The Impact of the Trade Related Aspects of Intellectual Property Rights Agreement (TRIPS Agreement) on the Realization of the Right to Food.

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Abstract

The incorporation of a strong intellectual property regime under the Trade Related Aspects of Intellectual Property Rights Agreement (TRIPS Agreement) and the consequences of its implementations mostly for developing countries has become an issue of much concern. The implementations of the agreement can have serious repercussions on the realization of some human rights. The purpose of this paper is to examine the impact of the TRIPS Agreement on the human right to food. The obligation of states under international human rights law concerning the right to food is discussed in the first section of this paper. This is followed by comprehensive analysis of the TRIPS Agreement as affecting the right to food. In this paper it is argued that the policy space necessary for many developing countries to undertake obligations related to the right to food in international human rights law is limited by intellectual property rights embodied under the TRIPS Agreement. Finally, the paper proposes bringing the TRIPS Agreement in conformity with the obligations of countries in international human rights law concerning the right to food.

1. Introduction

Some agreements of the World Trade Organization (WTO) have been criticized much as they influence members' policies affecting negatively on a wide range of issues.[1] There has been a growing dissatisfaction over some of these agreements as they do not allow countries to effectively implement measures to protect human rights and other issues of special significance.[2] Instead, it has been observed that some of the agreements of the WTO have an adverse impact on some human rights such as the right to food. This emanates from some of the conflicts or the tensions that exist between the provisions of those agreements and the obligation of states under other international instruments and national laws and/or policies.[3] One of these agreements whose implementation has adverse consequences on some of the human rights

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[1] Ruosi Zhang, *Food Security: Food Trade Regime and Food Aid Regime*, 7 J. Int'l Econ. L. 565 (2004) at 565.

[2] Christine Caufmann & Simone Heri, *Liberalizing Trade in Agriculture and Food Security-Mission Impossible?*, 40 Vand. J. Transnat'l L. 1039 (2007) at 1041.

[3] Ibid.

is the Trade Related Intellectual Property Rights Agreement (The TRIPS Agreement). This paper focuses on the implications of the implementations of this agreement. However, the scope of this paper is limited to discussions of the impact of this agreement on the right to food.

The incorporation of a strong intellectual property regime under TRIPS and its consequences mostly for developing countries has become an issue of much concern in recent years.[4] Much attention has been given to the impact of TRIPS on access to medicines. The consequence of the TRIPS Agreement on other human rights such as the right to food has also become an issue of special significance. It is believed that the impact of the TRIPS Agreement on the realization of the right to food poses threats of equal significance.[5]

Intellectual property protection as enshrined under TRIPS could be applied to allow monopoly rights on plant genetic materials.[6] This can hamper the ability to reuse, exchange and sell seeds that are used by subsistence farmers. Granting patents for individuals or corporations with little restrictions over their right would make subsistence farmers dependent on patent holders threatening their right to food.[7] It is conceivable that members of the World Trade Organization (WTO) may adopt an alternative *sui generis* system.[8] However, the lack of clarity as to the scope of *sui generis* system has brought about confusion and a wide interpretation leading to problems of implementing such a system.

Another concern in the TRIPS Agreement is its inability to prevent or minimize biopiracy. The lack of protection of the genetic resources and associated knowledge of local communities under TRIPS may leave local communities without any benefit from the sale of products made from their resources.[9] It can also force farmers to buy back seeds and other products at higher prices. Farmers may also be prohibited from selling, exchanging and

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[4] The TRIPS Agreement has been criticized for advancing the interest of individuals by marginalizing much of the needs of the public interest.

[5] Action Aid, *Trade Related Intellectual Property Rights*, (2002). Available at: http://www.actionaid.org.uk/doc_lib/53_1_trips.pdf .

[6] Ibid.

[7] Scott Holwick, *Developing Nations and the Agreement on Trade Related Aspects of Intellectual Property Rights*, 1999 Colo. J. Int'l Envl. L. & Pol'y 49(1999) at 57.

[8] S. K. Verma, *TRIPS and Plant Variety Protection in Developing Countries*, E.I.P.R 1995, 17(6), (1995) at 281.

[9] Keith E. Maskus & Jerome H. Reichman, *The Globalization of Private Knowledge Goods and the Privatization of Global Public Goods*, 7 J. INT'L ECON. L. (2004) at 279.

reusing seeds that were made from the genetic resources available in the local communities. Hence, the implementation of the TRIPS Agreement can have serious repercussions on the realization of the right to food.

Against this backdrop, this paper explores the implications of the TRIPS Agreement on the realization of the right to food. The first section deals with the concept of the right to food. It highlights the importance of the right under international agreements. It also deals with the extent of the obligation of states to take into account the right to food when negotiating international trade agreements. The second section examines the relationship between the TRIPS Agreement and human rights in general and the right to food in particular. It focuses on the general provisions- the principles and objectives of the TRIPS Agreement. This section highlights the lack of policy space available to take measures to protect human rights issues including the right to food. It also examines whether other international human rights law would triumph over the TRIPS Agreement in the event that a conflict arises when measures are taken to implement policies protecting the right to food.

The third section explores the substantive provisions of the TRIPS Agreement that have implications on the realization of the right to food. It mainly focuses on the patent and *sui generis* system under the TRIPS Agreement and their impact on the right to food. This section also deals with the lack of protection of genetic resources and associated knowledge of local communities under TRIPS Agreement and highlights the consequences of this lack of protection. The paper concludes with a summary of the issues discussed and proposals for reform.

2. The Right to Food

2.1 Concept of the Human Right to Food

The right to food refers to physical and economic access at all times to adequate food or to the means of its procurement.[10] The main content of the right to food implies the availability of food in a quantity and quality sufficient to satisfy the dietary needs of individuals and accessibility of food in ways that are sustainable and that do not adversely affect the enjoyment of other human rights.[11] Availability refers to the possibilities either for feeding

[10] General Comment 12, *The Right to Adequate Food*(Article 11 of the covenant), Committee on Economic, Social and Cultural Rights, UN Document E/C.12/1999/5, 5 may 1999, Para. 5(hereinafter General Comment 12).

[11] Id. Para 8.

oneself directly from productive land or other natural resources, or for well functioning distribution, processing and market systems.[12] Accessibility refers to both economic (financial costs associated with the acquisition of food) and physical (food should be accessible to everyone including vulnerable individuals such as infants and disabled ones).[13]

The right to food has been recognized by some international instruments and renowned individuals as the most fundamental human right and basic human need. In the words of former United Nations (UN) Secretary General Kofi Annan it is "the most basic human rights of all."[14] The right to food is also interrelated with other basic human rights.[15] For instance, the Human Rights committee- a body established under the International Covenant on Civil and Political Rights- states that the right to food is closely related with the right to life.[16] In the Universal Declaration of Human Rights it is noted that the right to food is an essential component for the realization of human dignity and the right to life.[17] Hence, it is conceivable that the realization of the right to food is also crucial for realization of other closely related human rights.

