

Intellectual Property Rights as a Key Driver in Climate Change Mitigation*

Abstract

One might initially question what role intellectual property rights (IPRs) play with regards to mitigating global climate change. Unquestionably, one of the most important issues of the modern era is the struggle against climate change. In light of the significant effects that climate change is having on everyone on the planet, traditional intellectual property techniques need to be completely rethought in order to mitigate the climate change crisis. IPRs, however, impede access to climate change mitigation technology, particularly in developing nations. As a result, there is a significant discussion about the necessity to change IPR-related legislation in order to remove barriers to global technology transfer. This article examined the complex relationship between IP rights and climate change through technologically based emissions reductions and with reference to pertinent technologies for climate change mitigation. The author opined that, mechanisms for protecting intellectual property rights can be crucial in the ongoing efforts to deal with and mitigate climate change on a national and international level. This would be accomplished by granting intellectual property rights a technology-based reductions in emissions and with reference to sustainable development laws.

Keywords: Intellectual Property Rights, Climate Change, Mitigation, Technology, Patent Rights

1. Introduction

One way to confront, respond to, and attempt to mitigate climate change is through the use of technology. International agreements, national laws, and public policy initiatives all demonstrate this. However, technology is frequently the outcome of the inventiveness and creativity of the commercial sector, and it could be covered by Intellectual Property (IP) rights. These rights give the ability to limit how others exploit your inventions and creative works. As a result, a select few might be in charge of technologies that could help combat climate change for the good of everybody. The connection between technology and climate change is a polycentric issue. At the international, national, local, and private levels, there are numerous discussions on the ethical and governance stances that various actors should adopt, as well as the role that IP plays in fostering innovation. This article discusses a legal issue through legal answers within the context of important broader political, scientific, social, and legal discussion. It focuses on the connections between laws relating to IP rights and the interface with climate change, as well as the various public and private viewpoints they raise.

It has become very divisive how intellectual property rights (IPRs) fit into the fight against climate change. Technological innovation, especially innovation aimed at climate change mitigation, is necessary for effective responses to the global climate change.¹ Many people also contend that patent rights, notably IPRs, are essential for technological innovation. Patent advocates counter that corporations will only invest if they are assured the possibility of a return on their efforts through robust patent protection. They maintain that technological progress necessitates significant private investment in research and development. Accordingly, this viewpoint contends that robust patent protection is necessary for effective climate change mitigation.

* **Kujo, Elias MCDAVE**, Dean, Faculty of Law, Pentecost University, Accra, Ghana. Email: mcdaveap@yahoo.com

¹ KE McDave, 'Intellectual Property Rights as Ethical Response to Global Climate Change Crisis' (2022) Global Journal of Politics and Law Research.

Many others, notably those from developing nations, countered that combating climate change in an ethical and effective way is inherently hampered by robust patent protection. Although crucial, technological innovation is insufficient. Climate Change Technologies (CCTs) must be broadly and economically distributed if we are to combat climate change ethically and successfully.² However, strong patent protection enables patent holders to demand monopolistic rates for their innovations, which may make them inaccessible to many people, particularly those living in Least Developed Countries (LCDs). According to this perspective, robust patent protection is a fundamental impediment to technological transfer and widespread access.³

The use of IP rights in addressing climate change is crucial for both theoretical and practical reasons. In the United Nations Framework Convention on Climate Change (UNFCCC) conferences,⁴ for instance, it has delayed real climate change negotiations. Strong patent protection, according to representatives of industrialized and developing nations respectively, is a fundamental barrier to the equitable distribution of new technologies and is necessary for the technical innovation required to address climate change. The mitigation of climate change has slowed down as a result of this standoff.

Technological innovation is necessary to combat global climate change. It is true that there are a lot of significant steps that can be taken using current technologies, but they will not be enough. Most obviously, more effective clean energy technologies, like solar and wind, are necessary for successful climate mitigation. In areas that are already affected, for instance, climate change is likely to make it easier for diseases like Lyme disease, malaria, dengue fever, and tick-borne encephalitis to spread. Therefore, access to medicines with patent protection will be necessary for minimizing the effects of climate change. Numerous scholars have urged that we should enhance financing for agricultural innovations such crops that are genetically modified to withstand such impacts. In addition, the implications of climate change include an increase in droughts and floods. While there is disagreement about which specific solutions should be developed, it is undeniable that technical innovation of some kind, including both mitigation technologies, will be essential to a successful response to global climate change.

