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# STATE OBLIGATION ON VIRUS SAMPLE SHARING;FROM COMMON HERITAGE OF MANKIND TO STATE'S SOVEREIGN RIGHT

## ABSTRACT

The tradition of free international exchange of viruseshave been developed by the World Health Organization (WHO) probably based on the principle of "Common Heritage of Mankind". This tradition lead to legal uncertainty and unfairness in the movement of resources among states andprovides an opportunity for developed countries to obtain easy access to viruses of developing countries. Then, International Law has introduced a new regime of "State's Sovereign Right."This research focuses on whether Member States have an obligation to share pathogen materials, including viruses for preventing global public health emergency, and whether WHO Collaborating Centershas a right to share viruses to private sectors. It examines the reason why States should apply that principle. This research is normative legal research by using conceptual approach and statute approach. This research finds thatviruses arepart of genetic resources under the meaning of CBD Convention. Accordingly, there is no state obligation under International Law to share it.However, if there is an international human rights obligation to share virus, there should also be an international human rights obligation to assure the access of

affordability of drugs and vaccines. Thus, each state will have an equal obligation to enhance the global public health.
*Key Words:Intellectual Property, Virus Sample Sharing, Common Heritage of Mankind, and State's Sovereign Right*

## I. INTRODUCTION

In the era of trade on intellectual property (IP)(Graham, 2003), biological material, including viruses are one of the most valuable international commodities. Although viruses have coexisted with humans throughout history (Kane, 2009:1137),the development of modern biotechnology made viruses as a property and have been used as the main ingredient of drugs and vaccines to cure certain types of diseases. However, international legal norms governing viruses are far from settled, especially in the context of viruses sample sharing. This particularly true when Indonesia rejected to share influenza virus to the World Health Organization (WHO)several years ago and because of that, state's obligation of virus sample sharing shouldbe revisited, not only to provide legal certainty, but also fairness among states.

The WHO's tradition of free international exchange of virus was probablyderived from the concept of common heritage of mankind applied to genetic resources under International Undertaking of Plant Genetic Resources for Food and Agriculture (IUPGRFA, 1983). This tradition lead to unfairness on the basis that viruses originated from one country can be freely sent to another countries without any compensation, while the receiving country can develop such viruses into a very valuable new invention such as vaccines, and sell the vaccines as expensive commodities to sending state which facing health crisis.

While the existance of the Convention on Biological Diversity (CBD), (The United Nations Convention on Biological Diversity, 1992) provides the concept of state's sovereign right to govern biological resources including viruses within their territory. Because of that, it is important to exmines the tradition of sharing samples of virus, not only from the perspective of WHO and CBD, but also from the international human rights norms and international trade law of World Trade Organization (WTO)-Trade Related Aspects of Intellectual Property (TRIPs) Agreementparticularly on patent (Agreement on Trade Related Aspects of Intellectual Property Rights, 1994).In the international fora, sharing virus is closely connected to the protection of human rights, particularly right to health and protection of intellectual property assets.

Based on the above explanation, the research questions can be formulated as follows:

1. Based on the Principles of "Common Heritage of Mankind", do States have an obligation under International Health Law to share pathogen materials, including viruses and whether WHO Collaborating Centers has a right to share viruses to private sectors ?
2. Why States should apply the principle of "Sovereign Right", and whether pathogen material, including virusesregarded as "biological resources" within the scope of Convention on Biological Diversity (CBD) ?

3. Do Stateshaveany obligation on Virus Sample Sharing from the Perspectives of International Human Rights Laws and International Trade Law of Intellectual Property?

## II. RESEARCH METHOD

The type of this research is normative or doctrinal which provides a systematic exposition of the international laws and rules governing biological resources particularly virus sharing, analyses the relationship between rules and explains areas of difficulties.While the approach used for this research is conceptual approach and statute approach. This conceptual approach is very important to analyseinternational law concepts relevance to the protection of biological resources, particularly the concept"common heritage of mankind", "sovereign's right", and "fair and equitable benefit sharing".While Statute approach examines all international laws & regulation relevan to legal issues in this research. This research uses primary and secondary legal materials.