The right to food is recognized as a fundamental human right in many international instruments. The Universal Declaration of Human Rights (UDHR) provides that "Everyone has the right to a standard of living adequate for the health and well-being of himself and his family including food …"[18] The International Covenant on Economic, Social and Cultural Rights also recognizes the right of every person to an adequate standard of living for himself and his family including adequate food[19] and the right of every

[12] Id. Para 12.
[13] Id. Para. 13.
[14] Press Release, Secretary General, *Secretary General Calls on Governments, Civil Society, Private Sector and International Organizations to Fight World Hunger*, UN Doc. UNIS/SG/2685.
[15] Vienna Declaration and Programme of Action, UN Commissioner for Human Rights, 49th session, UN Doc. A/CONF. 157/23 (1993).
[16] The Human Rights Committee, General Comment 6 (30 April 1982) on the right to life in Para. 5 noted that "the right to life has been too often narrowly interpreted. … It would be desirable for states parties to take all possible measures to reduce infant mortality … especially in adopting measures to eliminate malnutrition and epidemics."
[17] Universal Declaration of Human Rights, G.A. Res. 217A, U.N. GAOR, at preamble para. 5, U.N. Doc. A/810 (1948).
[18] Id., Article 25.
[19] International Covenant on Economic, Social and Cultural Rights, Dec., 1966, 993 U.N.T.S. 3(hereinafter CESCR) , Article 11(1).

person to be free from hunger.[20] The right is part of the social rights category and is believed to include both concepts of adequate food and to be free from hunger.[21] Apart from the above two international human right instruments which are thought to be more specific and important in discussing the right to food, the right has been recognized by International humanitarian treaties as well.[22] Moreover, the Convention on the Rights of the Child and the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) have provisions relating to the right to food.[23]

The notion has been consequently recognized and endorsed by UN Declarations. In 1996 at the World Food Summit, organized by the United Nations Food and Agricultural Organization (FAO), countries reaffirmed that everyone has a right to nutritious food consistent with the right to adequate food and to fundamentally be free from hunger.[24]

In 2000, 189 member states of the UN and the European Community reaffirmed through the United Nations Millennium Declaration their commitment to eradicate poverty and hunger a goal intended to be achieved by reducing by half the number of people who live on less than one dollar per

[20] Id., Article 11(2).

[21] See Laura Niada, *Hunger and International Law: The Far- Reaching Scope of the Human Right to Food*, 22 Conn. J. Int'l L. 131 (2006) at 151.

[22] The Geneva Conventions (1949) and additional protocols have provisions related to the right to food. For instance, Convention III relating to The Treatment of Prisoners of War under article 26 provides "The basic daily food rations shall be sufficient in quantity, quality and variety to keep prisoners of war in good health and to prevent loss of weight or the development of nutritional deficiencies." In Convention IV which concerns the Protection of Civilian Persons in time of War article 55 provides " To the fullest extent of the means available to it, the occupying power has the duty of ensuring the food and medical supplies of the population …" Additional Protocol II which concerns the protection of victims of non-international armed conflicts in its article 18(2) states " If the civilian population is suffering undue hardship owing to a lack of the supplies essential for its survival, such as foodstuffs and medical supplies, relief actions for the civilian population … shall be undertaken…"

[23] Convention on the Rights of the Child , G.A. Res. 44/25, Article 25 (2) (C) (1989) and Convention on the Elimination of all Forms of Discrimination Against Women(CEDAW 1979) , G.A. Res. 34/180, Article 12.

[24] The World Food Summit held in Rome Draw 185 participants and the European Community and introduced the Rome Declaration on World Food Security. See Rome Declaration and Plan of Action (1996), available at http://www.fao.org/docrep/003/w3613e/w3613e00.htm (accessed on 15 January, 2008).

day and those who are suffering from hunger.[25] The right to food also has been reaffirmed in some other UN General Assembly resolutions.[26]

Some authors have even argued that the right to food exists under customary international law. One of such authors- Kearns states that the right to food exists via customary international law. Kearns argument is based upon the examination of United Nations Charter, the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights (ICESCR) and recently the World Food Summit Declaration and Plan of Action.[27] Both Kearns[28] and Firer[29] argue that the reaffirmation and commitment of states in international treaties and declarations represents customary international law. Niada also concludes that there exists a customary international law right to food.[30]

2.2 Obligation of States

Article 2 of the ICESCR provides a general framework for the obligation of state parties. It requires states to take steps individually and through international co-operation for the full realization of the rights recognized under the convention particularly through the adoption of legislative measures.[31] The provision which is also applicable to the right to food requires states to "do something" i.e. to engage in activities in order to achieve the realization of the right to food.[32] "To take steps" in the provision may involve the abrogation of legislation that prevents the population from fulfilling food needs through their own effort.[33] More specifically, it is

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[25] United Nations Millennium Declaration, G.A. Res. 55/2, 3, U.N. GAOR, 55th session, Supp. No. 49, U.N. Doc. A/55/499(2000) , Para. 19.

[26] Niada, supra note 20, at 172.

[27] See generally Anthony Paul Kearns, *the Right to Food Exists Via Customary International Law*, 22 Suffolk Transnat'l L. Rev. 223 (1998).

[28] Id. at 254.

[29] See generally Caitlin Firer, *Free Trade Area of the Americas and the Right to Food in International Law*, 1 U. St. Thomas L.J. 1054 (spring 2004).

[30] Niada, Supra note 20, at 173-175. Niada cautions that the fact that the missing practice in some cases for realization of the right cannot preclude its recognition as customary international law. Niada cites an instance where the International Court of Justice in the Nicaragua case sanctioned non-intervention as an international customary norm despite states' contrary practice. Id.

[31] ICESCR, Supra note 18, article 2

[32] Food and Agricultural Organization of the United Nations (FAO), *The Right to Food Guidelines*, Information Papers and Case Studies (Rome, 2006) at 76.

[33] Ibid.

recognized by the convention that there are three levels of states' obligations to the right to food like any other human right: the obligation to respect, protect and fulfill.[34]

a. Obligation to Respect

This is a negative obligation that prevents states from taking actions that reduce access to and availability of food.[35] A negative obligation requires states to refrain from engaging in activities that hamper the realization of rights. The obligation does not require states to take actions for promotion of the right but seeks to ensure that actions of states do not adversely affect the realization of the right. The obligation to respect the right to food essentially requires states not to take measures that would prevent individuals or groups from fulfilling their right to food.[36] The obligation to respect may include a prohibition against the suspension of legislation or state policies that enable people to have access to food, or the implementation of a food policy that excludes segments of a population that is vulnerable to hunger and food insecurity.[37] This level of obligation may also be infringed by the authorization of the state to implement official policies, programmes or actions that destroy people's food sources without valid reason or compensation.[38]

Furthermore, violation of this level of obligation would also take place in a scenario where the government arbitrarily evicts or displaces people from their land, particularly if the land constitutes primary means of livelihood.[39] Hence, the state should be able to recognize the rights of local communities to their land and to the natural resources that are important for the livelihood of the community.

b. Obligation to Protect

The obligation to protect requires states to ensure that individuals or enterprises do not deprive a person of access to adequate food.[40] This would

[34] General Comment 12, supra note 9, Para. 15.
[35] The Secretary General, *Note by the Secretary General on the Right to Food*, Para. 26, Delivered to the General Assembly, U.N. Doc A/56/210 (July, 2001).
[36] General Comment 12, supra note 9, Para 15.
[37] FAO, supra note 31, at 80.
[38] Ibid.
[39] Niada, supra note 20, at 152.
[40] General Comment 12, supra note 9, Para 15.

include requiring states to enforce legislation that protects the most vulnerable segments of society such as small scale-farmers against outside interference.[41] This might also include protecting farmers from the corporate patenting of genetic material of seeds and the subsequent attempt to prohibit the sale, exchange and reuse of seeds. The state should protect individuals and local communities from the misappropriation of their resources by multinational corporations and other enterprises.

