

## 2. THE CONCEPT OF “GLOBAL PUBLIC GOODS” AND ITS APPLICATION ON PATENTED INVENTION IN SOLVING THE PROBLEM OF ACCESS TO MEDICINES

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### ABSTRACT

The problem of patents in access to medicines arose after the TRIPS Agreement came into force in January 1995. Although the question is well known and documented, the proposed solutions did not allow for resolving the issue. This paper is in support of the idea that the approach adopted up to this point, essentially based on the idea of public aid in development or on the ethical considerations, is not adequate. It thus suggests changing paradigm and analyzing the question under another approach, that of the concept of the *global public goods*. With this issue of patents and access to medicines, the challenge lies in finding the balance between promoting the widespread use of knowledge and creating incentives to produce that knowledge. In this way, medical innovations, including formulas and processes of manufacturing drugs, must be, as all other knowledge, considered as global public goods, so that any individual who needs it can claim the benefit. After analyzing the definition and the characteristics of this concept of global public good, the paper concludes that patented data go into this category of goods. It is so necessary, in the general interest of all, people and countries, to find another way to finance this medical research other than by increasing the price of medicines, the only possibility advocated by the current patent policy.

**Key words:** Access to medicines, patents, global public goods, drugs, TRIPS Agreement

### 1. INTRODUCTION

The TRIPS Agreement equates medicines and other medical goods with ordinary goods. However, drug use is not simply a response to a need like any other, but an essential act of survival that cannot be dispensed with. In fact, a drug is a product needed only when one has health problems. For this, the drug has an important human

aspect, which is not sufficiently highlighted by its current legal status in WTO agreements.<sup>1</sup> Even if, at the Doha Ministerial Conference, WTO members took steps to develop a certain “health exception” in trade with regard to the application of the TRIPS Agreement to drugs, this would have been the first act of awareness of the existence of a peculiarity with regard to trade in pharmaceuticals that are essential in safeguarding health.

The approach adopted in this paper, in the search for a response to the problem of access to medicines in developing countries, is in line with the logic of the internationalization of traditionally internal issues that reflect a certain inability of the Markets and states to solve some global problems, given that with globalization, “states have become too small for big problems and too big for small problems.”<sup>2</sup> Martin et al saw that “in the narrow sense, the global public good is the one for which the market is failing in its production.”<sup>3</sup> These market and state failures are also reflected in the production of accessible and affordable medicines for all those who need them.<sup>4</sup> This implies the idea of shortage, which means, in the end, that a certain danger threatens humanity. There must be other structures to overcome these shortcomings of the market, and of States acting *in solo* in pursuit of their selfish interests.<sup>5</sup>

Thus, in order to address this inability of States to manage health issues individually, the response of this problem must be at an international level because “objectively, the world’s population increasingly forms an involuntary community of risks.”<sup>6</sup> Indeed, the rise of interdependencies makes transnational collective actions necessary, since neither market forces, nor those of isolated nation states, nor the profitability strategies of private firms can meet the challenges of globalization of health problems.<sup>7</sup> It is this fact that motivated the choice of the “global public goods” approach to respond to these challenges. Contrary to the notion of the common heritage of humanity, the concept of the global public good has not yet been embodied in international law, but is gradually becoming an instrument of international policy and contributing to a theoretical basis for policies

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<sup>1</sup> Amelle Guesmi, *Le Médicament À L’omc: Droit Des Brevets Et Enjeux De Santé* (Larcier, Bruxelles, 2011) 481.

<sup>2</sup> Aziz Hasbi, *Théories Des Relations Internationales* (Harmattan, Paris, 2004) 309.

<sup>3</sup> Lisa L. Martin & Beth A. Simmons, *International Institutions: An International Organization Reader* (MIT press, Cambridge, 2001) 305.

<sup>4</sup> Philippe Hugon ‘Les Frontières de L’ordre Concurrentiel et du Marché: Les Biens Publics Mondiaux et Les Patrimoines Communs’ (2003/4) vol. 6 *Géographie, Économie, Société*, 284.

<sup>5</sup> Isabelle Moine-Dupuis ‘Santé et biens communs: un regard de juriste’ (2010) 6 *Développement Durable Et Territoires: Biens Communs Et Propriété*, <http://developpementdurable.revues.org/5303>, accessed on 27 July 2017.

<sup>6</sup> Jürgen Habermas, *The Postnational Constellation: Political Essays* (The MIT Press, Cambridge, 2001) 38.

<sup>7</sup> Philippe Hugon ‘Les Biens Publics Mondiaux: Un Renouveau Théorique Pour Penser L’action Publique A L’échelle Mondiale?’ (2002) vol. 21 no. 3 *Politiques et Management Public: l’Action Publique Face à la Mondialisation, Actes du Douzième Colloque international*, 65.

and to certain interventions by international organizations.

Moreover, while the concept of global public goods is much more common in political science, there is some confusion, especially in the determination of its content. The use of the legal definition of the term "good" makes it possible to see a little more clearly and to remove ambiguities about certain elements that are often considered as global public goods without actually being so. After defining this concept of "global public goods," special attention will be given to the characteristics of such goods. This will allow us to make a link between this concept and the goods protected by pharmaceutical patents.

## 2. DEFINITION AND CHARACTERISTICS OF GLOBAL PUBLIC GOODS

Generally, "goods" are all those things, material or immaterial, usable or having a use value. They can range in size from planetary to local, regional or national.<sup>8</sup> A distinction must be drawn between these assets and those other essential dimensions relating to them, such as the rights to access those assets, the institutions that take them over, and the private or public services that produce, distribute or protect them.<sup>9</sup> In this work, even if these elements (human rights, institutions or services) play an important role or raise crucial issues in the problem under study, they are not "goods" in the sense of this paper and do not enter in consideration in this approach. What does the concept of "global public good" mean then?