## III. RESULT AND ANALYSIS

### A. WHO's Tradition; Free International Exchange of Virus

It is a tradition that international community has freely shared virus samples by sending specimens to the WHO and this practice of free international exchange of viruses have been maintained by WHO more than five decades (http://www.cidrap.umn.edu).This tradition have developed by obtaining virus samples from countries where infected patients are located and distributing those samples to WHO's Collaborating Centers that worked on identifying appropriate vaccine candidates and drugs.

However, international customary law that regulates virus sample sharing is weak because there is no legally bound (*opiniojuris*) which requires States to such sharing (Fidler, 2007:4). Furthermore, it would be unlikely that if States have participated in the WHO's Global Influenza Surveillance Network can be used as justification that States have a legal obligation to share samples of virus. This is becausethe Network has operated without reference to international law since its establishment in 1950s (Fidler, 2007:4).

In accordance with terms of reference provided by the WHO, the result of research and support of Collaborating Centers then made available to the WHO. Interestingly, there was no prohibition for those Collaborating Centers to provide and share samples of virus and research data to private sector companies that develop medicines and vaccines (Third World Network, 2007: 2-3). In this context, Fidler argues that such tradition and practice play a significant role for supporting global public health (Fidler, 2008:88).

It is important to note that there is no international obligation under treaty or agreement for Members to follow such practice. The Articles 64 and 65 of the WHO Constitution respectively requires Members to "provide statistical and epidemiological reports in a manner to be determined by the Health Assembly" and to 'transmit upon the request of the board such additional information pertaining to health as may be practicable' (WHO Constitution).In interpreting

these above provisions, Abbott states that these provisions can be interpreted to allow the organs of the WHO to instruct Member States to provide certain pathogen materials to the WHO (Abbott, 2010).

Furthermore, International Health Regulation (IHR) provides authority to the Director-General of WHO to declare an international public health emergency and to made recommendation regarding the steps Member States should take to address the emergency (IHR article 12). It is expected that Member States also implement those recommendations (IHR article 2). Moreover, under the IHR, Member States are obligated to provide information concerning conditions that may considered as emergencies to international public health (IHR article 6). It is also clear the IHR does not require specifically that a Member State share physical samples of biological material, although under the general undertaking to protect against and provide a response to the international spread of disease, such requirement might be implicit (Abbott, 2010:9).

If the above interpretation can be justified for the sake to protect certain pandemics, it is important to note the IHR does not provide a detailed approach for handling such samples or to deal with issues in relation to the rights of third parties with respect to them. This unclear obligation leads to uncertainty of right and obligation of the Member States in sharing viruses. Because of that, prior to Indonesia's decision to reject sharing viruses, the WTO and its Member States recognized that the global system for creating and distributing vaccines to alleviate the impact of pandemic influenza is inadequate (http://who.int/WHO_CDS_EPR_GIP_2006_1). There was no clear restriction placed upon the uses of virus samples except for purpose of good research and clinical practice and nothing to prevent a private sector obtaining patent related to such biological material and its derivatives (Third World Network: 2007: 8).

## B. Viruses; From "Common Heritage of Mankind" to "State's Sovereign Right"

The concept of "common heritage of mankind" was firstly used to regulate genetic resources, and it enshrined under IUPGRFA (IUPGRFA article 1). According to Brush, term 'common heritage' refers to the treatment of genetic resources as belonging to the public domain and not owned or otherwise monopolized by a single group or interest (Brush, 2012: 6). The logical foundation of common heritage is in the nature of a crop's genetic resources, the universal processes of diffusion and dispersal, and historical practices of reciprocity. Crop's genetic resources derive originally from natural and amorphous processes or crop evolution; like mutation, natural selection, exchange, and decentralized selection, and because no person or group control crop evolution, it is inappropriate for anyone to claim authorship or ownership (Brush, 2012: 7).

This means that they were treated as a free good and everybody had the right to use them. Based on this principle, as stipulated under Article 5, States which had Plant Genetic Resources under their control expected 'to allow access to samples of such resources, and to permit their export, if the resources have been requested for the purpose of scientific research, plant breeding or genetic resources conservation' (Baslar, 1998:307). Such access will be made free of charge on

the basis of 'mutually agreed terms' (MATs) (Baslar, 1998:308).