It has been noted that states should establish bodies that would have oversight roles, investigative powers and award remedies when the right is violated by subjects under their jurisdiction.[42] The obligation to protect is crucial to curb practices that disrupt the livelihood of small-scale farmers.[43]

c. Obligation to Fulfill

There are two aspects of the obligation to fulfill. The first relates to the obligation to fulfill (facilitate), meaning states should pro-actively take part in activities intended to strengthen people's access to and utilization of resources and means to ensure their livelihood, including food security.[44] The state would be given the power to decide on issues of priority with appropriate or reasonable steps to ensure food security.[45] The obligation to fulfill (facilitate) is the most crucial innovation and far- reaching aspect of the right to food.[46] The second feature of obligation to fulfill relates to a duty to provide food, within the means at states' disposal, to individuals or group when they become unable to enjoy the right to adequate food for reasons beyond their control.[47] The duty is then related to cases involving persons who have been affected by natural or man-made disasters which endangered the victim's right to food.

2.3 International Obligations

State parties have obligations at the international level to ensure that their separate or joint actions do not hamper the realization of the right to

[41] FAO, supra note 31, at 81.
[42] Niada, supra note 20, at 155.
[43] Ibid.
[44] General Comment 12, supra note 9, Para 15.
[45] FAO, supra note 31, at 82.
[46] Niada, supra note 20, at 155.
[47] General Comment 12, Supra note 9, Para. 15.

food.[48] As Niada points out, international human rights, in our case the right to food, would be deprived of any meaningful effectiveness if individuals are not protected from the impacts of decisions made in other countries.[49] Hence, states have to make sure that the domestic measures do not violate the realization of the right to food outside their own territories. What is more, as Sajo notes, it is also important to recognize that the domestic obligation to satisfy the right to food by itself entails specific obligations as to the international behavior of the state.[50] The state should not participate in any international regime including international trade agreements that undermine the realization of the right to food.[51]

More importantly, there is an obligation for all member states to the covenant on Economic Social and Cultural Rights to take due account of the realization of the right to food when negotiating international agreements.[52] In the words of the Human Rights Committee " State parties should, in international agreements whenever relevant, ensure that the right to adequate food is given due attention and consider the development of further international legal instruments to that end."[53] This would impose an obligation for member states negotiating international trade agreements to make sure that the trade agreements do not undermine the realization of the right to food. States should take every measure to avoid the inclusion of any provision which would pose any potential danger to the realization of the right to food.

2.4 Is the Right to Food a Real Right?

One of the main issues with regard to social and economic rights is whether they are real ones or just political aspirations.[54] As the right to food falls under this category similar concern surrounds it. Even though the rights have been recognized as part of a legally binding international instrument, some people have considered these rights as merely political aspirations not

[48] Id. Para 36. This Paragraph emphasizes the essential role of international cooperation in realizing the right to food and requires members to act in the spirit of the Charter of the United Nations, the Covenant and the Rome Declaration of the World Food Summit.

[49] Niada, supra note 20, at159.

[50] Andaras Sajo, *Socioeconomic Rights and the International Economic Order*, 35 N.Y.U.J. Int'l L. & Pol.221 (fall 2002) at 233.

[51] Ibid.

[52] General Comment 12, supra note 9, Para. 36.

[53] Ibid.

[54] Chris Downes, *Must the Losers of Free Trade Go Hungry? Reconciling WTO Obligations and the Right to food*, 47 Va. J. Int'l L. 619 (spring 2007) at 628.

subject to immediate implementation.[55] However, consideration of these rights as purely political aspirations "reflects a distorted and largely discredited view".[56] This is because this assertion ignores governing international law that all treaties including ICESCR are entered into by states in good faith.[57] Hence, it can be assumed that states do not commit themselves for the sake of signing treaties. They do so with a view to abiding by the obligations provided under the treaties and ensuring that commitments are implemented.

Furthermore, the assertion that social and economic rights are political aspirations is based on the premise that the rights are to be achieved progressively. For some, this suggests avoidance of any state obligations resulting in the indefinite postponement of the realization of these rights.[58] This is grounded on a misconception of definition of progressive realization and recognized rights. Progressive realization does not relieve states from undertaking their obligations at present and carrying them forward into the future. Rather progressive realization asserts that states should undertake the obligations as expeditiously as possible.[59] Moreover, CESCR in its General Comment 3 states:

> *"…the fact that realization over time, or in other words progressively, is foreseen under the covenant should not be misinterpreted as depriving the obligation of all meaningful content. It is on the one hand a necessary flexibility device, reflecting the realities of the real world and the difficulties involved for any country in ensuring full realization of economic, social and cultural rights. On the other hand, the phrase must be read in light of the overall objective, indeed the reason d'être , of the covenant which is to establish clear obligations for states parties in respect of the full realization of the rights in question. It thus imposes an obligation to*

[55] Hans Morten Haugen, *the Right to food and the TRIPS Agreement: with a Particular Emphasis on Developing Countries' Measures for Food Production and Distribution*, Martinus Nijhoff Publisher (London, 2007) at 117.
[56] Downes, supra note 53, at 628.
[57] Ibid.
[58] Niada, supra note 20, 155.
[59] General Comment 12, supra note 9, Para 14.

> *move as expeditiously and effectively as possible towards that goal."*[60]

As indicated above, states have some minimum obligations which they should undertake immediately and when the need arises. Accordingly, it is not beyond states obligations to decline international agreements which have the potential danger to undermine the realization of the right to food. Postponement of realization of the right to food by a state in every aspect is not guaranteed and constitutes a violation of the right to food.

There are also emerging precedents (court decisions) which affirm that the social and cultural rights in particular the right to food have judicial remedies. This is evidenced from the decision given by African Commission on Human and People's Rights in the Ogoni case.[61] The Commission determined that the Nigerian government violated the right to adequate food though the right is not explicit in the African Charter.[62] In the words of the African Commission:

> *"… the right to food is implicit in the African Charter, in such provisions as the right to life (Art.4), the right to health (Art. 16) and the right to economic, social and cultural development (Art. 22). By its violation of these rights,* ***the Nigerian Government tramped upon not only the explicitly protected rights but also the right to food implicitly guaranteed."*** [63]

The Africa Commission also stressed that both the African Charter and international law require and bind Nigeria to ensure access to and availability of adequate food.[64] This case shows how issues related with the right to food

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[60] Commissioner on Economic, Social and Cultural Rights, *General Comment 3: the Nature of States Parties Obligations* (Art. 2, Para. 1) , U.N. Doc. E/1991/23 (Dec., 1990) , Para 9.

[61] The Social and Economic Rights Action and the Center for Economic and Social Rights v. Nigeria is also known as the Ogoni Case. The suit was brought against the Nigerian government for its involvement in oil production through the State oil company which the operations have caused environmental degradation, health problems and other related problems among the Ogoni people. See Decision regarding Communication No. 155/96, Ref: ACHPR/COMM/A044/1 (27th of May 2002), Para. 1.

[62] Id. Para 64.

[63] Ibid.

[64] Id. Para 65.

can be brought before the court (are justiceable) implying that social and economic rights are not merely political aspirations.

