

# 1. Introduction

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Technology is one way of addressing, responding to and seeking to manage climate change. This can be seen in international instruments, national legislation and policy activity. Yet technology is often developed as a result of private sector innovation and creativity; and it may be the subject of intellectual property ('IP') rights. These rights confer the power to restrict use by others of the results of this innovation and creativity. As a result, technology which could assist in addressing climate change, for the benefit of all, could be under the control of a few.

The relationship between climate change and technology is a poly-centric problem.<sup>1</sup> There are rich debates regarding ethical and governance approaches to be taken by different actors at international, state, local and private levels and regarding the place of IP in encouraging innovation. In the context of significant wider political, scientific and social discussion, this book addresses a legal problem through legal solutions. The approach taken is in some ways wide, in some narrow. It explores the spread of laws relating to the IP and climate change interface, with a focus on the relationship between them and the different public and private perspectives they raise.

The relationship between IP and climate change (and indeed the relationship between different areas of law more generally) has been the subject of some important discussion at international level. This book will complement this by exploring approaches which could be taken at national level. The book will focus on the UK or, as appropriate, Scotland and England.<sup>2</sup> The book will develop means for courts and legislators to consider, together, IP and climate change and also other

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<sup>1</sup> See eg Lon L Fuller, 'The Forms and Limits of Adjudication' in Kenneth I Winston (ed) *The Principles of Social Order: Selected Essays of Lon L Fuller. Revised Edition* (Hart 2001) 124, 127, 130–131.

<sup>2</sup> This book will engage with the legislation of the Westminster and Holyrood Parliaments and the jurisdiction of Scotland and of England and Wales (which will, with apologies, be referred to as England). This book will not engage with other jurisdictions or legislative bodies within the UK.

laws which will be seen to be relevant. In so doing, the proposals move beyond the barriers – visible and invisible, structural and substantive – between IP law and laws which relate to responding to climate change. The proposals made can have a significant impact on approaches through law to addressing one of society’s key challenges – responding to climate change, by engaging with another – encouraging innovation. Finally, the book engages with another area involving private and public spheres and laws, in the form of investor–state dispute settlements under trade and investment agreements. Such agreements and dispute possibilities could result in any new national approaches being challenged. Accordingly, the book develops more new proposals which could prevent this.

This chapter will firstly explore the legal landscape relating to the IP and climate change intersections with an international focus. This will provide important context and arguments which will inform the book as a whole. This chapter will then present the structure of the rest of the book.

## CONSTRUCTING A PROBLEM: CLIMATE CHANGE, IP AND TECHNOLOGY

### **Climate Change and Its Impacts**

Addressing and working with climate change is a key issue for the 21st century. Debates abound about the extent to which climate change is a new issue brought about or enhanced by human activity or is part of the expanded cycle of nature.<sup>3</sup> In any event, it is clear that climate change is having consequences for society.<sup>4</sup> Notably, greenhouse gas emissions are having an impact on temperatures.<sup>5</sup> This has led to the rising of sea levels

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<sup>3</sup> Met Office, ‘What is climate change?’ <http://www.metoffice.gov.uk/climate-guide/climate-change> accessed 31 December 2018; Navraj Singh Ghaleigh, ‘Science and Climate Change Law – the Role of the IPCC in International Decision-Making’ and Timothy Meyer, ‘Institutions and Expertise: The Role of Science in Climate Law Change Making’ both in Cinnamon P Carlane, Kevin R Gray and Richard G Tarasofsky (eds) *The Oxford Handbook of International Climate Change Law* (Oxford University Press 2016) (Carlane).

<sup>4</sup> Intergovernmental Panel on Climate Change, ‘Global Warming of 1.5° Celcius’ (2018) <https://www.ipcc.ch/sr15/> accessed 31 December 2018.