Historically, this 'common heritage concept' of international law is based on the notion that humanity has a vital interest in certain natural resources and because of that the benefit and burdens related to the exploitation and preservation of such resources should be shared by all (Baslar, 1998:309-310). This concept has been applied to regulate 'area' in accordance with the United Nations Convention of the Law of the Sea (UNCLOS) and outer space under international law (UNCLOS Article 1). This principle then was in contrast to the 'common concern' and 'national sovereignty' or state controlled approach of the CBD.

Furthermore, the principle of 'common heritage' under IUPGRFA can be regarded as providing an opportunity for developed countries to obtain easy access to the resources of developing countries, and then as a result of such access, the production of the result protected byintellectual property. Marin referred to Kloppenburg and Kleinman'sarguments, stated that:

> Germplasm flows from the South as the 'common heritage of mankind,' it returns as a commodity. Therefore, the value of PGRs is recognized as soon as it enters the markets. PGRs have undergone biotechnological processing, they are highly priced, while germplasm is taken for granted.(Kloppenburg &Kleinman, 2002: 49)

This approach is regarded as unfair by a number of developing countries, because it facilitates the free movement of genetic resources from developing countries to developed countries. Then IUPGRFA then was revisited to International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) (http://fao.org/ag/cgrfa/IU.html). Under this last Treaty, this free access principle was then limited by three resolutions to achieve a more fair and equitable balance of the concerns of developed and developing countries.Even though like that, some argues that in practice they are still contradictory each other (Marin, 2002: 50). For example, Resolution 4/89 emphasizes that free access, in which it does not necessarily mean 'free of charge'. Such an approach might be useful in developing an equitable sharing benefit scheme under the CBD.

The CBDis a convention that is not directed toward establishing commercial private property interests and promoting trade policy. It is the first international treaty in environmental law to deal with all aspects of biodiversity (Bowman and Redgwell, 1996:1). The CBD was negotiated under auspices of the United Nations Environment Program (UNEP) and drafted under the spirit of the Rio Earth Summit 1992. This CBD, however, suddenly has become a very prominent instrument in the discussion on virus sample sharing, since the rejection of Indonesia to share samples of influenza virus H5N1 around February 2007.

From an environmental law perspective, the CBD provides a comprehensive and holistic approach of the three important goals; (1) the conservation of biological diversity; (2) the sustainable use of natural resources, and; (3) fair and equitable sharing from the use of genetic resources (Johnston, 1996:53). It also regarded as the first international agreement acknowledging the role and contribution of the indigenous and local community in the conservation and sustainable use of biodiversity (CBD article 8).

In the context of virus, one of the most important questions is that whether virus falls within the meaning of "genetic resources" under the CBD. Indeed, the argument for this is technically complex from legal point of view.

The CBD defines "biological diversity" under its Article 2, as follows:

> Biological diversity, means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystem.

In interpreting this article, Abbott states that viruses may also be part of the variability among living organisms within the definition of "biological diversity" (Abbott, 2010:12). Viruses may also be included within 'living organisms" because they replicate within host biological organisms.

Then, the CBD defined "biological resources" that includes "genetic resources, organism or part thereof, populations or any other biotic component of ecosystem with actual or potential use or value for humanity." (CBD article 2).

Furthermore, the Article 15.1 of the CBD provides that "Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and its subject to national legislation." This article is essential to the CBD, at least in two ways.

Firstly, it recognizes that states have 'sovereign rights over their natural resources' in their territories (CBD article 15). However, the "natural resources" is not specifically defined in the CBD. "Natural resources" consists of the term "natural" that refers, *inter alia*, to "existing in or formed by nature; consisting of objects or materials of this kind; not artificially made or constructed (The New Shorter Oxford English Dictionary, 1993:1888-89).While the term 'resources' refers to "a means of supplying a deficiency, a stock or reserve which can be drawn on when necessary ((The New Shorter Oxford English Dictionary, 1993:1888-89). Based on the above definition, it can be seen that term 'natural resources' is very broad.