The following case, though not particularly on the right to food, is also helpful to show that social and economic rights are increasingly becoming justiceable disproving the traditional thinking that they cannot be defended in a court of law. In a landmark decision by the Constitutional Court of South Africa in *Grootboom and Others v. Government of Republic of South Africa and Others, a* decision was passed stating that the program undertaken by the government violated the right to housing as it failed to provide immediate relief for people in desperate need.[65] The Constitutional Court concluded that the program was not reasonable as it did not provide for the immediate relief of the people who are living in intolerable conditions.[66] The court made a declaratory order that the program fell short of its requirements and ordered the state to devise and implement a program to help those in desperate need.[67]

Ample resources are often necessary to progressively fulfill a country's social and economic rights. However, this should not be an excuse for postponement of obligations. Progressive realization requires states to make a continued effort at every stage with the available resources to ensure that rights are respected. Thus, a state violates the rights of its people if it has failed to make reasonable efforts to respect such rights

3. Purpose and Principles of the Trade Related Aspects of Intellectual Property Rights Agreement (TRIPS) and the Right to Food

The Agreement on Trade Related Aspects of Intellectual Property Rights was a product of the Uruguay Round of the General Agreement on Tariff and Trade (GATT) held in 1994.[68] TRIPS adopted high minimum intellectual protection for all WTO members including developing countries which had minimal commitment to intellectual property rights.[69] One of the

[65] See generally *Grootboom and others v. the Republic of South Africa and Others.* Case No. CCT 11/00. (4 October 200). There were four appellants to Constitutional Court of South Africa: the Government of the Republic of South Africa, the Premier of the Province of the Western Cape, Cape Metropolitan Council and Oostenberg Municipality. The Respondents were rendered homeless as a result of their eviction from their informal houses. Id. Para 4.

[66] Id., Para 99.

[67] See generally Groothboom case.

[68] Robert P. Merges et. al., *Intellectual Property in the New Technological Age* (2nd ed., 2000) at 319-20.

[69] Laurence R. Helfer, *Human Rights and Intellectual Property: Conflict or Coexistence?* 5 Minn. Intell. Prop. Rev. 47 (2003) at 54.

reasons that made TRIPS different from previous intellectual property agreements was the fact that non compliance with the agreement brought the consequences of the threat of trade sanctions in accordance with the rulings of the WTO dispute settlement body (DSB).[70] This part examines whether objective and purposes of the agreement give countries enough policy space to implement the agreement in line with their responsibility to bring about the realization of the right to food.

It would be wrong to argue that the TRIPS Agreement is devoid of any concern for human rights. There is some implicit reference to human right issues in the TRIPS Agreement if the agreement is analyzed from a human rights perspective.[71] Principles and objectives of the TRIPS Agreement provide that the protection of intellectual property rights should contribute to the social and economic welfare of the society. To this effect, the TRIPS Agreement recognizes that countries can set different policy goals within the scope of intellectual property rights protection.[72] The objective of the agreement states that the protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology.[73] Article 8 of the TRIPS Agreement also provides that countries may take measures "necessary to protect public health and nutrition and to promote the public interest in sectors of vital importance …"[74] These provisions reveal the tension between the economic interest of intellectual property holders and the greater public interest.[75]

As the objectives indicate, it might be argued that the TRIPS Agreement accommodates human rights. In fact, the prima facie assessment of the objectives of the TRIPS Agreement would lead one to conclude that the agreement accommodates human rights and there is little conflict between

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[70] Id.

[71] Amita Gupta, *Patent Rights on Pharmaceutical Products and Affordable Drugs: Can TRIPS Provide a Solution?* 2 Buff. Intell. Prop. L.J. 127, (2004) at 130.

[72] David Weissbrodt & Kell Schoff, *Human Rights Approach to Intellectual Property Protection: the Genesis and Application of Sub-Commission Resolution 2000/7*, 5 Minn. Intell. Prop. Rev. 1 (2003) at 9.

[73] Agreement on Trade-Related Aspects of Intellectual Property Rights, April 15, 1994, *Marrakesh Agreement Establishing the World Trade Organization* (hereinafter the TRIPS Agreement), Article 7.

[74] Id., Article 8.

[75] Weissbrodt & Schoff, supra note 71, at 9.

protection of intellectual property and protection of human rights.[76] This provides a false conclusion that the TRIPS Agreement provides adequate provisions for states to take necessary measures to ensure that human rights and particularly the right to food is respected. However, a close scrutiny of the agreement and its objectives in particular reveal that there are some fundamental conflicts which are difficult to reconcile.

First, the overall purpose of the TRIPS Agreement is premised on the promotion of innovation by providing commercial incentives.[77] The various links in the provisions to human rights, such as the promotion of public health and nutrition, are expressed in broad terms and are not meant to be guiding principles, but are rather statements that are subject to the provisions of the TRIPS Agreement.[78] This means states cannot derogate from the provisions of the TRIPS Agreement when public health and nutrition issue concerns arise because the provisions condition the acts of states to achieve consistency with substantive provisions of the agreement. This strictly limits the policy space of states in dealing with human rights in general and the right to food in particular. What is more, while the agreement mentions the need to strike a balance between right holders and the public interest, it does not provide guidance on how this can be achieved in line with the agreement.[79]

Prior to the introduction of TRIPS, states could decide the level of protection they would allow in order to meet their development and public needs.[80] As the agreement focuses on the protection developed by many of the developed countries of the Northern Hemisphere, it leaves little space for developing countries to take policy measures that to a large extent take into account social and economic rights.

Furthermore, the balancing role of public interests and right holders has not historically received full support in WTO case law.[81] Many WTO cases show that dispute settlement body has generally given high priority to treaty text.[82] For instance, the WTO panel in *Canada- Patent Protection of Pharmaceutical Products* ruled that "the correct approach was to focus first

[76] Gupta, supra note 70, at 131.
[77] Id., at 132.
[78] Ibid.
[79] Ibid.
[80] See generally Theresa Beeby Lewis, *Patent Protection for the Pharmaceutical Industry: A Survey of the Patent Laws of Various Countries*, 30 Int'l Law 835 (1996).
[81] Denis Borges Barbosa et al., *Slouching Towards Development in International Intellectual Property*, 2007 Mich. St. L. Rev. 71 (2007) at 98.
[82] Id., at 101.

on the text of the provision to be interpreted read in its context and to discern from this the intention of the parties to an agreement. It was only if this left out a doubt that it was appropriate to seek enlightenment from the object and purpose of the agreement." [83] This sets an example of how the dispute settlement body is reluctant to use the objectives and principles of the agreement as an important tool for implementation. Even if the WTO Dispute Settlement Body were to use the purpose and object as a tool of interpretation, it would be difficult to assume that they would come out with a decision that would either balance or favour human rights issues over intellectual property. This is because the objectives and principles of the agreement are phrased in such a way that they are not guiding principles, but are rather subject to the substantive provisions of the TRIPS Agreement.

Given such facts, it is difficult to use TRIPS provisions for balancing human rights issues over intellectual property. The question becomes whether the WTO dispute settlement body can resort to international human rights law to resolve contradictions between the TRIPS Agreement and human rights. There has not been a conclusive determination and this question remains controversial. However, a restrictive approach has been taken towards the TRIPS Agreement focusing on the text of the agreement.[84] Hence, in the context of the WTO, it is unlikely that international human rights law would be allowed to triumph over provisions of the TRIPS Agreement.[85]

Therefore, it can be argued that the TRIPS Agreement as it stands now allows little room to accommodate human right issues. Though there are flexibilities provided under the TRIPS Agreement, they cannot be used in so far as they are inconsistent with the substantive provisions of the agreement. The obligation of states under international human rights law such as the right to food obligations is unlikely to hold sway over the TRIPS Agreement. For states to have the ability to implement socio-economic policies to protect the right to food as enshrined under international obligations, it is necessary that clear guiding principles supporting such ideas be incorporated under the TRIPS Agreement.