<sup>5</sup> David Hunter, ‘Climate Science and Policy Responses’ (Hunter) in Joshua D Sarnoff (ed) *Research Handbook on Intellectual Property and Climate Change* (Edward Elgar Publishing 2016) (Sarnoff) 16.

with implications,<sup>6</sup> for example, for the Polar ice cap,<sup>7</sup> low-lying islands in the Pacific,<sup>8</sup> and the west coast of Scotland.<sup>9</sup> There are also concerns about droughts,<sup>10</sup> new diseases<sup>11</sup> and detrimental impact on human health.<sup>12</sup>

## International Climate Change Responses

### Recognition of a problem

Addressing climate change, and relationships with the environment more generally, has been a goal of what is termed the Green movement. Notable late 20th-century developments were the establishment of the Club of Rome think tank in 1972,<sup>13</sup> the Stockholm Declaration of the United Nations Conference on the Human Environment of 1972 ('Stockholm Declaration'),<sup>14</sup> the Vienna Convention for the Protection of

<sup>6</sup> Hunter n5 17–19; UK Department for Environment, Food and Rural Affairs, 'The National Adaptation Programme and Third Strategy for Climate Adaptation Reporting. Making the country resilient to a changing climate' (July 2018) <https://www.gov.uk/government/news/government-publishes-updated-plan-to-tackle-climate-change> accessed 31 December 2018, 1, 79.

<sup>7</sup> WWF, 'Arctic Climate Change' [http://wwf.panda.org/knowledge\\_hub/where\\_we\\_work/arctic/what\\_we\\_do/climate/](http://wwf.panda.org/knowledge_hub/where_we_work/arctic/what_we_do/climate/) accessed 31 December 2018.

<sup>8</sup> WWF, 'Time is running out for low-lying islands in the South Pacific' [http://www.wwfpacific.org/what\\_we\\_do/climatechange/](http://www.wwfpacific.org/what_we_do/climatechange/) accessed 31 December 2018. From the perspective of international policy making, see Espen Ronneberg, 'Small Islands and the Big Issue: Climate Change and the Role of the Alliance of Small Island States' in Carlane n3.

<sup>9</sup> Jim Hansom, F Maxwell, Larissa Naylor and M Piedra, 'Impacts of sea-level rise and storm surges due to climate change in the Firth of Clyde (Scottish Natural Heritage Commissioned Report 891 2017).

<sup>10</sup> Bruce Stokes, Richard Wike and Jill Carle, 'Concern about climate change and its consequences' (Pew Research Centre 5 September 2015) <https://www.climateactproject.org/blog/facts-about-climate-change-and-drought> accessed 1 January 2019.

<sup>11</sup> Jasenka Piljac Zegarac, 'Climate Change: Effects on the Incidence and Distribution of Infectious Diseases (*Infectious Diseases Advisor*, 14 December 2017) <https://www.infectiousdiseaseadvisor.com/emerging-diseases/climate-change-and-infectious-disease/article/713190/> accessed 1 January 2019.

<sup>12</sup> UNFCCC, 'Human health and adaptation: understanding climate impacts on health and opportunities for action. Synthesis paper by the Secretariat' FCCC/SBSTA/2017/2.

<sup>13</sup> See website <https://www.clubofrome.org>. This commissioned Donella H Meadows, Dennis L Meadows, Jorgen Sanders and William W Behrens III, *Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (Universe Books 1974).

<sup>14</sup> See <http://www.un-documents.net/unchedec.htm> accessed 16 May 2019.

the Ozone Layer of 1985,<sup>15</sup> the World Commission on Environment and Development of 1987<sup>16</sup> and the Montreal Protocol on Substances that Deplete the Ozone Layer of 1987.<sup>17</sup> But there are much earlier roots for environmental instruments: consider in England the Forest Charter of 1225, which was a companion to Magna Carta.<sup>18</sup> The Forest Charter sought to create a new relationship between the King and the community regarding activities in and use of the Forest.<sup>19</sup> Reflections on sustainability in the context of forests and economic growth were also seen in the Age of Enlightenment across Europe in the 17th to 19th centuries.<sup>20</sup>

### **The Earth Summit**

Against this backdrop, a key milestone came in 1992. An international consensus was reached at the Earth Summit in Rio de Janeiro in 1992, which was attended by governments, non-governmental organisations, and individuals.<sup>21</sup> The Earth Summit led in particular to the Rio Declaration on Environment and Development ('Rio Declaration'),<sup>22</sup> Agenda 21 (with a focus on sustainable development),<sup>23</sup> the United Nations Framework Convention on Climate Change ('UNFCCC')<sup>24</sup> and the Convention on Biological Diversity ('CBD'),<sup>25</sup> and also to the

<sup>15</sup> UNTS vol 1513 p293.