Secondly, the national governments have the authority to determine access to genetic resources and this second clause of Article 15 operationalizes the recognition of sovereign rights over natural resources with specific reference to "genetic resources". This "genetic resources" means "genetic material of actual or potential value", and'genetic material' means "any material of plant, animal, microbial or other origin containing functional units of heredity." (CBD article 2)

Therefore, virus may fall within the definition of 'biological diversity' and 'biological resources' as well as within the definition of 'genetic resources" under the CBD. However, there is no established authoritative interpretation regarding whether virus contains 'functional unit of heredity' within the meaning of "genetic material" under the CBD. Virus, as a part of pathogen materials contain heredity information and are capable of reproduction, but only within living host cells. Virus do not contain "functional units of heredity" if virus may not reproduce outside

of a host organism, so the units of heredity might be considered 'non-functional."

It is acknowledged that there are two conflicting arguments for and against the inclusion of virus under the CBD. The argument in favor to include the virus falls within the CBD is based on the reason that the CBD was aimed to preserve biological diversity and would permit further research and development of biological resources that might be used to develop drugs to cure of disease (Abbott, 2010:13). The CBD was also intended to prevent bio-piracy and to provide an opportunity for developing countries to share in benefits from exploitation of biological resources. Virus, can be used to develop drugs and vaccines for human and animal use, because of that it have value, including monetary value.

While those who against the inclusion of virus under the CBD stated otherwise, that virus do not have 'actual and potential use or value for humanity' as stipulated under Article 2 of the CBD. Although virus represents a form of biodiversity, the main interest of science and public health is to remove dangerous viruses, and not preserve them. The term 'biological resources' implies that the subject materials have a "positive value" of their own, and not a "negative value" that can be turned positive only as a means of reversing themselves. Furthermore, philosophically, the CBD is a conservation-oriented agreement and because of that CBD did not committed to protect biological materials that cause harm to human and should not have its objective to conserve inherently dangerous materials like virus.

However, it seems uneasy to exclude virus from the scope of CBD on the ground that CBD was negotiated to protect the interest of developing countries in a fair and equitable benefit sharing from ownership, preservation as well as the use of biodiversity, while during the time of negotiation, biological resources were well understood as a basis for development of drugs and vaccines.

The CBD, in its preamble "Reaffirm[s] that states have sovereign rights over their own biological resources". The CBD's principle also in its preamble as follows:

> State have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

From the above principle, it is important to note that the state's sovereign right to control biological resources including virus within its territory does not suggest an absolute right to control. Under international law, there is exception to the rights of states, for example, the human rights principles protect certain fundamental rights to individuals regardless of their nationality. In the above principle of Article 3, CBD recognizes a balance of rights and responsibility of states.

If viruses are genetic resources within the meaning of CBD, the Article 15 of the CBC also applies to such viruses. This Article requires Contracting Party to have endeavored to create condition for access based on mutually agreed terms (MAT), and subject to prior informed con-

sent (PIC). This Article also requires that scientific research based on genetic resources conducted by Contracting Party shall carry out with the full participation of such Contracting Party. Furthermore, legislative, administrative or policy measure shall be taken by Contracting Party though financial mechanism if necessary with the objective to achieve a fair and equitable sharing of benefit derived from the utilization of genetic resources (CBD article 15).

In addition, the CBD provides an international regulatory framework to reconcile the need for trade and environment protection under the Cartagena Protocol, focusing on trans-boundary movement of living modified organisms resulting from the use of modern biotechnology that may have significant impact on human health and environment (Cartagena Protocol article 1). Under this Protocol, living organism is defined as "any biological entity capable of transferring or replicating genetic materials, including sterile organisms, viruses andviroids"(Cartagena Protocol, article 3). This definition, advocates that parties to the Protocol recognized the ambiguity inherent in the definition of genetic resources and required to clarify the scope of coverage of the Protocol. Interestingly, this Cartagena Protocol clearly applies to viruses which regarded as 'living organism' which transfer or replicate genetic matter, but not essentially because viruses 'contain functional unit of heredity" (Mullis, 2009:954).