Hence, the TRIPS Agreement becomes one of the bottlenecks for the implementation of human rights in general and the right to food in particular.

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[83] Panel Report, Canada—Patent Protection of Pharmaceutical Products, Complaint by the European Communities and their Member States, WT/DS114/R (March 17, 2000) Para. 51.

[84] Barbosa et al., supra note 80, at 99.

[85] Philippe Cullet, *Human Rights and Intellectual Property Protection in the TRIPS Era*, Human Rights Quarterly 29 (The Johns Hopknis University Press, 2007) at 418.

It was by realizing the potential consequences of the agreement that the United Nations took the initiative to study the relationship between the TRIPS Agreement and human rights.

The U.N. turned its attention to the effect of the TRIPS on human rights in 2000 [86] when the United Nations Sub-Commission on the Promotion and Protection of Human Rights adopted Resolution 2000/7 entitled "Intellectual Property Rights and Human Rights."[87] The Sub-Commission mainly emphasized the issue of the impact of intellectual property rights on the realization of human rights. The Sub-Commission provided that:

> "*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, and international human rights law****."*[88]

Following the adoption of the Sub-Commission's report the debate over the relationship between TRIPS and human rights has continued to be contentious. In general, the agreement seems to have some apparent contradiction with human rights.

4. Substantive Provisions of the TRIPS Agreement and the Right to Food

Objective and principles of the TRIPS Agreement and their implication on human rights in general and the right to food in particular has been discussed in the previous section. This section deals with the substantive provisions of the TRIPS Agreement and their implications on the realization of the right to food.

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[86] J.H. Reichman, *The TRIPS Agreement Comes of Age: Conflict or Cooperation with Developing Countries?* 32 Case W. Res. J. Int'l L. (200) at 442.

[87] United Nations Sub-Commission on the Promotion and Protection of Human rights, *Intellectual Property and Human Rights,* 52nd Sess., U.N. Doc. E/CN.4/Sub.2/Res/2000/7 (2000).

[88] Ibid.

An issue that has become increasingly important with the introduction of the TRIPS Agreement is biotechnology. The effect of the protection accorded to biotechnology on the realization of the right to food has fuelled a heated debate between developed and developing nations over the scope of intellectual property rights. There has also been a clash over the appropriateness of creating private property protection in sensitive subject areas mainly in biotechnology.[89] Biotechnology refers to the development of processes which create or modify living organisms or biological material, the product of those processes or the subsequent use of those products.[90]

As discussed earlier, the general provisions of the TRIPS Agreement do not seem to allow countries to take measures that can be crucial to the realization of the right to food if the measures are to be inconsistent with the substantive provisions of the agreement. This would mean that states cannot take measures regarding biotechnology if the measures are inconsistent with the substantive provisions of the agreement. The substantive provisions of the TRIPS Agreement which can have implications on the realization of the right to food are discussed below.

4.1 Patents

It is important to note that patent protection is relevant in several fields of technology such as seeds, chemicals, fertilizers, and pesticides. Article 27 of the TRIPS Agreement deals with the protection of intellectual property through patents. It provides that patents shall be available for products and processes in all fields of technology provided that they are new, involve an inventive step and are capable of industrial application.[91] One important element introduced in the TRIPS Agreement is the fact that patents should be available in all fields of technology.

A patent confers an exclusive right on the owner or holder of the right. A product patent confers on its owner the exclusive right to prevent third parties from making, using, offering for sale or importing a patented product.[92] A process patent prohibits third parties from the use of a patented process and the commercialization of the process-offering for sale, selling or

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[89] Carrie P. Smith, *Patenting Life: the Potential and the Pitfalls of Using the WTO to Globalize Intellectual Property Rights*, 26 N.C. J. Int'l L. & Com. Reg. 143 (2000) at 146.

[90] Id. Living organisms refers to plants, animals and microorganisms. Non-living biological material refers to seeds, cells, and enzymes.

[91] TRIPS Agreement, supra note 72, Article 27 (1).

[92] Id., Article 28(1)(a).

importing.[93] Patents provide exclusive monopoly rights over a creation for commercial or other purposes for a certain period of time. Therefore, if a patent is awarded, for instance, for a particular seed variety, farmers would be prohibited from replanting, selling or exchanging the seeds without the consent of the patent holder. This has serious consequences for subsistence farmers in developing countries as farm saved seed account for up to 80% of farmers' total seed requirements.[94] As companies with patent hold a monopoly right on products, there is the possibility that the prices for seeds, pesticides and fertilizers would be set beyond the financial capacity of farmers. For example, farmers must pay royalties to acquire protected seeds and in addition must comply with associated restrictions on saving, replanting, exchanging and selling saved seeds.[95] Many subsistence farmers in developing countries cannot afford such products with the small income they generate from their activities. In this way, the provisions of the TRIPS agreement, as they specifically relate to seed patents, have the ability to restrict access to seeds and therefore food for many farmers' in developing countries.

Another concern in regard to agricultural biotechnology is the term of protection. The length of the patent protection is set at a minimum 20 years from the date of application.[96] This entitles a patent holder to exclusive right for about 20 years counted from the date of application. Given the large number of subsistence farmers throughout the world who still strive to fulfill basic food needs, conferring exclusive rights for such prolonged time in relation to agricultural biotechnology is unreasonable. There is no denying the reality that companies should have some incentive for invention in this area. Hence, conferring exclusive right to patent holders for some period is inevitable to create the incentive. However, restricting the use from being accessible to the public for such long time is disregarding the social aspects of intellectual property.

Reducing the length of time of patent protection for agricultural biotechnology has the advantage of releasing the processes or products such as bioengineered seeds and hybrids to farmers earlier than would be possible

[93] Id. Article 28(1)(b).

[94] Kevin R. Gray, Right *to Food Principles Vis-à-vis Rules Governing International Trade*, British Institute of International and Comparative Law (2003) at 32.

[95] Phillipe Cullet, *Food Security and Intellectual Property Rights in Developing Countries*, (2003) at 10.

[96] TRIPS Agreement, supra note 72, Article 33.

under normal patent structure.[97] This would also enhance the accessibility of plant genetic resources to the general public.[98] The TRIPS Agreement should provide a shorter period of protection, as an exception to the 20 years patent protection, to inventions like seeds, pesticides and fertilizers which are often necessary to prevent crop failure and increase productivity.

Another development in regard to the possibility of adverse consequences on the realization of the right to food is the introduction of Genetic Use Restriction Technology more commonly known as the 'Terminator' technology.[99] Terminator technology prevents farmers from replanting seeds since the genetically engineered plants will not germinate in subsequent generations or fail to have a particular trait such as herbicide resistance unless sprayed with some specific chemicals.[100] These seeds are made deliberately to have such characteristics so that new seeds must be purchased from seed companies every season. Companies use such technology protection systems to secure exclusive intellectual property control over their respective seed varieties and to secure annual profits. These technologies prevent farmers from replanting seeds, forcing them to purchase new seeds every season, which they may not be able to afford. In this way, particularly, for poor subsistence farmers, access to food would be seriously restricted.