In order to understand the concept of the global public good, one must first know what a public good is. Kaul et al define the public good as one that is freely accessible to all and cannot be reserved for any person, as opposed to private good, which implies the possibility of exclusive appropriation.<sup>10</sup> Strictly speaking, a public good is a good provided by the public authority, a good that the latter considers to be compulsorily financed and must be accessible to all without any exclusion or discrimination. Its public nature may result from its intrinsic nature or be

the result of a political choice that is always likely to evolve or change.<sup>11</sup> There is a difference between public goods and collective or common goods. All collective goods are not necessarily public goods: a building managed by a private foundation is a collective building belonging solely to the members of the foundation. Similarly, the common spaces of a residence for the elderly constitute common property, but only for the persons housed at that residence. External persons cannot claim access to or use of these places. To confuse public goods with collective goods thus amounts to ignoring the political reasons that induce the public authorities to produce or finance them. While the production of collective goods can be analyzed using an individualistic approach, the production of public goods is a political choice, and an organizational approach of a State or a Community.<sup>12</sup> Thus, the difference between Collective goods and Public goods is reflected in their mode of production, financing or management: public goods are the prerogative of a public institution, whereas collective goods may be the result of collective or associative initiatives, even private in certain circumstances.<sup>13</sup>

Thus, public goods are in principle related to a legal person governed by public law (such as State, Community or any other public entity) which finances and produces them, by itself or by the private operators that it has delegated. This public entity is free to define what its general interest is, in order to motivate public funding, in derogation from the principles of competition.<sup>14</sup> However, goods are public not because they are produced by a public entity, but because of their positive externalities (beneficial effects) on society as a whole, in the short, medium and long term; for the benefit of present and future generations.<sup>15</sup> A public good is one which, placed in the public domain, is available to all and to which accessibility is possible for the majority, if not for all. Nowadays, the public domain remains limited to or within national borders despite transnational interdependencies.<sup>16</sup> Yet, for some of them, the benefits associated with them, as well as the misdeeds of their

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<sup>8</sup> Isabelle Grunberg & Inge Kaul, *Biens Publics Mondiaux: Coopération Internationale Au 21ème Siècle*, (Economica, Paris, 2002) 35.

<sup>9</sup> Ibid.

<sup>10</sup> Inge Kaul, Pedro Conceição, Katell Le Goulven & Ronald Mendoza, *Providing Global Public Goods: Managing Globalization*, (Oxford University Press, 2003) 302.

<sup>11</sup> Alaine Beitone, 'Biens Publics, Biens Collectifs : Pour Tenter D'en Finir Avec Une Confusion De Vocabulaire', (2014) *Revue du MAUSS Permanente*, <http://www.journaldumauss.net/?Biens-publics-biens-collectifs>, accessed on 7 August 2017.

<sup>12</sup> Ibid.

<sup>13</sup> Olivier Godard, 'La pensée économique face à la question de l'environnement', (2004) no. 25 *Cahiers du Laboratoire d'Économétrie de l'École Polytechnique de Lausanne*, <https://hal.archives-ouvertes.fr/hal-00242937/document>, accessed on 11 August 2017.

<sup>14</sup> Phillippe Hugon, *Les Frontières de L'ordre Concurrentiel et du Marché* (n 5) 268.

<sup>15</sup> Beatrice Quenault, 'Dilemme Westphalien Et Gouvernance Internationale Des Biens Publics Mondiaux: Le Cas De La Protection Du Climat', (2013) vol. 162 *Mondes en Développement* 15.

<sup>16</sup> Phillippe Hugon, *Les Frontières de L'ordre Concurrentiel et du Marché* (n 5) 268.

lack, insufficiency or mismanagement, go beyond the borders of nation-states.

Moreover, the beneficiaries of these public goods do not always correspond to the national constituencies. Thus, there is a discrepancy between the open and universal character of certain public goods and the closed or national nature of the way public policies are formulated for their production or management.<sup>17</sup> The concept of the “global public good” can then be mobilized to transpose internationally the concept of public good (national or internal), elaborated and formalized by Samuelson.<sup>18</sup> Indeed, for Smouts, global public goods “belong to the whole humanity and must be considered as elements for which everyone is responsible, for the survival of all.”<sup>19</sup> The World Bank adopted a political and mobilizing definition, defining global public goods as “goods or resources with positive consequences transcending national borders, with an interest in development and poverty reduction and cannot be implemented without concerted action by the international community.”<sup>20</sup> Even if they have different purposes, all these definitions are relevant and derive certain characteristics that must be assumed by each asset to be described as global public good.

### 3. CHARACTERISTICS OF GLOBAL PUBLIC GOODS AND THEIR APPLICABILITY TO PATENTED INVENTION

To be qualified as a global public good, an asset must satisfy, not only the classical or general characteristics of public goods, but also the specific characteristics to those public goods which are needed for use at an international or world level. It must benefit all countries and all social groups inside and outside their countries, both for present and future generations.<sup>21</sup>

#### A. THE CLASSICAL OR GENERAL CHARACTERISTICS OF PUBLIC GOODS

A public good must be non-exclusive and not rival in its use or consumption. These two properties make the public good a specific good that requires special management. Indeed, non-rivalry and non-exclusion do not allow private producers to realize profits on these goods; this is why they cannot be provided in a

satisfactory way by the market. In addition to non-rivalry and non-exclusion, a public good is also characterized by its non-attributability or indivisibility, according to some authors.<sup>22</sup> It is necessary to specify the content of these three characteristics of public goods: non-exclusivity, non-rivalry and non-attributability (or indivisibility).

#### (i) PUBLIC GOOD IS NON-EXCLUSIVE

The first characteristic of a public good, its non-exclusivity, implies that it is impossible, or technically costly, to prohibit access or use of this good to those who wish to use it. Once produced, this good is available to all, and it is difficult to prevent anyone from enjoying it. Such a good cannot be reserved only for certain users, even those who would like to pay the price charged for access.<sup>23</sup> The impossibility of enjoying these goods in an exclusive way to the detriment of others can be guaranteed by the nature of the good itself, or by a set of techniques or rules. In these latter cases, ownership of exclusion or non-exclusion of a good can evolve with technical progress.<sup>24</sup> Indeed, as a result of the mechanisms allowing the introduction of access control through a tariff or a toll, it may be possible, although often expensive, to exclude certain persons from access to the good that was supposed to be non-exclusive. Examples of goods deemed to be public but subject to exclusion by tolls are many: the toll highway, information via encrypted television, water in distribution networks, air conditioning, etc. Those who cannot pay the price charged for the use of these goods are in fact excluded, which is the same in the case of goods or inventions protected by patents on medicinal products.

Justification of the monopoly and the exclusivity conferred by patents on inventions are based on the characteristics of such intellectual property, in particular, that it is not possible to prohibit third parties from using the invention once disclosed if there is not some form of protection. Without patents and other intellectual property titles, it would not be possible to prevent someone from unfairly deriving benefits by enjoying products that they had no contribution to developing

<sup>17</sup> Ibid. 272.