<sup>16</sup> This led to the Report of the World Commission on Environment and Development: Our Common Future (1987) <http://www.un-documents.net/our-common-future.pdf> accessed 10 October 2017.

<sup>17</sup> UNTS vol 1522 p3.

<sup>18</sup> CHARTA de Foresta Westminster 11 Febr 9 Hen III [1225]; Magna Carta 12 June 1215 Runnymede.

<sup>19</sup> This was not superseded until 1971. For discussion and contemporary relevance see Open Democracy, 'Celebrating the 800th anniversary of the Charter of the Forest' <https://www.opendemocracy.net/neweconomics/celebrating-800th-anniversary-charter-forest/> accessed 1 January 2019. See also Nicholas A Robinson, 'The Nature of Courts' in Christina Voigt and Zen Makuch (eds) *Courts and the Environment* (Edward Elgar Publishing 2018) 9–12.

<sup>20</sup> See summary in Klaus Bosselmann, *The Principle of Sustainability* (2nd ed) (Routledge 2016) (Bosselmann) 15–20.

<sup>21</sup> See UN Earth Summit webpage <http://www.un.org/geninfo/bp/enviro.html> accessed 1 January 2019.

<sup>22</sup> See A/CONF.151/26.

<sup>23</sup> See webpage <http://www.unep.org/Documents.Multilingual/Default.asp?documentid=52> accessed 1 January 2019.

<sup>24</sup> UNTS vol 1771 p107.

<sup>25</sup> UNTS vol 1760 p79.

establishing of the Commission for Sustainable Development.<sup>26</sup> Of particular interest to climate change from a legal perspective is the UNFCCC,<sup>27</sup> an umbrella framework which led to further developments.<sup>28</sup>

Exploring this in more depth, the UNFCCC<sup>29</sup> set the objective of stabilising levels of greenhouse gas emissions, in a time frame which would enable the ecosystem to adapt naturally to climate change to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.<sup>30</sup> The UNFCCC provides that parties should protect the climate system for the benefit of present and future generations on the basis of equity and common, but differentiated, responsibilities and capabilities,<sup>31</sup> placing more of a burden on the developed countries listed in its Annex 1.<sup>32</sup> Annex 1 countries are to reduce their use of specific substances<sup>33</sup> to stated levels,<sup>34</sup> and to engage in capacity building to assist other countries in reducing their own levels of emissions.<sup>35</sup> Parties should take precautionary measures to anticipate, prevent or minimise the causes of climate change and to mitigate its adverse effects.<sup>36</sup> Further, states have the right to and should promote sustainable development, and should integrate steps to protect the climate system against human-induced change in national development programmes.<sup>37</sup>

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<sup>26</sup> See website <https://sustainabledevelopment.un.org/intergovernmental/csd> accessed 1 January 2019.

<sup>27</sup> Debate continues regarding other pathways, at international level see eg Shirley V Scott and Charlotte Ku (eds) *Climate Change and the Security Council* (Edward Elgar Publishing 2018) and Daniel Bodansky, Jutta Brunee and Lavanya Rajamani, *Climate Change and International Law* (Oxford University Press 2017) (Bodansky) 258–283 arguing for more multifaceted and intertwined approaches. See also Hunter n5 in Sarnoff n5 calling for different sectoral approaches to be taken. For a discussion with an economic focus, see Navraj Singh Ghaleigh, ‘Economics and International Climate Change Law’ in Carlane n3.

<sup>28</sup> For an overview of this journey, see Bodansky n27, 96–117.

<sup>29</sup> For overview of the UNFCCC see Bodansky n27, 118–159.

<sup>30</sup> UNFCCC, art 2 (save those covered by the Montreal Protocol, UNFCCC art 4(a)).