This example illustrates how patents for such technologies can have serious repercussions for conventional farming activities throughout the world. This type of technology poses a threat to many farmers thereby adversely affecting the realization of the right to food.

The patent system under TRIPS has also implications on agricultural research. Patents have prevented the traditional flow of access to biological resources and transfer of technology between developed and developing countries where developing countries provided free access to their genetic resources and developing countries freely received the benefits of research that used those resources.[101] Though still today developed countries have

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[97] Lara E. Ewens, *Seed Wars: Biotechnology, Intellectual Property, and the Quest for High Yield Seeds*, 23 B.C. Int'l & Comp. L. Rev. 285, (2000) at 308.

[98] Ibid.

[99] GRAIN, *Intellectual Property Rights: Ultimate Control of Agricultural R&D in Asia*, (2001)
Available at: http://www. Grain.org/briefings/?id=35 (accessed on April 15, 2008).

[100] Ibid.

[101] Jeannette Elizabeth WanjiruMwangi, *TRIPS and Agricultural Biotechnology: Implications for the Right to Food in Africa*, (Unpublished, Lund University) (2002) at 72.

access to the genetic resources of developing countries, the benefits of researches made on such genetic resources are not free or no longer easily accessible.[102] The large number of patents by multinational companies on biotechnology or fundamental research processes has stifled research and complicated the exchange of plant materials and knowledge among researchers.[103] As explained above, access to patented products or processes would be conditioned to the terms by the patent holder. This becomes a bottleneck to the exchange of plant materials and knowledge among researchers, countries, and universities.[104]

Moreover, strong patent protection tends to focus on what will eventually be commercially marketable.[105] These market oriented developments are not in line with the innovations most needed by subsistence farmers.[106] Therefore, there is a possibility that inadequate investment in agricultural research that aims at meeting the food needs of farming communities dependent on saved seeds for their survival will result from a stronger focus on providing patents for genetic resources.[107]

This is not to suggest that patents in the fields of biotechnology do not have benefits for ensuring the protection of the right to food. In fact, protection granted to patents on seeds can be helpful for realization of the right to food. Patents on seeds serve as incentives for researchers in this field and this would help increase the quality and number of improved seeds. This in turn brings about high production of food. However, the TRIPS Agreement does not strike a balance between the rights of patent holders and the larger public interest.

There are few exemptions from patents for plant genetic resources. Articles 27(2) and 27(3) are the two important provisions which provide exceptions from patentability. One of the exceptionally include exemptions from patentability where the prevention within their territory of the commercial exploitation is necessary to protect *ordre public* or morality including to protect human, animal or plant life or health or to avoid serious prejudice to the environment.[108] *Ordre public* more directly relates to public

[102] Ibid.
[103] Ibid.
[104] Ibid.
[105] Smith, supra note 88, at 155.
[106] Ibid.
[107] Gray, supra note 93, at 32
[108] TRIPS Agreement, supra note 72, Article 27(2).

policy and has stricter application.[109] To apply the article 27(2) exception, the prevention of commercial exploitation must be necessary to ensure the protection of *ordre public* or morality. What is more, the exclusion should not be made on the mere fact that it is prohibited by national law. The prohibition of the circumstance by national law would not be a sufficient ground for exclusion. Therefore, a high threshold is required to apply article 27(2).[110]

The article more relevant to the type of subject matter that may be excluded from patentability is 27(3) of the TRIPS Agreement. Members may exclude plants, animals and essential biological processes.[111] 'Essential biological process' is thought to depend on the degree of technical intervention involved in creating a process.[112] The greater the need for intervention to create the process, the less likely the process is classified as essentially biological and the more likely it is patentable.[113] Be this as it may, a close look at the provision also reveals that all countries must provide patent protection on micro-organisms (such as viruses, algae, and bacteria), non-biological and biological processes.[114] Members have the obligation to grant patents and cannot exclude these from patentability. Such processes would cover genetically modified organisms giving the owner of the patent exclusive rights over the plants obtained by using the process. What constitutes micro-organisms, non-biological and biological processes are not defined under the agreement which opens the door to different interpretations. The language of article 27 invites much confusion and a wide range of interpretations. For instance, most developing countries are not sure how TRIPS distinguishes plants, animals, and micro-organisms.[115]

Though Article 27(3) (b) creates exceptions for patentability, member states are required to provide a minimum level of protection for plant varieties. Members are required to provide for the protection of plant varieties either by patents or by an effective *sui generis* system or by a combination of

[109] Haugen, supra note 54, at 234.
[110] Ibid.
[111] TRIPS Agreement, Supra note 72, Article 27(3)(b).
[112] Smith, supra note 88, at 162.
[113] Ibid.
[114] Jonathan Curci, *The New Challenges to the International Patentability of Biotechnology: Legal Relations between the WTO Treaty on trade-Related Aspects of Intellectual Property Rights and the Convention on Biological Diversity*, 2 Int'l L. & Mgmt. Rev.1 (2005) at 7, See also TRIPS Agreement, supra note 72, Article 27(2)(b).
[115] Id. at 8.

both.[116] The impact of a patent system on the realization of the right to food has been discussed above. Members are given other option-designing a *sui generis* system for protection of plant varieties. What may constitute *sui generis* and its implications on realizing food security is discussed in the section that follows.

4.2 The Sui generis System Option

The TRIPS Agreement does not provide a definition of the *sui generis* system. As a general term, a *sui generis* system is understood to mean "of its own kind" or "unique."[117] In addition to the lack of definition of what the *sui generis* system is, the TRIPS Agreement also requires that such a system must be 'effective.' Unfortunately, what constitutes an 'effective *sui generis'* system is not explained. Though it can be said that *sui generis* systems leave the option to members to design such system as they see fit, this does not mean that there is no minimum threshold that should be taken into account when designing such a system. The requirement for an 'effective' system under TRIPS is indicative that some conditions should be set to qualify the system under the TRIPS Agreement. The lack of definition under TRIPS as to what is an 'effective *sui generis'* has left countries to wonder what kind of *sui generis* system would be consistent with the agreement. This has produced significant confusion for governments seeking to understand and implement their obligations under the TRIPS Agreement.[118]

There are minimum requirements for a *sui generis system*. The wording of the provision is indicative of this fact as it conditions it with the effectiveness test. Though these minimum requirements are not provided under TRIPS, Leskien and Flinter identify different minimum requirements for *sui generis* systems to qualify them as consistent with the TRIPS Agreement. They identified the requirements based on the context of Article 27(3) (b), the context of the agreement as an integral part of the WTO Agreement and from the objectives of the TRIPS Agreement. They have identified the following requirements to qualify as an effective *sui generis* system:

1) The laws of member states have to provide protection of plant varieties of all species and botanical genera;

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[116] TRIPS Agreement, supra note 72, Article 27(3).

[117] Laurence R. Helfer, *Intellectual Property Rights in Plant Varieties: An Overview with Options for National Governments (*2002),(FAO legal Papers Online # 31) at 31. Available at: http://www.fao.org/Legal/Prs-OL/lpo31.pdf , (accessed on April 20, 2008).

[118] Id.