The delegates of industrialized countries remain unwavering in their belief that robust IP protection is necessary for technical innovation to take place in climate change mitigation. As representatives of developing countries are equally adamant in their belief that IPRs are impeding the transfer of Climate Change Technologies (CCTs) from North to South, this viewpoint, according to many policy analysts, is a recurrent source of controversy among parties to the United Nations Framework Convention on Climate Change (UNFCCC).⁵ Developed governments have made the patenting of CCTs a priority due to the belief that robust patent protection is necessary for innovation.

² *ibid.*

³ AA Latif, M Keith, R Okediji, J Reichman, &, P Roffe, 'Overcoming the Impasse on Intellectual Property and Climate Change at the UNFCCC: A Way Forward' (2011) International Centre for Trade and Sustainable Development, Policy Brief No. 11.

⁴ U.N. Framework Convention on Climate Change art. 1(2), opened for signature May 9, 1992, S. TREATY Doc. No. 102-38, 1771 U.N.T.S. 107 [hereinafter UNFCCC]

⁵ Latif et al, 2011.

2. The Climate Change Regime and Intellectual Property Rights

The conflict over intellectual property rights which found expression in the Paris Agreement climate change negotiations has a relatively long history as part of a broader issue of technology development and transfer. In accordance with the 1992 United Nations Framework Convention on Climate Change, industrialized nations are generally required to transfer technology to underdeveloped nations, subject to the latter's adoption of mitigating measures.⁶ The Kyoto Protocol included clauses that were similar.⁷ Since neither instrument required developing countries to make mitigation pledges, the conditional element of these provisions was never put to the test. However, these clauses demonstrated a steadfast justice or equity-based approach, which poor countries have maintained ever since throughout the discussions. The core of this debate is the claim made by poor nations that wealthy nations are responsible for addressing the climate change issue because they historically have been the largest emitters of greenhouse gases (GHG) since the Industrial Revolution. The argument that the industrialized nations own the majority of the technology required to drastically reduce greenhouse gas emissions is related to this. Accordingly, it is only fair that these nations transfer this technology to developing nations if they want to see developing nations reduce their emissions.

The developed world has fiercely fought this narrative, claiming that, to the degree that climate-related technology is protected by intellectual property rights, notably patents, then private corporations, not governments, are primarily in possession of it. Furthermore, industrialized nations contend that intellectual property rights should not be transferred or pooled since they serve as crucial incentives for R&D. The US, for instance, has argued that IPRs should be reinforced in all nations rather than removed or limited as this is crucial for the development of innovations connected to climate change. The industrialized nations have so far been successful in blocking the addition of any explicit IPR-related elements to the international climate framework.

A number of developing nations pushed for the inclusion of a particular reference to IPRs in the Paris Agreement negotiations. Among their recommendations was the creation of an international system on IPRs to make it easier for poor nations to implement clean technologies. However, industrialized nations fiercely opposed these plans, and IPRs are not included in the agreement's final text regarding the transfer of technology development.⁸ Accordingly, the agreement papers address the ongoing dispute between developed countries, which view intellectual property rights as not standing in the way of the development and transfer of low-carbon technologies, and developing nations, which tend to see the IP regime as a manifestation of the developed world's technological hegemony and the refusal to discuss IPR issues as proof that developed nations are not genuinely interested in sharing technology.⁹

⁶ Article 4.7 of the United Nations Framework Convention on Climate Change 1992.

⁷ Kyoto Protocol to the United Nations Framework Convention on Climate Change 1997, opened for signature 16 March 1998, 2303 U.N.T.S

⁸ Article 10 of the Paris agreement of the Paris Agreement to the United Nations Framework Convention on Climate Change (adopted 22 April 2016, entered into force 4 November 2016) http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf (Accessed 12 July 2022).