The CBD accomplished a major achievement when this Convention established the Decision VI/24 of the Bonn Guidelines (http://www.biodiversity.org). This Guidelines aims to provide assistance for parties and other stakeholders in developing access and benefit sharing strategies in general and in helping to establish legislative, administrative or policy measures on access and benefit sharing or when negotiating contractual arrangements for access and benefit sharing in particular. Unfortunately, the implementation of the provision related to access to benefit sharing is very slow (Koutouki&Bieberstein, 2012:522). Accordingly, some groups of developing countries, including the Group 77 and China, as well as the Like-Minded Megadiverse Countries (LMMC),pressed for a specific protocol on access and benefit sharing (ABS) (http://www.undp.org.).

As a result, the Nagoya Protocoladopted by the Parties to CBD and it opened for signature on February 2nd, 2011 and enter into force after its fiftieth ratification (Nagoya Protocol article 33). This Protocol, as its preamble refers to some of difficulties in the implementation of the CBD, and consequently it recognizes the importance of promoting equity and fairness in the negotiation of MAT between providers and users of genetic resources.

The most important aspects of this Protocol is the provision on benefit sharing and the regulation of access. Under the Article 5, benefit sharing in a fair and equitable manner divided into three categories that are; (1) benefits arising from the utilization of genetic resources; (2) benefits arising from genetic resources that are held by indigenous local community; and (3) benefits arising from the utilization of traditional knowledge associated with genetic resources. It means that this Protocol designed to improve many inadequacies found throughout the CBD.

C.States Obligation on Virus Sample Sharing; From the Perspectives of International Human Rights Laws and International Trade Law of Intellectual Property

Under international human rights instruments, it is recognized that rights to life and health are part of fundamental rights of individual, and there is an obligation for each state to protect the life and health of individual from whom it exercises responsibility. It is a generally accepted proposition that a state would not be responsible for the protecting life and health of individual in other states because state does not have legal authority to regulate or act in other states (Abbott, 2006:145).On the basis of CBD's principle, a state may not be engage in activities that threaten or cause harm to other states (CBD Preamble). Similarly, international human rights instrument also should prevent one state from engaging a conduct that may threaten enjoyment of human rights in other states. Paul Hunt states that:

As a minimum, all states have a responsibility to cooperate on transboundary health issues and to 'do no harm' to their neighbors. High-income States have an additional responsibility to provide appropriate international assistance and cooperation in health for low-income countries (Hunt: 2008).

Similarly, Abbott argues that it would be inconsistent if international legal rules prevented states from acting to contaminate the environment of neighboring states, but did not prevent them from acting to injure the life or health of individuals in neighboring states (Abbott, 2010:8). Even though Fidler argues that "precise obligations created by the right to health remained unsettled, particularly the duty to participate in international cooperation" (Fidler, 2007:5). Abbott further states that:

> It may well be that each state has an obligation under international human rights law to take reasonable steps to assist other states in the prevention of pandemic disease. For example, the refusal by a state to share virus samples when the outbreak of a pandemic was imminent could constitute a violation of international human rights standards. However, the refusal to share pathogen materials in non-emergency situations may not raise the same level of human rights concern(Abbott, 2010:8).

Because of that, according to Abbott, the question of whether there is an international human rights obligation to share virus probably must be assessed from the standpoint of the intensity and immediacy of a threat to public health(Abbott, 2010:8).

Under international law, there is a situation which can create an international legal responsibility for state to prevent a threat of international peace and security, for instance if a decision to withhold virus threaten the capacity of WHO and its member states to deal with a potential pandemic might constitute an imminent threat of serious harm to individuals and other states(Abbott, 2010:8). If due to the withholding of virus by a member state would prevent the development of vaccine against influenza pandemic and because of the pandemic, cause death of ten millions of individuals. It means that states likely to suffer from the lack of vaccine due to a member state refuse to share virus, and therefore, the refusal to share can be regarded as to threaten national security.