<sup>18</sup> Paul Samuelson, ‘The Pure Theory of Public Expenditure’ (1954) vol. 36 no. 4 *The Review of Economics And Statistics*, 387-389.

<sup>19</sup> M. C. Smouts, ‘Du Patrimoine Commun De L’humanité Aux Biens Publics Globaux’, in Marie-Christine Cormier-Salem, et al. (eds.), *Patrimoines Naturels Au Sud: Territoires, Identités Et Stratégies Locales*, (IRD editions, Montpellier, 2005) 58.

<sup>20</sup> World Bank, ‘Effective use of development finance for international public goods’, in *Global Development Finance*, (Washington 2001) 112.

<sup>21</sup> Daniel Companion ‘La Biodiversité, Entre Appropriation Privée, Revendications de Souveraineté et Coopération Internationale’

(2008) vol. 8 *Développement Durable et Territoires : Biens Communs et Propriété*, <http://developpementdurable.revues.org/5253>, accessed on 20 August 2017.

<sup>22</sup> Todd Sandler, *Global Collective Action*, (Cambridge University Press, Cambridge 2004) 212.

<sup>23</sup> Marie-France Jarret & François-Régis Mahieu, *Théories Économiques de l’interaction Sociale*, (Ellipses, Paris 1998) 31.

<sup>24</sup> Sophie Thoyer, ‘Biens publics mondiaux’ (Global public Goods and Trade, 13-14 May 2002, Montpellier) 4 [http://www.agromontpellier.fr/sustra/publications/policy\\_briefs/policy-brief-GPG-fr.pdf](http://www.agromontpellier.fr/sustra/publications/policy_briefs/policy-brief-GPG-fr.pdf) accessed on 25 September 2017.

these inventions.<sup>25</sup> Prior to patent protection, the formulas of the active ingredients and the production processes of the drugs are the property of the inventor, who keeps them at his discretion. In granting a patent, the State or the society in general expects in return for the inventor to make public "in a clear and complete way" the results of such research so that "any person skilled in the art may be able to use it." The purpose of the patent is to prevent unfair competition from those who have not invested in the long process that has led to the development of these intangible goods. Patented inventions have a cost, and under the current system, this cost is borne by the users of these innovations. But, as for other public goods, its production could also be supported by the community and it is this perspective that is privileged in the context of this article.

Indeed, there are at least two possibilities of financing public goods. For example, State or other communities may decide to build a road, and finance it by introducing a toll system where there is a fee for use; or, by requesting the support of all, whether users or not, through taxes, given that everyone benefits finally. The difference between the two financing channels is that the toll highway becomes exclusive, and thus "less public," especially when the toll price is prohibitive or above the financial capacity of a part of the users. The same applies to patents, which act as a toll: they regulate or limit access to the invention to any person who is not able to pay the royalties, which are in reality the "entry or passage fees" as required by the patentee. The result is that patented goods (formulas and processes of production) that should be accessible to all, as being non-exclusive, are reserved for a few or some people. The current patent system introduces price exclusion or discrimination and transforms an asset, which is public according to its normal characteristics, into a reserved or a "club" good.<sup>26</sup> Thus, the exclusive right conferred by the patent allows innovative products and services to be characterized as a "club good" (a private good in a way). Those pharmaceutical findings, however, must stay accessible and available to all, under the guarantee of the public authority, which is itself constituted by the joined forces of members of the international community. This is in order to keep up this public aspect of the pharmaceutical inventions protected by patents.<sup>27</sup> But,

more than non-exclusion which can be circumvented, it is non-rivalry that is the determinant in the purity of the public good. It is rare to find a good for which there are no possibilities to exclude certain beneficiaries in order to force them to an individualized payment.<sup>28</sup> The non-rivalry of public goods is their defining characteristic.

#### (ii) PUBLIC GOODS ARE NOT RIVALROUS IN THEIR USE

In addition to being non-exclusive in its use, a public good must also have the characteristic of being non-rivalrous in its consumption. This characteristic implies that the use of the good by one person does not prevent the use of the same item by others. In other words, its use by a person, even repeated, does not affect the substance, quality or utility of the good in question.<sup>29</sup> Thus, the use of a public good by someone does not affect the possibility of use by others, does not alter the quality of the good and does not decrease the quantity available for others. This is distinct from a rival good, which runs out at the first use or belongs to its first user. This non-rivalrous feature is the determining characteristic of a public good because it cannot be derogated from. It is virtually impossible to transform a public good into a rival one, that is to say that this good will be depleted or destroyed at first use, when it was not before. In some cases, the enjoyment of use can only be inconvenienced by the phenomena of congestion.<sup>30</sup> This is the case of traffic congestion on roads, crowded beaches, saturated geostationary orbit, etc.<sup>31</sup> This does not alter the quality or quantity of the public good in question. It is enough that the users take turns, so that everyone finds satisfaction of the good in its totality (for instance, a motorist who arrives after the passage of others finds the road intact and will leave it in the same situation for others after its passage. The same is true for public beaches).

What about patents? A drug exists independently of its trademark or the patent that protects it. It is identifiable by its active ingredient (its formula or its recipe) or the processes of its manufacture. These data protected by pharmaceutical patents fall under the criterion of non-rivalry, and go into the class of public goods. Indeed, it is not a resource that can disappear, but can be usable concomitantly and indefinitely by an unlimited number of users.<sup>32</sup> The use of a formula of a medicinal product by a

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<sup>25</sup> CFS (Conseil Fédéral Suisse) 'Importations Parallèles et Droit des Brevets' (2000) *Rapport du Conseil Fédéral du 8 Mai 2000 en Réponse à la Question de la Commission de l'Économie et des Redevances du Conseil National* 13.

<sup>26</sup> Jurgen Brauer & André Roux, 'La paix comme bien public international' (2003) vol. IV *Annuaire Français des Relations Internationales* 744.

<sup>27</sup> Ibid.

<sup>28</sup> Jérôme Ballet 'Propriété, Biens Publics Mondiaux, Bien(S) Commun(S): une Lecture des Concepts Économiques' (2008) vol.

10 *Développement Durable et Territoires: Biens Communs et Propriété*, <http://developpementdurable.revues.org/5553>, (accessed on 3 September 2017).