⁹ D Klein, M P Carazo, M Doelle, J Bulmer & A Higham, *The Paris agreement on climate change, analysis and commentary*, (Oxford: Oxford University Press (eds). 2017).

3. Intellectual Property Rights: A Challenge or A Tool for Combating Climate Change

Modern intellectual property law has historically relied on the moral requirement or necessity of compensating people who produce.¹⁰ The justification for intellectual property rights is that they promote investment and innovation, which benefit society. On the other hand, without intellectual property rights, society suffers because inventors and producers are not properly motivated to produce.

The idea that IPRs could play a significant role in assisting the world in preventing catastrophic climate change is raised by this article. However, there is still another chance. We might be prevented from innovating to protect ourselves from the impending storms by extractive IPRs.¹¹ This mystery has been explained in a variety of ways. The intellectual property system, according to some writers, will not help with climate change mitigation since "it will do little to stimulate the large science that is needed, notably in the energy sector, to avoid the worst climate change scenarios."¹² Others claim that the intellectual property system is ineffective for promoting climate change mitigation because, it only serves to widen the North-South divide by impeding rather than promoting the transfer of technology to developing nations.¹³ Both accusations, at their core, accuse intellectual property law in general of failing to fulfill its primary purpose.

The article specifically questions whether intellectual property rights may be preventing innovation in the field of climate change mitigation today by favoring more lucrative technologies in the short term and assuming that future generations will be sufficiently motivated to innovate in less certain, less lucrative climate change technology when the urgency of the situation becomes more obvious.

Understanding the nature of intellectual property rights and their intended use is necessary before addressing these challenges. If the concerns of climate change policy-makers are to be effectively addressed, a clear grasp of the scope of protected subject matter and the justifications for giving them legal status through private property rights is necessary. As has frequently been done in the past, placing the blame on intellectual property rights is far too simple and predictable.¹⁴ Expressing the belief that the intellectual property system is broken¹⁵ only gets us so far; if a solution is suggested without first identifying the issue, resources may be wasted on an inadequate solution or, in the worst-case scenario, an entirely inappropriate solution. In other words, we must frame the issue before suggesting a solution.

Looking at these problems from a different angle is necessary to properly frame the alleged issue of the alleged breakdown of intellectual property rights. By framing the issue in this way, we wonder if the real issue is not that the intellectual property system is not living up to its main promise, but rather that it might be doing so too well. It may not be new intellectual

¹⁰ A Beckerman-Rodau, 'The problem with intellectual property rights: subject matter expansion' (2011) *Yale J Law Technol* 13:35–89. <http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1064&context=yjolt> (Accessed on 9 July 2022).

¹¹ P Drahos, *six minutes to midnight: can intellectual property save the world?* (Oxford University Press, 2011).

¹² *ibid.*

¹³ RS Richardson & JD Gaisford, *North-South Disputes over the Protection of Intellectual Property*, (Routledge, 2017).

¹⁴ A Mossoff & TM Sichelman, 'Letter to congress from 28 law professors & economists urging caution on the VENUE Act' (August 1). (2016) Available at SSRN: <https://ssrn.com/abstract=2816062> (Accessed on 12 July 2022).

¹⁵ C Greenhalgh & M Rogers, *Innovation, Intellectual Property, and Economic Growth*. (Princeton University Press, 2010).

property laws that we need, but rather a lens for assessing and reforming existing laws, insofar as the intellectual property system encourages innovation in the "most immediately lucrative and easily commercialized fields"¹⁶ for wealth-related conditions like diabetes, obesity, and impotence rather than in more long-term solutions to problems not yet fully appreciated, conceptualized, or valued. The time component in regard to the current intellectual property legal framework is the main focus of this article; if the urgency of climate change mitigation is not taken into consideration, this needs to change. The need for rapid adoption and dissemination of low-carbon technologies makes the importance of time in already-existing institutions and laws important.