Simultaneously, if there is failure of states to address problem of access on affordable medi-

cines lead to millions of people die every year from treatable diseases, there should be an international human right obligation to assure the access of affordability of medicine and vaccines. In this context, if Indonesia, for instance, have international human rights obligation to share H5N1 virus sample to WHO, Member states as a producer of drug and vaccine, like the United States, Japan and other European nations should also have the same international human rights obligation to assure the affordability access of drug and vaccine. As the representative of Thailand at the WHO's Executive Board meeting in January 2007 argues as follows:

> [w]e are sending our virus [samples] to the rich countries to produce antivirals and vaccines. And when the pandemic occurs, they survive and we die...We are not opposed to the sharing of information and virus [samples], but on the condition that every country will have equal opportunity to get access to vaccine and antivirals if such a pandemic occurs(Fidler, 2007:5).

Accordingly, the above arguments support the notion of a fair and equitable benefit sharing from the utilization of genetic resources including virus provided by the CBD. Through this approach, both the provider states and receiver states will have an equal obligation to maintain the condition of global public health.

While from the perspective of international trade law, particularly from the perspective from patent law, viruses together with other biological resources is one of the main material of drugs and vaccines.Patents are relevant to the issue of virus samples sharing because public and private corporation may protected their investment on research and development, for instance, on isolated viruses and its derivative products in the form of drugs or vaccines. Such approach can be justified under the principles of patent law.

Although a traditionally accepted principle of the patent law provided that life forms were disqualified from patentability (Palombi, 2004:219), the practical application proved contrary to such principle (Dutfield, 2003:151). Article 27 of the TRIPs Agreement deals with the patentable subject matters, and provides that patents shall be granted to 'inventions', in the form of all new and useful products and processes in all fields of technology without discrimination. This Article also requires member nations to grant patents in micro-organisms and non-biological and microbiological processes. Accordingly, Article 27 provides a legal basis for patent protection related to viruses.

It is not only viruses that can be patented, but also other 'products of nature'. Some experts argue that a mere discovery can be transferred into an invention if there is a degree of technical human intervention. This leads to the question of what degree of human intervention is required under the patent law. The answers to this question vary. For example, Ducorargues that:

> Generally, 'products of nature' are patentable when some human intervention has been necessary to make them available. The intervention generally resides in the isolation or purification of naturally-occurring product, and translates in claim language as 'essentially pure', 'biologically pure', or isolated. The current situation is well summarized by the Court in Diamond v Chakrabarty; patentable subject matter includes 'anything under the sun that is made by man (Ducor, 1998:6).

Furthermore, human's cell and tissue can also be patented. *John Moore v. The Regents of the University of Californi*decisionclearly stated that patent regime providesan incentive for human creativity and "it is the inventive effort that patent law rewards, and not discovery of naturally occurring raw material (Halbert, 2005:117)."Surprisingly, this cell and tissue is owned by those who have spent their labor to create a property right in the cell as provided under the *Moore'scase*decision in which Moore's spleen is regarded as simply a raw material, and it has no value until the work of a medical research is invested in the raw material, and thus create value (Halbert, 2005:115). Moore cannot own his spleen because it is a mere raw material and the medical researcherthrough their labor, create a property right in Moore's cells. The Court decides that the spleen has no worth to Moore, otherwise, it has negative worth as a cancer-causing agent that could potentially lead to Moore's death. Moore also have no right to receive any benefits from the commercialization drugs derived from their body part although his cell line was sold to a Swiss drug company resulting in a drug worth millions of dollars (Halbert, 2005:115).

Interestingly, the Court used the term 'raw materials'throughout its decision to refer to Moore's tissue. When the court argues that research will be hindered if Moore is give a patent interest in his cells, the court states that "the extension of conversion law into this area will hinder research by restricting access to necessary raw materials" (Halbert, 2005: 117). Furthermore, the court suggests that "if anyone is to limit the scientific communities' access to raw material, it should be the legislature (Halbert, 2005:117)." Similarly, Boyle also argues that:

> Views through the lens of authorship, Moore's claim appear to be a dangerous attempt to privatize the public domain and to inhibit research. The scientists, however, with their transformative, Faustian artistry, fit the model of original, creative labor. For them, property rights are necessary to encourage research (Halbert, 2005:117).