<sup>29</sup> Mercedes Novier, *La Propriété Intellectuelle en Droit International Privé Suisse*, (Librairie Droz, Geneva 1996) 21.

<sup>30</sup> Jarret & Mahieu, *Théories Économiques de L'interaction Sociale*, (n 24) 57.

<sup>31</sup> Thoyer (n 25) 4.

<sup>32</sup> Moine-Dupuis, 'Santé et Biens Communs' (n 6) 6-8.

company does not impair the possibility of its subsequent use by others for the production of the same medicinal product. The formula used for the production of the first unit or dose has the ability to be reproduced indefinitely for the unlimited manufacture of the same medicinal product. It can then be used by several companies, simultaneously or successively, all without possibility of congestion.

The non-rivalry of the goods protected by patents, pharmaceutical or not, is a fact, be it at the national or international level. In theory then, once a formula has been developed, its use to produce a drug dosage for treatment of one patient does not deteriorate the ability of others to use it for producing additional doses. The same applies to all scientific discoveries that can be used by a person without diluting the potential benefits that other users may derive from them. It should be remembered, however, that scientific discoveries, while not unrivaled, may be exclusive.<sup>33</sup> As already stated, it is the nature of the patent system which makes the invention exclusive by requiring the authorization of the inventor (often upon payment of a royalty) for it to be used by other parties. This still allows for it to retain its characteristic of non-rivalry, so that several entities can exploit it simultaneously. As a consequence of the non-exclusive and non-rivalrous nature in the consumption of a public good, one cannot individualize the share of the good which is consumed by each user, and thus attribute a price to its use. This is then the third characteristic of public goods: non-attributability or indivisibility.

### (iii) NON-ATTRIBUTABILITY AND INDIVISIBILITY OF PUBLIC GOODS

Non-attributability is the consequence of the indivisibility of the public good, which is not amenable to fragmentation, since it would take away its utility or a part of it.<sup>34</sup> A fragmented road would cease to be useful, just as a fraction of a drug formula cannot be used to produce the drug in question. The principle of indivisibility thus ensures that the public good is accessible, equally and in its entirety, to all users. The consequence of this principle is that the public good becomes logically non-attributable, since it is difficult, if not impossible, to fix its unit price since it cannot be subdivided into customizable parts. Constantin describes public goods as those things whose costs are externalisable, and whose unitary production is inexpensive.<sup>35</sup> In other words, the total cost of the good

is large, but the cost of serving a single consumer is minimal, since there are no additional costs.

Once the first units are produced, the marginal cost of the following units is very small compared to the cost of producing the first unit; that is, the cost of the public good itself in its entirety. Its total cost cannot be borne by a single person, when compared to the enjoyment or utility that will derive from its use. On the other hand, since the public good is non-rivalrous, the rationing of the consumption or the use of such a good is useless.<sup>36</sup> In addition, consumers whose payment capacities are less than the price of the first cost of production are excluded economically from the use of the good, even though they could benefit from it at a lower cost or even free of charge.<sup>37</sup> For example, an additional spectator to a fireworks show organized during a national public celebration does not imply an additional cost by his or her presence. Preventing a person from attending is unjustified because it does not extend the duration of the show nor does it increase or decrease the enjoyment of those who attend. Under this criterion of non-accountability, it is known that research involving pharmaceuticals requires a lot of financial, human, and temporal investments.

In addition to the fact that it is not possible to determine the cost of a part of the formula for the manufacture of a medicinal product, it is also irrational to attribute the costs of developing it to a particular person or group of people. Putting the cost of medical research on patients (as is currently the case) results in practices characterized by selective, speculative or discriminatory research, lack of transfer of technology, etc., in short, the opposite of the official goals sought by the TRIPS Agreement. If it is accepted that patented properties have the characteristics attributed to public goods, are they also global? The following paragraphs describe the characteristics attributable to global public goods and their applicability to goods protected by pharmaceutical patents.

## B. SPECIFIC CHARACTERISTICS TO GLOBAL PUBLIC GOODS

The theoretical basis of global public goods has been progressively established by extending the classical characteristics of public goods (non-rivalry, non-exclusivity and non-attributability) to goods having a global or international dimension.<sup>38</sup> Kindleberger, the

<sup>33</sup> Sandler, *Global Collective Action* (n 23) 6.

<sup>34</sup> Richard Balme, 'L'action Collective Rationnelle Dans le Paradigme d'Olson' (1990) vol. 40 *L'Année sociologique (1940/1948)*, (PUF, Paris) 267.

<sup>35</sup> Philippe Hugon, *Les Biens Publics Mondiaux, un Mythe Légitimateur de l'Action Collective*, (François Constantin, (ed.), Harmattan, 2002) 41.

<sup>36</sup> François Lévêque & Yann Ménière, *Économie de la Propriété Intellectuelle* (La Découverte, 2003) 21.

<sup>37</sup> Ibid.

<sup>38</sup> Bruno Boidin, David Hiez, & Sandrine Rousseau, 'Biens Communs, Biens Publics Mondiaux et Propriété' (2008) *Revue de Développement Durable*, 5, <http://developpementdurable.revues.org/5153>, accessed 15 July 2017.

inventor of this concept, starts from these characteristics and extends them to International Relations, in defining global public goods as "all goods accessible to all States but not necessarily of interest of an individual to produce them."<sup>39</sup> Apart from the fact that these public goods have no border exclusion or rivalry in use between countries, their effects reach several countries and a large part of the world's population. They are also beneficial for both present and future generations.<sup>40</sup> Thus, the notion of the global public good, while retaining the usual characteristics that determine a national or internal public good, proceeds from a double degree of analysis: by their universal and timeless dimension.<sup>41</sup> From a legal point of view, Smouts<sup>42</sup> considers that these characteristics of universality and timelessness derive from article 4 of the 1979 Moon Treaty, which states that

*The exploration and use of Moon are the prerogative of all humanity and are for the good and in the interest of all countries, whatever their degree of economic or scientific development. Due attention shall be paid to the interests of the present and future generations and to the need to promote the raising of standards of living and conditions for economic and social progress and development in accordance with the Charter of the United Nations.*<sup>43</sup>

It is then these two characteristics (universal and timeless) that distinguish global public goods from national public goods.