4. Applying Intellectual Property Rights to Climate Change Mitigation

4.1. The Structure of Intellectual Property Rights and How It Operates

Understanding what is included and excluded from intellectual property rights is a necessary first step in comprehending the connections between mitigating climate change and intellectual property rights. According to a literal view, intellectual property is understood to be mental inventions that are legally protected by the granting of private property rights, which grant the rights holder some "freedom over their creations."¹⁷ In other words, what we refer to as "talent" is frequently propertized by intellectual property.¹⁸ Such condensed definitions highlight important aspects of intellectual property, but they unintentionally encourage the erroneous assumption that all intangibles with value derived from their contribution to human culture, information, or entertainment are included in the category of intellectual property.

Formal definitions make it obvious that intellectual property does not protect all forms of expression or invention that might be profitable.¹⁹ But only by ensuring that the categories for the protected subject matter be adhered to.²⁰ The TRIPS Agreement appears to be more prescriptive, defining "intellectual property"²¹ as "all categories of intellectual property that are the subject of sections 1 through 7 of Part II" of that agreement, in contrast to the WIPO Convention's²² use of inclusive language that clearly leaves room for future expansion. Prescriptiveness, however, has not held up in reality, with topics that are not clearly included in Article 1(2)²³ being considered to be within its purview. Furthermore, it is getting harder and harder to make the case that new subject matter falling under the broad definition of intellectual property is not "connected to trade" given the current social and economic milieu.²⁴

These definitions make it obvious that patents are just one type of intellectual property right among many others, yet they are frequently singled out when discussing how the intellectual property system fails to address climate change mitigation. Innovations like a method for operating a wind turbine generator during an abnormal power grid event, a concentrated solar power light tube illuminating apparatus, and a gravity-powered electricity generator, each of which is currently the subject of patent protection, are undoubtedly pertinent to the overall

¹⁶ R Collier, 'Drug patents: innovation v accessibility' (2013) *Can Med Assoc J* 185(9): R383–E386.

¹⁷ R Karky, *Intellectual property rights and foreign direct investment* (Springer, 2016 pp 209–223).

¹⁸ J Hughes, 'The Philosophy of Intellectual Property,'. (1988) *Georgetown Law Rev* 77:287–291.

¹⁹ H A Forrest, *Protection of Geographic Names in International Law and Domain Name System*, 2nd edn. (United Kingdom, Wolters Kluwer, 2017).

²⁰ P Drahos, 2011.

²¹ The TRIPS agreement. https://www.wto.org/english/tratop_e/trips_e/ta_docs_e/1_tripsandconventions_e.pdf. (Accessed 16 July 2022).

²² Convention Establishing the World Intellectual Property Organization (14 July 1967, entered into force 26 April 1970), 828 U.N.T.S. 3.

²³ *ibid* at 5.

²⁴ D Gervais, *The TRIPS Agreement: Drafting History and Analysis* (2012) 4th edn. Sweet & Maxwell.

efforts to mitigate climate change. However, the emergence of suites of rights surrounding each innovation is a by-product of intellectual property rights' incorporation into the trade agenda and subsequently commercialization. Modern intellectual property laws and the economy are working together to make it economically more feasible to invest in organized, large-scale internal research and development and create a portfolio of rights for each of the results of that research and development.²⁵ There are several trademarks, designs, and copyright works that belong to each patent, including manuals, instructions, reports, drawings, sketches, films, databases, pictures, and brand names.

When thinking about how IPRs might help with climate change mitigation, it is important to keep in mind the broad definition of intellectual property. Intellectual property is not a homogeneous concept in the context of preventing climate change or in any other setting, and different categories of subject matter may be protected for a variety of reasons. Complicating matters even further are the numerous intellectual property rights' varying scope and lengths of protection, as well as the rising prevalence of protecting a single idea through a diverse portfolio of IP rights.

