being developed to provide *sui generis* protection to traditional knowledge. In recent years, *sui generis* protection has usually been associated with a modified form of intellectual property protection specifically designed to ensure that it benefits traditional knowledge holders. A human rights perspective to *sui generis* protection would ensure that the rights of traditional knowledge holders are not trumped by the rights granted to research institutions or private companies.

V. CONCLUSION

Intellectual property rights instruments have never directly addressed impacts on the realization of human rights. Yet, the adoption of the TRIPS Agreement and its progressive implementation in developing countries has been associated with certain specific difficulties. Problems identified in the context of medical patents and the human right to health indicate that measures must be taken to ensure that the progressive strengthening of intellectual property rights does not contribute to limiting access to drugs, something which would directly go against the commitments taken by states under the ICESCR with regard to the progressive realization of the human right to health.

Human rights instruments have done much more than intellectual property rights instruments to provide a link between science, technology, and human rights since instruments like the ICESCR include specific provisions in this area. Article 15(1) of the ICESCR provides a coherent perspective on the question of the rights and duties of all individuals with regard to the development and the enjoyment of scientific and technological development. One of its central contributions is to provide a framework for delimiting the rights to benefit from scientific and technological development, and the rights of individual contributors to knowledge creation without framing this debate within an intellectual property rights context. In other words, Article 15(1) provides an appropriate basis for broadening debates concerning knowledge creation beyond the narrow framework provided by intellectual property rights.

Two main challenges need to be addressed in coming years at the national and international levels. First, the increasingly visible impacts of certain types of intellectual property rights on the realization of human rights needs

to be addressed by ensuring that measures are taken to protect everyone who is likely to be negatively affected by strengthened intellectual property rights standards. Second, the broader question of the place of science and technology in a human rights framework needs to be further considered. This provides a basis for addressing the question of the protection of all contributions to knowledge, something that the existing intellectual property rights system is struggling to achieve. A human rights perspective on knowledge contributions that is not bound by intellectual property rights treaties and laws constitutes a basis to rethink the position of bodies of knowledge, which cannot be protected at present. Traditional knowledge which has acquired an increasingly important position in law and policy debates in the agriculture, environmental, and intellectual property rights arenas should also be addressed from a human rights perspective in the context of Article 15(1) of the ICESCR.

Currently, most debates focus on the place of intellectual property rights in a human rights context and on the impacts of intellectual property rights on human rights. In view of the importance of science and technology in the twenty-first century, it is imperative to move beyond existing intellectual property rights when addressing the issue from a human rights perspective. This is due to the fact that Article 15(1)(c) does not refer to intellectual property rights and to the fact that a human rights perspective cannot be limited to certain types of intellectual contributions.

A human rights perspective on traditional knowledge may not necessarily be the most welcome outcome from the point of view of traditional knowledge holders and from the point of view of the promotion of free flows of knowledge. Nevertheless, within a policy context where knowledge is increasingly appropriated by different actors, Article 15(1) constitutes an apt basis for avoiding biopiracy and for introducing positive protection for traditional knowledge holders which is not based on the intellectual property rights model.