#### (i) THE UNIVERSAL OR EXTRATERRITORIAL CHARACTER OF GLOBAL PUBLIC GOODS

Like internal or domestic public goods, global public goods are also non-rival, non-exclusive and non-attributable. In addition, they are also global in their character: its externalities affect all or almost countries. According to Kindleberger,<sup>44</sup> the distinction between global public goods and national public goods is the extent of their validity: they are public goods envisaged

on a global scale, "which play upon national spaces and borders."<sup>45</sup> Petrella considers as global "those goods that must be considered essential to the security of living together globally."<sup>46</sup> They are intended for the realization of the common welfare and goals of humanity. Thus, global public goods are those that involve all countries or whose effects cross borders and whose benefits reach a large part of the planet or the world population<sup>47</sup> or "a broad spectrum of countries."<sup>48</sup> Indeed, having no border exclusion or no rivalry of consumption between countries, they have trans-border externalities that can benefit others and high individual costs with uncertain returns, which does not encourage States, individually, to produce them.<sup>49</sup> Given that these benefits do not stop at the borders of States, and benefit everyone, the universality of global public goods highlights the problem of their production, which requires some coordination between States, since the costs of their production must be at the charge of all.<sup>50</sup> Global public goods must thus be analyzed in space, because several countries benefit from them or suffer from their lack or insufficiency.

Thus, global public goods are public in two respects, as opposed to the private goods and the national public goods at the State level.<sup>51</sup> They are not substitutes for locally endangered goods; this type of goods responds to new needs arising from the increasing interaction of societies at the global level.<sup>52</sup> Water, forest, high seas, geostationary orbit, common heritage of humanity, information and, as far as we are concerned, scientific discoveries or knowledge in general, are the main global public goods. For all these goods, their costs of production, management or conservation cannot be borne by a single State, as they result from the sum of the efforts of all the countries in their production, each on its territory according to its capacities and competences. For example, the production of knowledge, such as the development of vaccines against diseases, falls into this category.

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<sup>39</sup> Pierre Jacquet & Olivier Ray, 'Biens Publics Mondiaux et Fiscalité Globale: Quelles Perspectives? Les Systèmes Fiscaux Face à la Mondialisation' (2008) no. 343 *Fiscalité et Revenus, Cahiers Français* (La Documentation Française) 46.

<sup>40</sup> Inge Kaul, Isabelle Grunberg & Marc A. Stern, *Les Biens Publics Mondiaux: la Coopération Internationale au 21ème*, (Economica, 2002) 74.

<sup>41</sup> Ballet, (n 29) 2.

<sup>42</sup> Smouts, 'Du Patrimoine Commun de l'Humanité aux Biens Publics Globaux' (n 20) 66.

<sup>43</sup> Art. 4 of the 1979 Moon Treaty.

<sup>44</sup> Charles P. Kindleberger, 'International public goods without international government' (1986) vol. 76 no. 1 *American Economic Review*, 1-13.

<sup>45</sup> Jacques Dalode, 'Solidarités Internationales et Droits Fondamentaux: Vers les Biens Publics Mondiaux' (presentation to the Vie Nouvelle group of the Boucles de la Marne, February 21, 2006) <http://survie.org/bpem/article/presentations-des-biens-publics>, accessed 11 september 2017.

<sup>46</sup> Riccardo Petrella, *Le Bien Commun: Éloge de la Solidarité* (Bruxelles, Labor Editions, 2<sup>nd</sup> edition, 1996) 93.

<sup>47</sup> Isabelle Grunberg & Inge Kaul, *Les Biens Publics Mondiaux : La Coopération Internationale Au 21ème* (n 41) 35.

<sup>48</sup> Boidin et al. (n 39) 1.

<sup>49</sup> Quenault (n 16) 16.

<sup>50</sup> Isabelle Grunberg & Inge Kaul, *Les Biens Publics Mondiaux : La Coopération Internationale au 21ème* (n 41) 2.

<sup>51</sup> *Id.* 14.

<sup>52</sup> Dalode, (n 46) 2006.

Indeed, the research carried out by a state on the eradication of an epidemic on its territory is beneficial for other countries which must also benefit from it, so that their territories do not constitute places or foci where this epidemic will proliferate and threaten other countries.<sup>53</sup>

In relation to the goods covered by pharmaceutical patents, the universal or extraterritorial character of global public goods manifests itself in two aspects. On one hand, formulas or manufacturing processes, once developed in one country, are not operational only within the territorial boundaries. They are or can also be used in all other countries. Although there may be research for diseases specific to certain regions, there is nothing to prevent their results from being applied to similar or related diseases that are prevalent or that can proliferate in other regions. On the other hand, and in the same vein, the drugs that result from this research can be used to fight against pathologies or epidemics elsewhere, because the epidemics do not respect the borders of the States. Indeed, with a world that is increasingly becoming a “global village,” diseases are circulating as fast as people and goods. In the current context of increasing mobility and cross-flow of goods, and people who go with them, and the resulting economic, social and political interdependence, the threats of diseases and epidemics prevailing in one country affect almost all others.

Nowadays, the local or national dimension is being reduced more and more, including in terms of health. The HIV/AIDS pandemic, SARS, H1N1 and, more recently, the Ebola haemorrhagic virus, are examples that show that “many local health problems can rapidly have an impact on the international dimension and a global echo.”<sup>54</sup> Indeed, globalization of trade (food, plant and animal), as well as migratory and tourist movements have accelerated, in a dramatic way, the microbial and viral unification of the planet.<sup>55</sup> Global public goods share the essential characteristic of generating externalities across national borders and social groups.<sup>56</sup> They present this dimension not only because of their universality, but also because of the timelessness they cover.<sup>57</sup>

## (ii) TIMELESS CHARACTER OF GLOBAL PUBLIC GOODS

For Verschave, global public goods are items that people have a right to produce, preserve, distribute and use, in the conditions of equity and freedom that are the definition and the very mission of the public service, whatever the statutes of the undertakings or bodies which carry out this task.<sup>58</sup> They find their source in a sort of common denominator of rights from which no human should be deprived. Future generations have as many rights to these goods as present generations, making it difficult to balance needs. Indeed, the use of global public goods must meet the needs of present generations, without hindering or damaging those of the next generations.<sup>59</sup>