Intellectual property is also "not a static conception," but rather "is in a perpetual state of change and revision."²⁶ The subject matter categories considered to belong under the idea of intellectual property are clearly trending in the direction of expansion rather than contraction in this evolutionary process. Although this growth has generally been consistent with the various characteristics of intangibility, origin in the human mind, and non-perishability attributed over time to intellectual property subject matter,²⁷ the likely driving force behind this growth is not conceptual consistency, but rather the potential for commercialization recouping the investment of resources in innovating. The promised incentivized benefit of the granting of a temporary monopoly in the form of private property rights is found here. This is obviously clearly reflected in the name of the most recent and comprehensive international treaty on intellectual property rights, a fact that may be overlooked when its full name, Trade-Related Aspects of Intellectual Property Rights Agreement, is abbreviated to "TRIPS," which is shorter and more commonly used. It is impossible to compile a comprehensive list of all of the numerous intersections between intellectual property rights and climate change mitigation due to the reliance on subject matter categories, the fluidity of those categories, and the speed of current human growth. However, the relationship between intellectual property rights and mitigating climate change is obvious, and the concept's dynamic ensures that relationship well into the future.

4.2. How Does Protection of Intellectual Property Relate to Climate Change Mitigation

It is obviously nothing new to question the necessity and logic of intellectual property protection. Laws governing intellectual property have withstood numerous assaults. The holy position given to economic growth has helped to ward off these threats in recent years. Intellectual property rights acquire some of that revered status by connecting their recognition and enforcement to economic expansion. With their significant fiscal responsibilities, governments find it challenging to ignore alluring claims like "increased intellectual property protection boosts multilateral or bilateral trade and investment"²⁸ which claim that "intellectual

²⁵ G Dutfield & U Suthersanen, 'Global intellectual property law' (2008) Edward Elgar, Cheltenham/Northampton.

²⁶ *ibid.*

²⁷ A Beckerman-Rodau, 2011.

²⁸ R Karky, 2016.

property fuels economic development and drives growth." They are even more difficult to resist when couched in patriotic words.

However, the idea of economic growth has come under intense scrutiny in recent years as to whether it is compatible with tackling challenges to the environment on a global scale, such as climate change. In response to these difficulties, the WTO Marrakesh Agreement²⁹ added a reference to "sustainable development" in its list of WTO goals in the preamble. Additionally, the WTO's jurisprudence has referred to this preamble language when interpreting WTO agreements' clauses pertaining to conflicts between environmental and trade objectives.³⁰ But generally speaking, this WTO agreement modification has not changed the organization's overarching philosophy of putting a constant emphasis on trade and economic development. More than a half-dozen successful challenges have been brought against nations implementing renewable energy programs as a result of the WTO and its members' failure to reform the organization's existing rules on subsidies and take any action to reduce the massive fossil fuel subsidies that are still in place.³¹

Huge generalizations that associate intellectual property with economic development imply a specific justification and intended function for intellectual property. To give effect to interpretation doctrines that call for construing terms and provisions so as to give effect to the intentions of their drafters, at both the domestic³² and international³³ levels, precise identification of this role is required. This is not merely philosophical or retrospective navel-gazing. Intellectual property law has a long history, which is becoming more coherent and recognized as the value of intellectual property rights rises.³⁴

However, given the ambiguity of the word "intellectual property" discussed previously, caution is urged when attempting to identify a single, overarching philosophy of intellectual property. There was a time before the TRIPS Agreement included all intellectual creations under the general phrase "intellectual property," but that time has passed. Industrial and intellectual property were once separated and treated differently when the international legal framework for intellectual property was created. Intellectual property captured artistic inventions, whereas industrial property captured intellectual creations driven by commerce. Patents, trademarks, and unfair competition were thus covered by the Paris Convention for the Protection of Industrial Property³⁵, but the Berne Convention for the Protection of Literary and Artistic Works³⁶ concentrated on works that might be protected by copyright. The World Trade Organization's inclusion of all of these inventions under the umbrella term "intellectual property" in the TRIPS Agreement obscures the variations in the motivations and inducements for their production. One category of subject matter corresponds better than another with some of the historical foundations for intellectual property.³⁷

²⁹WTO Marrakesh Agreement. https://www.wto.org/english/docs_e/legal_e/04-wto_e.htm. (Last Visited 20 July 2022).

³⁰ United States Import Prohibition of Certain Sharp and Sharp Products (WT/DS 58/AB/R) 22 October 2001.

³¹ HB Asmelash, 'Energy subsidies in WTO dispute settlement: why only renewable energy subsidies are challenged' (2015) *J Int Econ Law*.