2) The *sui generis* system has to be an intellectual property right. In other words, plant breeders must be conferred with either an exclusive right to control specific acts with respect to the protected varieties or at least the right to remuneration when third parties engage in certain acts;

3) The *sui generis* system needs to comply with the national treatment principle. Member states have to accord the same treatment to foreign nationals with nationals;

4) Members should provide most favored nation treatment;

5) Enforcement mechanisms should be provided in order to enable action against any infringement of rights.[119]

The lack of clear guidance on how the minimum requirements can be met to design a TRIPS-compatible *sui generis* system is responsible for much of the debate and confusion surrounding this issue. In a situation where the TRIPS Agreement fails to set substantive standards, the choice of a *sui generis* system is believed to be narrowed by the effectiveness requirement. The lack of many international instruments that deal with this issue has added fuel to the debate. The only international instrument that deals with *sui generis* system is the International Union for the Protection of New Varieties of Plants (UPOV).[120] Many developed countries assume that UPOV is the model for establishing a minimum standard for a *sui generis* system.[121] In the absence of any model referenced by the TRIPS Agreement, there is a concern that developing countries may end up joining UPOV or designing their own *sui generis* system in line with UPOV requirements.

The main problem with the 1991 UPOV Convention is that the scope of the right it grants to breeders and the lack of adequate protection it provides for farmers' rights. More specifically, UPOV recognizes the exclusive rights of individual plant breeders which provides a requirement of authorization of the breeder for acts such as production or reproduction, conditioning for the purpose of propagating, offering for sale, commercializing, including exporting and importing them, and stocking for production or

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[119] Dan Leskien and Michael Flitner, *Intellectual Property Rights and Plant Genetic Resources: Options for a Sui Generis System*, (1997), (Issue in genetic Resources No. 6) at 26. Available at: http://www.bioviersityinternational.org/publications/pdf/497.pdf , (accessed on May 5th,2008).

[120] UPOV refers to the Convention for Plant variety Protection. It was first signed in 1961 and later amended in 1978 and 1991.

[121] Srividhya Ragavan & Jamie Mayer O'Shields, *Has India Addressed its Farmers Woes? A Story of Plant Protection Issues*, 20 Geo. Int'l Envtl. L. Rev. 97, (2007) at 98.

commercialization.[122] The 1991 UPOV Convention further extends exclusive rights of the breeder to include harvested material, including entire plants or parts of plants obtained through the use of the protected material.[123] Hence, the breeder can license others to produce the variety but reserve to himself the right to sell, exchange or export the product thereby making such use tantamount to infringing upon the breeder's right.[124] This excludes farmers from selling their harvested materials unless authorized by the breeder to do so.[125] The UPOV Convention seems to confer excessive rights for breeders while farmers' rights are marginalized.

However, there are some exceptions provided for farmers' rights. Though under UPOV 1991 unlicensed multiplication of seeds irrespective of the purpose is an infringement, it provides an exception that would in fact restrict breeders' rights. UPOV 1991 allows contracting parties to restrict the breeder's right in relation to any variety so as to allow farmers to use for propagating purposes of the product of harvest which they have obtained by planting on their own holdings.[126] Hence, if contracting parties do not expressly allow farmers to replant their harvest, farmers will not be allowed to save the seeds of their harvest to replant them.

The phrase "which they have obtained by planting on their own holding" is an indication that farmers cannot replant seeds of protected varieties which they have received them from others. This effectively prevents farmers from exchanging seeds between one another. For farmers who in general do not have other sources of income, preventing them from selling and exchanging their harvest is still another policy which prevents the realization of the right to food. Therefore, as Ragavan and O'Shields note, the UPOV's main deficiency is its inability to move away from the patent model.[127]

Though the TRIPS Agreement does not make reference to UPOV and countries are technically not obliged to design their laws in accordance with this agreement, in practice countries are being forced into using such agreements. Developing countries are sometimes pressured by the US and other developed countries to sign bilateral agreements that require them to

[122] Internatonal Union for the Protection of New Varieties of Plants (UPOV 1991), Article 14(1).
[123] Id. Article 14(2).
[124] Verma, supra note 7, at 284.
[125] Ibid.
[126] UPOV 1991, supra note 122, Article 15(2).
[127] Ragavan and O'Shields, supra note 120, at 112.

modify their domestic laws according to Western standards.[128] Notwithstanding the numerous concerns raised by TRIPS regarding biological resources, developed countries entering into bilateral agreements impose the UPOV Convention as the "effective *sui generis*" protection model.[129] Negotiations on bilateral agreements are taking place under the threat of trade sanctions which forces many developing countries to concede to the terms of the developed countries.[130] For instance, a bilateral agreement between Ecuador and the US which provided for the protection of plant varieties through patents or a system compatible with UPOV, failed to be ratified only after massive protest.[131]

In some cases developed countries in bilateral agreements provide patent protection for plants and animals. This is true for Jordan, Mongolia, Nicaragua, Sri Lanka and Vietnam.[132] The lack of clarity as to the scope of effective *sui generis* has opened a door for developed countries to argue that UPOV provides the minimum requirement for plant varieties protection. On this ground, they push developing countries into accepting such model for plant varieties protection.

4.3 Biopiracy

The increased profitability and commercialization of biotechnology has led to increased concern regarding the issue of biopiracy and biotechnology's effect on biological resources.[133] Biopiracy refers to the acquisition of patents for commercial interests, for example those granted to private enterprises based in the developed world over biological resources and associated knowledge from the developing world used to develop seeds or other products.[134] The period since the 1990s has witnessed an increasing interest on the part of multinational companies regarding the biological resources and associated knowledge of local communities in developing

[128] Peter Straub, *Farmers in the IP Wrench – How Patents on Gene-Modified Crops Violate the Right to Food in Developing Countries*, 29 Hastings Int'l & Comp. L. Rev. 187 (2006) at 193.
[129] Curci, supra note 113, at 32.
[130] Straub, supra note 127, at 208.
[131] Ibid.
[132] Curci, supra note 113, at 32.
[133] Valentina Tejera, *Tripping Over Property Rights: Is It Possible to Reconcile the Convention on Biological Diversity With Article 27 of the TRIPS Agreement?* 33 New Eng. L. Rev. 967 (1999) at 971.
[134] WanjiruMwangi, supra note 100, at 68.

countries which has resulted in high levels of biopiracy.[135] Corporations in the developed world have historically claimed ownership of many genetic resources in the developing world including basmati rice and mayacoba bean.[136] This has been exacerbated mainly because of the fact that while products or processes of such companies have been given higher protection under TRIPS, TRIPS has failed to give protection of biological resources and associated knowledge to local communities.

There are significant implications from such practices. Many developing countries may be obliged to buy back resources which were originally taken from them and will not be rewarded any benefits from the sale of the products which are made from the resources of local communities. It may also prevent local communities from using what may originally have belonged to their community.[137] For instance, community based traditional knowledge and farming practices form the basis of scientific breeding.[138] Since such knowledge and resources are not protected under TRIPS, it might easily open a door for misappropriation by enterprises. Hence, plant breeding right conferred on the basis of the current intellectual property system can lead to a situation where farmers or indigenous people would not have access to their own plant breeding techniques and may have to buy the seeds back at higher prices.[139] Such unfair intellectual property system does not effectively protect the biological resources of local communities and instead works to the detriment of local people in their attempt to ensure that they have adequate food.

The implications of biopiracy also extend to a situation where local communities are obliged to pay royalties on the sale of their own harvested seeds or are prohibited from marketing their harvests without the consent of the patent holder. The Enola case is a good example of this. In this case, a

[135] Biopiracy refers to the way in which developed countries benefit from biological resources of developing countries illegitimately. While Developed Countries accuse developing world of intellectual piracy, developing countries accuse industrialized countries of biopiracy. The term was coined by developing countries as a counterattack strategy to show the misappropriation of genetic resources by multinational companies in the developed countries. See Jonathan Curci, supra noten113, at 17.