The absence (or lack) of production, conservation or management of global public goods has implications for human development, now and for our descendants.<sup>60</sup> Global public goods raise the question of intergenerational equity, the management of inheritances, and the consideration of the preferences of all, both for those who use or consume them now, and those who will need them in the near future. The management of these assets must be fair, since today's generation must use these assets while preserving them for the future, while avoiding “sacrificing the future to fuel the present.”<sup>61</sup> In the same way, “the future will not be preserved by sacrificing the present,” except the freely given and equitably distributed sacrifices.<sup>62</sup> Thus, the intergenerational management of global public goods cannot be done on the basis of economic calculations, insofar as this management is carried out in an uncertain and unknown framework and raises the question of representatives. Who has the right to speak or make decisions on behalf of future generations?<sup>63</sup> Moreover, the time needed to replenish most of these global public goods (such as the biosphere, the ozone layer, the global environment, etc.) is immeasurable with the time of generations succession or economic cycles. However, it is these short cycles that usually decide management criteria or the use (if not waste, pillage or ransacking) of these goods.<sup>64</sup> Uncertainty about the future, and questions of irreversibility (reduction or loss of certain elements of this world heritage) lead to precautions and

<sup>53</sup> Hugon, *Les Biens Publics Mondiaux : Un Renouveau Théorique* (n 8) 58.

<sup>54</sup> Observatoire Régionale de la Santé (ORS), ‘Mondialisation, Territorialisation et Santé’, (2011) no. 25 *Les Petits Dossiers de l'Observatoire Régionale de la Santé*, (Nord-Pas-de-Calais), 2.

<sup>55</sup> Jean-Michel Severino & Olivier Charnoz, ‘De l'Ordre Global à la Justice Globale: Vers une Politique Mondiale de Régulation’, (2008) vol. 36 *Temps Réel, Cahier* 30.

<sup>56</sup> Jacquet & Ray (n 40) 47.

<sup>57</sup> Ballet (n 29) 10.

<sup>58</sup> François-Xavier Verschave, *La Santé Mondiale, Entre Racket et Bien Public*, (Eds. Charles Léopold Mayer, Paris, 2004), 336.

<sup>59</sup> Isabelle Grunberg & Inge Kaul, *Les Biens Publics Mondiaux: La Coopération Internationale au 21ème* (n 41) 35.

<sup>60</sup> Kaul et al., *Providing Global Public Goods: Managing Globalization* (n 11) 48.

<sup>61</sup> Smouts, *Du Patrimoine Commun de l'Humanité aux Biens Publics Globaux* (n 20) 69.

<sup>62</sup> Dalode (n 46).

<sup>63</sup> Hugon, *Les Frontières de l'Ordre Concurrentiel et du Marché* (n 5) 279.

<sup>64</sup> *Ibid.*

avoid recourse to the economic calculation, which has already shown its limits.

The question is whether patented properties, derived from medical research, have this intergenerational aspect. For vaccines, the beneficial effects extend well beyond the present generation, since with vaccination the disease is eradicated once for all and potential future victims are protected forever.<sup>65</sup> In addition, the formula for a drug developed today will be used in the manufacture of drugs to treat future generations, as this formula is inexhaustible and indefinitely usable. As a result, investments made now for research cannot be supported only by the present generation or within twenty years, the term of patent protection. For the question of generational equity, the charges related to the research of medicines should be shared between the different generations who benefit all of these medical advances. These costs should not be borne by the patients of a single generation, that of the time of invention, but should be shared over time and involve all generations. The case of poliomyelitis eradication is an illustrative example. The generation that has benefited most is not so much the one that has suffered from this disease, the one that fought and defeated it, but the one that did not know it.

We know that medical research is expensive and, because of the principle of non-accountability, the burden of research should be shared, not only in space, as already stated in the preceding paragraph, but also in time. Thus, if the cost of polio vaccine development were to be paid, the next generation would have to contribute *a posteriori* and, probably in a significant way. If the goods protected by pharmaceutical patents (formulas and processes for manufacturing) have all the characteristics of global public goods, it remains to see in which group, among those identified as global public goods, and they should be classified.

#### 4. THE PLACE OF PATENTED PHARMACEUTICAL DATA IN THE CATEGORY OF GLOBAL PUBLIC GOODS

In his article on social welfare and the allocation of resources for invention, Arrow argues that knowledge, which constitutes all inventive activity, is a good whose production, by its very nature, cannot be optimally supported by the market.<sup>66</sup> Indeed, the fact that this kind of goods is not completely appropriated results in a gap between cost of production, which is often very high, and reproduction cost, which is minimal or close to zero.<sup>67</sup>

Discoveries, medical or otherwise, are goods which, once produced in one or more countries by nature or by persons, become immediately accessible to all and must benefit the entire community. Thus, all innovations, regardless of the field, are global public goods if we refer to the characteristics set out above. But this does not mean that all research must be supported by a public body or financed by it. There are indeed public goods that the community can consider as not indispensable to its population and entrust their management or production to private agents. This is the case for some of the beaches granted to hoteliers, or motorways managed by private companies.

Pharmaceutical innovations contribute to the pursuit of the two global objectives of humanity, which UNDP inadvertently describes as "global public goods resulting from the policies of the nations" (the progress of science as well as that of health), through the drugs that these discoveries can produce. These innovations are thus important for humanity, and their management or production cannot depend on the goodwill of private investors. Before showing how these discoveries contribute to these two UN policies, it is important to clarify the status of medicines, as such, in relation to global public goods.

#### A. MEDICINES ARE NOT GLOBAL PUBLIC GOODS

Medicines derived from pharmaceutical inventions are like units from a resource. These units are rival, since they cannot be subject to concomitant use or joint appropriation. Indeed, the medication consumed by a patient is comparable to a "caught fish that will no longer be there for the next or water used for irrigation of a field of a farmer who can no longer be there for the use of another."<sup>68</sup> Thus, drugs are private goods, by their nature, since there is, in fact, a rivalry of use between patients. In fact, their consumption by one diminishes their utility for others. A pill treatment, taken by a patient to cure his infection, can no longer be used by another patient.<sup>69</sup> Like caught fish or water taken from a lake, drugs from the "resource" cannot be used simultaneously by many, but only the resource itself has this quality. If for the fish the resource is the lake, for the drug, the resource happens to be the formula of its active ingredient. It is in this resource (formula or manufacturing process) that one draws the drugs.

In addition to being rivals, drugs are also exclusive goods, their consumption being primarily reserved for those

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<sup>65</sup> Sandler, *Global Collective Action* (n 23) 120.