³² DC Pearce & RS Geddes, *Statutory interpretation in Australia* (LexisNexis, 8th edn. 2014).

³³ J G Merrills, 'Two approaches to treaty interpretation' (1969) *Aust Int Law J* 4:55–82.

³⁴ R Karky, 2016.

³⁵ Paris Convention for the Protection of Industrial Property (20 March 1883, last revised 14 Jul. 1967 and as amended 28 Sep. 1979), 828 U.N.T.S. 305

³⁶ Berne Convention for the Protection of Literary and Artistic Works (9 September 1886), 828 U. N.T.S. 221

³⁷ G Dutfield & U Suthersanen, 2008.

To get past such merely utilitarian, market-based realities and steer intellectual property law to fulfill its purpose and role in mitigating climate change, one must embrace a radically different worldview. The IPR system itself is in danger due to the possibility of a catastrophic climate change. If the incentive structures involve securing knowledge that the climate change imperative demands be quickly disseminated, a system based on individual compensation for labor as an incentive for invention becomes problematic.

Furthermore, a thorough examination is necessary to determine whether the different forms of intellectual property described above make presumptions about the continued value of private property rights into the medium and long term, which are called into question in a world that faces the threat of climate change. Furthermore, it is crucial to address the issue of whether current intellectual property laws, such as the length of patent protection, favor the interests of the current generation over those of future generations. Regarding the first concern, the possibility for catastrophic climate change may render some patents' subjects worthless in the long run. Regarding the second argument, too long patent protection works fine with incentives based on business as usual and economic development in terms of current energy systems, but when business as usual incentive structures are challenged by catastrophic climate change, they must be rethought. To change the incentive structure in this way, a variety of policy measures can be used, such as tax breaks and subsidies.

5. Conclusion

Global climate change is a time-sensitive issue. Solutions that could work best in a perfect environment, such as the deconstruction of the international framework of IPRs, are not always sufficient for issues that call for quick response. Of course, it is impossible to predict with perfect confidence which techniques will be workable in the near future; for instance, it is possible that some unanticipated event in the coming few years would result in the complete eradication of IPRs. Although we cannot predict the future with absolute accuracy, we may make more or less logical assumptions about what is and is not likely to happen. Given the current state of our knowledge, we have excellent reasons to think that we can start putting the strategy into practice soon; we should be realistic in terms of politics, economics and law so that we can at least start putting the strategy into practice.

The previous two decades have seen a lackluster response to the focus on the international transfer of clean technologies to underdeveloped countries. Climate change and technological advancement will render outdated current intellectual property rules and discussions about access to technology.³⁸

IPRs must be changed or eliminated in order to hasten the abatement of GHG emissions, according to the principles of intergenerational justice. Building trust between developed and developing nations is necessary for achieving this goal. We will not be able to advance toward a comprehension of shared and proportional responsibility for technology development transfer, of which IPRs represent an important part without first establishing such confidence. Industrialized nations will need to establish trust by taking the lead in quickly lowering GHG emissions. Wealthy nations will also need to contribute enough to the Green Climate Fund and other international organizations necessary for technology transfer in order to establish trust. In order to ensure that the IPR system serves as a positive incentive for the development and diffusion of low carbon technology rather than a barrier, building confidence will also require urgent reform of how incentives work inside the system.

³⁸ J C Bradly & S Tapen, 2011.

Future generations could suffer devastating effects if trust is not established and sufficient mitigating measures are not taken. In terms of IPRs, this would mean that any material that could be protected by IPRs could lose its worth or disappear entirely. This is true, for instance, biological stuff, and would be especially relevant in the case of severe climate change mitigation. Beyond this, catastrophic climate change would call into doubt the IPR system's overall relevance. As a result, several components of the current IPR system make assumptions that will not hold true in a future when catastrophic climate change is a real possibility.

In order to provide private monopoly rights intended to encourage innovation and benefit an ever-increasing common pool of ideas, the fundamental justification for the entire IPR system has been the assumption of continuously increased wealth and prosperity. These fundamental presumptions are fundamentally challenged by the prospect of climate change.