From the above arguments showed that the international trade law of IP approach regarding the ownership and control on viruses are completely different from the CBD and international human rights approach. Because of that, patent regime rejects the notion of a fair and equitable sharing benefit derived from the utilization of genetic resources, including viruses, human's cells and tissues. This is in line with Boyle's argument above which seenviruses, human's cell and tissues as a public domain.

Such condition lead to a concern about the relationship between the TRIPs Agreement and the CBD, in the absence of CBD principles like PIC, disclosure of origin and benefit sharing scheme in TRIPs. The absence of such principles in TRIPs Agreement is simply because this Agreement is designed under a private property approach for fostering the liberalization of international trade. The driving force behind the conclusion of this Agreement were the most powerful actors of developed nations in high technology and creative industrial sectors, as well as multinational corporations' elites holding significant IPRs portfolios (Braithwaite &Drahos, 2000:204). The TRIPs Agreement is intended to ensure private rights through the protection of IP and also to secure these rights by appropriate and effective means (TRIPs Agreement article 7).

The CBD, however, is intended to ensure the conservation of biological diversity, sustainable use of genetic resources and fair and equitable sharing of any benefit arising from the use of the resources (CBD article 15). Thus, they have different rationales and objectives.

Developing countries argue that TRIPs Agreement may have undesirable effects on the CBD and consider that this Agreement lacks balance because TRIPs Agreement does not require benefit sharing (Cottier, 1998:567). TRIPs Agreement also does not require applicants for IPR to provide information concerning the origin of genetic resources (Carvalho, 2000: 372), or the sharing of economic and technological benefits of genetic resources related patents (TRIPs article 33).

It has been a point of criticism that these differences of underlying principles has meant that the TRIPs Agreement does not effectively complement other international legal instruments and indeed is a source of disharmony. Countries required tofulfill these international obligations which are signatories to both TRIPs and other conventions must now examine the relationship between TRIPs Agreement and other conventions to have appropriate national legislative implementation. The WTO itself had measured this relationship in 1995 through the Committee on Trade and Environment (Kagedan, 1996:107).

Based on the above condition, in the Doha Ministerial Declaration, the TRIPs Council was instructed "to examine, *inter alia*, the relationship between the TRIPs Agreement and the CBD, and protection of traditional knowledge and folklore, and other relevant new developments raised by Members pursuant to TRIPs Article 71.1." Until 2010, the result of the consultations was reported to the Director-General by stating that "while my consultations have not created convergence they have certainly shed clearer light of the divergences" (Abbott, 2010:18).

## IV. CONCLUSION

There is no explicit legal obligation for Member States to share samples of virus under International Health Regulation (IHR), although under the general undertaking to protect against and provide a response to international spread of disease, such requirement might be implicit.

Virus is genetic resources under the meaning of CBD, and consequently, States have sovereign rights over viruses located in their territories, and have authority to determine the conditions of access. The CBD also requires Contracting State to have an endeavor to create condition for access based on mutually agreed terms (MAT) and prior informed consent (PIC). And to implement this Convention, the Nagoya Protocol adopted by the Parties to CBD to deal with access to genetic resources and a fair and equitable sharing of benefits arising from their utilization. However, under the CBD, Contracting States also have responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states.

It would be inconsistent if international legal rules prevented states from acting to endanger the environment of other states, but did not prevent them acting to injure the life or health of individuals in other states. However, if there is an international human rights obligation to share

virus, there should also be an international human rights obligation to assure the access of affordability of drugs and vaccines. Thus, each state will have an equal obligation to enhance the global public health.From the perspective of WTO-TRIPs Agreement on patent, virus and other 'product of nature' is patentable based on the Article 27. Human's cell and tissue are regarded as a raw material and it will be owned by those who have spent their labor to create a property rights. This raw material is regarded as public domain, thus restricting access to such material will hinder research. Because of that, patent regime rejects the notion of access to and a fair benefit sharing for the utilization of viruses enshrined under the CBD.

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