<sup>66</sup> Kenneth J. Arrow, 'Economic Welfare and the Allocation of Resources for Invention', *The Rate and Direction of Inventive Activity: Economic and Social Factors*, (Nelson edn, Princeton University Press, New Jersey, 1962), 609-626.

<sup>67</sup> Lévêque & Ménière, (n 37) 27.

<sup>68</sup> Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action*, (Cambridge University Press, Cambridge, 1990), 46.

<sup>69</sup> Bruno Boidin, 'La Santé: Approche par les Biens Publics Mondiaux ou par les Droits Humains' (2005) vol. 33 no. 131 *Mondes en Développement*, 34.



who have the means to pay the price. Those who do not have the financial capacity to pay the price, at least equal to the cost of producing the dose they want, in the case of non-patented or generic drugs, are excluded or discriminated by the price in consumption or use of these drugs. In addition, it is possible to integrate them in the heritage of a person, physical or moral. The patient who pays the price appropriates it definitively, and stocks of drugs are part of the heritage of the laboratory that manufactured them or the pharmacist who has them in goodwill.<sup>70</sup> Rivals and exclusives, they are also attributable or divisible into cures. It can indeed be fixed that one person, because of physical characteristics related to weight or age, can take only one quantity, while another person will take another. This indicates that at least in a theoretical way, one is able to identify the quantity and the cost of a dose that is necessary to treat someone and this portion retains the same therapeutic efficacy as the dose that was used by another, which is contrary to the character indivisibility of the public good.

Medicines are then strictly private goods and cannot have the status of global public goods. If drugs are not public goods, they are certainly "essential goods" that need special treatment, and their trade should not be equated with trade in other ordinary goods.<sup>71</sup> The drug, which is the subject of a private appropriation that can hardly be called into question, nevertheless touches on the essential element for humanity: the life and the survival of the human being.<sup>72</sup>

Although this specificity of the drug is not disputed, it is not expressly recognized in international law. The TRIPS Agreement refers to pharmaceuticals only once in article 39, and again in relation to the protection of undisclosed information. If drugs were to continue to be treated as mere ordinary goods, it would be tantamount to accepting that health is "a commodity" to which only those with sufficient purchasing power have access, which is obviously unacceptable.<sup>73</sup> The idea behind the previous developments is not to take the drug out of the market, otherwise incentives for pharmaceutical research would disappear. However, it is undeniable that the quality of the "essential good" of the drug must take the ascendancy on its quality of merchandise. Once recognized as useful for humanity, it would serve as a basis for a policy of universal access to these essential goods and to find a solution that remedies the current misdeeds of the patent in the field of health. This should allow patented medical inventions to regain their

character as global public goods with the aim of achieving goals doubly important to humanity: safe health and scientific progress.

## **B. PATENTED PHARMACEUTICAL DATA ARE GLOBAL PUBLIC GOODS RELATED TO HEALTH**

Health is often cited as one of the most visible global public goods, alongside knowledge and education. The desire for good health seems to assume the characteristics of non-rivalry (the good health of a person does not deprive others of enjoying it); of non-attributability (it has no price); of universality (it does not limit itself to the borders of the countries and the health situation of some plays positively or negatively on that of others); and of timelessness (all generations aspire to it).<sup>74</sup> The growing use of the term "public good" in the health field has led it to consider it as a global public good.<sup>75</sup>

But, the addition of some elements to the category of global public goods is wrong because it is confusing. Indeed, the term "good" in the expression "global public goods" is not properly defined or apprehended by most internationalists.<sup>76</sup> This confusion results from the fact that some authors start from a rather simple, if not simplistic, correlation. For them, everything that transcends borders is a "global public good" (health, security, financial or climate stabilization), all that is contrary to it is a "global public evil" (such as epidemics, financial crises or atmospheric pollution). These elements, considered by many to be "good", are not only complex but also difficult to grasp because they are not part of the register of material or perceptible elements such as water and air. Hence the temptation to apprehend them by their opposites, which are better identifiable (wars, insecurity, diseases, global warming) and which are in turn described as global public evils opposed to the corresponding public goods.

In the reasoning of these authors, there is a correlation between "global public evils" and insufficient production of "global public goods." Thus, "good" is opposed to "evil," indicating that the good they refer to is clearly a moral or ethical one. There is therefore a confusion between the moral good and the material good. But the "good" we are talking about, when we talk about global public goods, is a material or immaterial thing, susceptible of appropriation, production or destruction. This good, in the legal sense of the term, is part of the materialist conception of the property.

<sup>70</sup> Moine-Dupuis, *Santé et Biens Communs* (n 6) 4-5.

<sup>71</sup> Carlos Correa & Germain Velasquez, *Comment Préserver l'Accès aux Médicaments*, (Harmattan, Paris, 2010) 13.

<sup>72</sup> Ibid. 13.

<sup>73</sup> Verschave, *La Santé Mondiale, Entre Racket et Bien Public* (n 59) 296.

<sup>74</sup> Constantin (dir.), *Les biens publics mondiaux, un mythe légitimateur de l'action collective* (2002) 246.

<sup>75</sup> Boidin, (n 39) 30.

<sup>76</sup> Kaul, *Providing global public goods*, 453.

Therefore, health, peace, security, education, climate or financial stability are not "good" in the legal sense of the term, since they do not lend themselves to the legal techniques of appropriation. These are policies or goals to be achieved. This certainly has a cost, which is often high, but policies or objectives, even if they are global, cannot be taken as goods in the legal sense of the term.

Thus, neither the desire for good health, nor health itself, nor the overall policy of preserving or improving public, national or global health, are goods in the material or legal sense of the term. These are good policies or laudable desires certainly, and their defect is an evil to fight, but this moral good does not transform health into a material good. On the other hand, the goods covered by pharmaceutical patents, which allow the realization of this policy, are global public goods, which can be considered to be related to health. In addition to fulfilling all the characteristics of global public goods as shown above, elements protected by patents (active drug ingredients, their formulas or their manufacture) are global public goods, in the sense that every person theoretically has a right to their free use, made possible by the disclosure initiated by the patent.<sup>77</sup> The patent is indeed a protection offered to the inventor against unfair competition, in return for the disclosure of his invention by making it public. Any disclosed invention must be accessible to all, as advocated by the preamble of the WHO Statutes which states that "the admission of all people to the benefit of knowledge acquired by the medical sciences is essential to achieve the highest degree of health." The eradication of variola through a global vaccination campaign is a good example.<sup>78</sup> The elements covered by the patents are then made public by this protection, the purpose of which is to disclose it to researchers so that they can use it to develop new molecules. Thus, these assets are also part of a comprehensive knowledge database that is used to advance science.