[136] Erin Donovan, Beans, Beans, *The Patented Fruit: The Growing International Conflict over the Ownership of Life*, 25 Loy. L. A. Int'l & Comp. L. Rev. 117 (2002) at 118.

[137] Kunal Mahamuni, *TRIPS and Developing Countries: The Impact on Plant Varieties and Traditional Knowledge*, Int. T. L. R. 2006, 12(6), (2006) at 137.

[138] Gray, supra note 93, at 34.

[139] Ibid.

community where the staple been which was consumed regularly for many years was prohibited from being marketed in the US and anyone who imported the bean and sold it in the market without paying royalties was considered as infringing the right of the patent holder.

The Enola been is an alleged case of biopiracy, where Larry Procter, the president of seed company POD-NERS, LLC cultivated a yellow bean variety he bought in Mexico for which he received a US patent two years later covering all yellow beans of this variety.[140] Procter admitted that the Enola bean is a descendant of the traditional Mexican known as Mayacoba in Mexico but argued that it has a better yellow color and a more consistent shape.[141]

With the patent, Procter had an exclusive monopoly on yellow beans and could exclude the importation and sale of any yellow bean that exhibited the yellow shade of the Enola beans.[142] Hence, he could sue anyone in the US who sold or grew a bean that he considered to be "his own" particular shade of yellow. Procter also benefited from yellow beans imported from Mexico by imposing on them a six cent-per-pound royalty.[143] Therefore, the patent had given a right over a bean which local Mexicans have been using for many years. However, the patent did not limit the sale or growing of beans identical to Procter's but extended to any bean which shared the particular yellow shade. The beans from Mexico were then either prohibited from being imported to the US or subject to payment of royalties when sold. In this case, a person who misappropriated seeds has effectively prevented local communities from selling or growing of the bean that was taken from them. This has had severe consequences on the people who depended upon the bean for their livelihood.

To protect the patent holder of the Enola bean aggressive enforcement measures were taken which include inspection of the seeds at the US-Mexico border searching for any patent infringing beans being imported to the US market.[144] Such measures coupled with the obligation to pay royalties for the sale of the bean had resulted in a sharp decline in exports of this bean from

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[140] Daniel Goldberg, *Jack and the Enola Bean*, (2003) Available at: http//www.american.edu/TED/enola- bean.htm.

[141] Ibid.

[142] Gillian N. Rattray, *The Enola Bean Patent Controversy: Biopiracy, Novelty and Fish-and-Chips*, 2002 Duke L. & Tech. Rev. 8 (2002) at 2.

[143] See Goldberg, supra note 139.

[144] Rattray, supra note 141, at 11.

Mexico to US driving many Mexican farmers out of the market.[145] They were forced to shift to other crops or were confined to cultivation and sale of the mayocoba bean instead.[146] The production of the yellow bean fell from 250,000 tons to 96,000 tons in the year 2001[147] and the export sale of the bean dropped by over 90%[148] creating significant economic hardship to many farmers in Mexico.

5. Conclusion and Proposals for Reform

Considering the right to food as merely political aspiration is a gross misconception. To argue that social and economic rights such as the right to food are not real rights is flawed. Progressive realization does not mean postponement of obligations but rather imposes some minimum obligations that states must undertake that are reasonably within reach. States have obligations to make reasonable efforts to realize the right to food for their citizens. Accordingly, member states of the WTO, individually and collectively, have the obligation to take into account the right to food when negotiating trade agreements. Member states of the WTO should avoid provisions in agreements which pose threats to the realization of the right to food.

The TRIPS Agreement has critical implications on the right to food. The objective and principles of the agreement do not provide states with the necessary policy space to take measures for the realization of the right to food as they are conditioned in the consistency of the substantive provisions of the agreement. This undermines the efforts to be made for the realization of the right to food. The principles and objectives of the agreement should be stated in such a way that they serve as guiding principles rather than being subject to the substantive provisions.

The patent system in the TRIPS Agreement does not strike the necessary balance between the right of patent holders and the public who depends on agricultural products and processes. The patent system gives exclusive rights for holders who eventually will limit the use of such products to the detriment of those who depend on them, limiting the realization of the

[145] See Donovan, supra note 135.
[146] Ibid.
[147] Ibid.
[148] The reduction in the export sale was not limited to mayocoba bean. It had an impact in other beans too. See Rattray, supra note 141, at 11.

right to food. The system should make some exceptions to allow subsistence farmers to freely replant, exchange or sell seeds. This privilege should not extend to large-scale farmers as policies must allow patent holders to recoup their costs and maintain incentives for innovation.

In order for farmers to access patented products or processes, the period of exclusive right conferred on patent holders should also be reduced from twenty years to fifteen years for agricultural patented products or processes. This will make such products or processes part of the public domain in a shorter period of time.

The patent system should also respond to current developments. Of particular concern is the introduction of Genetic Use Restriction Technology (The Terminator Technology). This technology makes it impossible for farmers to replant a seed after a first harvest because the seeds are made incapable of growing after the first harvest. This obliges farmers to buy seeds after every harvest making them dependent on the corporations that sell the seeds. This can have severe consequences on the realization of the right to food if countries take different positions on the use of such technology. The TRIPS Agreement should respond by expressly banning the use of such technology. The agreement should impose an obligation to prohibit the patentability of such technology on all countries.

In order to allow countries to fully utilize the flexibility of the *sui generis* system, the TRIPS Agreement should clarify the ambiguities. The current provision invites much confusion and wide-ranging interpretations. Many developing countries are concerned with the type of *sui generis* system that would be consistent with the TRIPS Agreement. This has an impact on implementing a system that would help realize the right to food. A well-defined *sui generis* system is needed to avoid problems with implementation.

The lack of protection of genetic resources and associated knowledge under TRIPS has led to wide biopiracy. This in turn has resulted in forcing local communities to buy back products such as seeds which originally were taken from them. Farmers are often forced to buy back products important for increasing production or improving the quality of crops at higher prices without receiving benefits from the proceeds of the products derived from local resources. What is more, farmers may also be prevented from marketing their products without the consent of a patent holder who misappropriated the resources as can be seen in the Enola Case. This often results in great economic hardships for local communities. Hence, the protection of genetic

resources under TRIPS is also needed to avert some of the dangers posed by biopiracy.

There are apparent inconsistencies between the TRIPS Agreement and international human rights law concerning the right to food. The TRIPS Agreement does not satisfy the requirements of international human rights conventions concerning the right to food. The policy space necessary for developing countries to undertake obligations of the right to food is limited by intellectual property rights embodied under the TRIPS Agreement.

Negotiations under the Doha Development Agenda on the TRIPS Agreement should bring the agreement into conformity with international human rights law concerning the right to food. The objectives and principles of the TRIPS Agreement should be guiding principles rather than making their application conditional upon the substantive provisions of the agreement. The agreement should clarify the ambiguities of an effective *sui generis* system. It should also expressly incorporate a *sui generis* system that would give developing countries the necessary policy space to implement their obligations of the right to food under international conventions and national laws and/or policies. The TRIPS Agreement should also expressly incorporate system of protection for genetic resources of local communities to avert some of the dangers to the right to food posed by biopiracy.