### C. PATENTED PHARMACEUTICAL DATA ARE GLOBAL PUBLIC GOODS RELATED TO SCIENCE

Pasteur said that "science is a heritage of humanity."<sup>79</sup> Mouhoud defines science or knowledge as the fruit of theoretical or practical work for improving the understanding of natural or social facts.<sup>80</sup> It is a cognitive

capacity constituted by a stock resulting from the accumulation of knowledge. The fruit of intellectual processes of understanding and learning is incorporated into common memory and forms a stock of immaterial productive capital.<sup>81</sup> Knowledge or science generally has the three qualities or attributes of public goods: non-rivalry, non-exclusivity and indivisibility.<sup>82</sup>

First, knowledge is a non-rival good since its use or acquisition by a person does not diminish the amount of knowledge that remains available to others. The use of knowledge by one person does not prevent the use of the same knowledge by another, and it can be reused by several, simultaneously or successively, infinitely and without additional cost, its marginal cost being virtually zero.

Secondly, knowledge is also non-exclusive, which implies that everyone can make free use of knowledge in the public domain. Everyone has theoretically access to knowledge and science, although this requires infrastructure that is not necessarily always available to everyone. Cicero already asserted that "knowledge is a common good that no one can claim for himself, but that everyone must communicate to others."<sup>83</sup>

Finally, the non-attributability of knowledge indicates that no one person or state can claim the monopoly or exclusivity of creation of knowledge and science; it is also difficult to divide them into small pieces in order to determine the marginal cost. However, according to traditional theory, the well-being of society is maximized when users have the opportunity to pay for goods and services at their marginal cost. Information goods, whose marginal cost of reproduction is practically null, should be sold almost free of charge.<sup>84</sup> In addition to its properties of non-exclusivity, non-rivalry and indivisibility, the universality and timelessness characteristics of knowledge must be taken into account. On the one hand, scientific knowledge is universal knowledge even if it refers to specific linguistic codes. Thus, several countries benefit from the economic benefits of inventions: the country where the invention was made, the country where it is owned, but also partly from other countries, since multinational companies can deploy their technology on a global scale, especially through marketing.<sup>85</sup> On the other hand, science carries positive

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<sup>77</sup> Moine-Dupuis, *Santé et Biens Communs* (n 6) 10.

<sup>78</sup> Michèle Poulain, 'Urgence sanitaire et droit international', (2002) vol. 8 *Actualité et Droit International : Revue d'Analyse Juridique de l'Actualité Internationale* <http://www.ridi.org/adi/articles/2002/200203pou.htm>, accessed 10 May 2018.

<sup>79</sup> Hugon, *Les Frontières de l'Ordre Concurrentiel et du Marché* (n 5) 266.

<sup>80</sup> El Mouhoub Mouhoud, 'La Connaissance: un Bien Public Mondial?' (2010) 136 *Économie et Management* 31.

<sup>81</sup> Ibid. 31.

<sup>82</sup> Arrow (n 67).

<sup>83</sup> Philippe Quéau, *Le Bien Commun Mondial et les Sociétés de la Connaissance*, (Ecole Polytechnique, Montreal, 2010) 3.

<sup>84</sup> Mouhoud, 'La Connaissance: un Bien Public Mondial?' (n 80) 32.

<sup>85</sup> OCDE, *Manuel Sur les Statistiques des Brevets*, (OECD Publishing, 2009) 141-145.

externalities for present and future generations. The knowledge that we have today, and which leads to social progress, is the result of an accumulation of knowledge acquired by humanity for millennia.<sup>86</sup> In all areas, including health, a large proportion of knowledge comes from free public inputs from education and learning from basic research.<sup>87</sup> It is a combination of progressive advances in research. This cumulative nature of knowledge is linked to the fact that the production of new knowledge is largely based on existing knowledge, the inventors of today relying on knowledge, traditions and inventive richness amassed by the human community as a whole and over time, to go even further. It is then timeless and intergenerational.<sup>88</sup> Thus, the factors of development of the countries and the competition between the companies, the science and the knowledge have all the characteristics of the global public goods.

## 5. CONCLUSION

Although traditional economic theories imply free access at the global level, strategies have been put in place to restrict their diffusion, especially with the entry into force of the TRIPS Agreement, thereby introducing a sort of “merchandising knowledge.”<sup>89</sup> The current patent system is a means of re-privatizing science, which is intrinsically public at the global level. The prior knowledge that is at the base of the production of new knowledge is already in the public domain, how to reward the contribution of new inventors while taking into account the part and the interest of the community, the only real owner of the knowledge that has served as a basis in their research?<sup>90</sup> How to avoid the “holdup” of newcomers on the common good that already existed and was open to all?<sup>91</sup> In the area of health more than elsewhere, it is important to make the distinction between knowledge, which is national, and global public goods, and the resulting products, which are private goods. The patent covers the “informational good” which is part of the knowledge—a global public good—unlike the drug, the material support of this knowledge, which is a private good. Placed upstream in the development of the product, the patent reduces access to this public good belonging to all, thus promoting its grabbing by some, and its exclusion for others.<sup>92</sup> Medical knowledge, including formulas and processes for the manufacture of drugs, must, like all other knowledge, be considered as global public good so that anyone who needs it can claim the benefit. Once this conclusion is accepted, the main recommendation is that, like all national public goods, the production of these global public goods must be

supported by public funding from all countries and all generations because they benefit all. There remains only the big question of how to mobilize this international financing to produce these global public goods and this would be the subject of further research and publications.

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<sup>86</sup> Mouhoud, ‘La Connaissance: un Bien Public Mondial?’ (n 80) 37.

<sup>87</sup> Verschave, *La Santé Mondiale, Entre Racket et Bien Public* (n 59) 327.

<sup>88</sup> Mouhoud, ‘La Connaissance: un Bien Public Mondial?’ (n 80) 32.

<sup>89</sup> Ibid. 31.

<sup>90</sup> Ibid. 32.

<sup>91</sup> Verschave, *La Santé Mondiale, Entre Racket et Bien Public* (n 59) 312.

<sup>92</sup> Poulin, (n 78) 10.

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