<sup>31</sup> UNFCCC, art 3(1).

<sup>32</sup> UNFCCC, arts 3(1) and (2), and 4(1) and (2).

<sup>33</sup> Listed in UNFCCC, Annex A.

<sup>34</sup> Listed in UNFCCC, Annex B.

<sup>35</sup> UNFCCC, art 4(3)–(5).

<sup>36</sup> UNFCCC, art 3(3) – in essence that lack of full scientific knowledge should not prevent action when there is a risk of serious environmental harm.

<sup>37</sup> UNFCCC, art 3(4).

### **Kyoto Protocol**

The UNFCCC's Kyoto Protocol in 1997<sup>38</sup> then took a firmer approach. It set Annex 1 countries standards for reductions of Annex A emissions for the period up to 2012<sup>39</sup> (and this was extended to 2020).<sup>40</sup> Limited progress was made towards the Kyoto targets,<sup>41</sup> and there were also some problems with international consensus in respect of it. Notably, the United States was not a party to the Kyoto Protocol<sup>42</sup> and Canada withdrew from it.<sup>43</sup>

### **Paris Agreement**

A new agreement under the UNFCCC was ultimately<sup>44</sup> reached in Paris in 2015.<sup>45</sup> The UNFCCC website describes the Paris Agreement as '[a]historic agreement to combat climate change and unleash actions and investment towards a low carbon, resilient and sustainable future'.<sup>46</sup> The Paris Agreement 'aims to strengthen the global response to the threat of climate change ... by holding the increase in the global average temperature to well below 2 degrees above pre-industrial levels and to attempt to limit the increase to 1.5 degrees above pre-industrial levels'.<sup>47</sup>

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<sup>38</sup> <https://unfccc.int/resource/docs/convkp/kpeng.html>. For an overview of the Kyoto Protocol see Bodansky n27, 160–182, 193–208.

<sup>39</sup> Kyoto Protocol, art 3.

<sup>40</sup> Doha Amendment 2012, see <https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment> accessed 1 January 2019.

<sup>41</sup> See webpage 'Kyoto Protocol Data' <https://unfccc.int/process/transparency-and-reporting/greenhouse-gas-data/greenhouse-gas-data-unfccc/kyoto-protocol-data> accessed 1 January 2019.

<sup>42</sup> See Frank E Loy, 'The United States Policy on the Kyoto Protocol and Climate Change' (Winter 2001) *Natural Resources and Environment* 152.

<sup>43</sup> UN C.N. 796.2011.TREATIES-1 and UNFCCC Compliance Committee CC/EB/25/2014/2 20 August 2014.

<sup>44</sup> See webpage, 'UNFCCC – 20 Years of Effort and Achievement' <http://unfccc.int/timeline/> accessed 1 January 2019, in particular re UNFCCC Conferences of the Parties from Copenhagen 2009 to Paris 2015.

<sup>45</sup> Entered into force in 2016 after the necessary levels of state ratification. See webpage, 'Paris Agreement – Status of Ratification' <https://unfccc.int/process/the-paris-agreement/status-of-ratification> accessed 1 January 2019.

<sup>46</sup> UNFCCC 13 December 2015, 'Historic Paris Agreement on Climate Change' <http://newsroom.unfccc.int/unfccc-newsroom/finale-cop21/> accessed 1 January 2019.

<sup>47</sup> Paris Agreement Annex to Decision FCCC/CP/2015/L/9/Rev.1 <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf> (Paris Agreement), art2(1)(a) accessed 16 May 2019.

Each country is to prepare five-yearly plans for reductions of relevant greenhouse gas emissions for the period up to 2050.<sup>48</sup> In contrast to the approach at Kyoto, however, targets are not imposed on individual states; rather, states are to undertake ‘ambitious efforts’ in stated areas,<sup>49</sup> with this reflecting the common but differentiated responsibilities approach in the light of national circumstances.<sup>50</sup>

Diversity of views on climate change and international action continued. In particular, after President Trump assumed office, the United States said that it would withdraw from the Paris Agreement.<sup>51</sup> Reflecting the wider political, social and economic context, objections to the Paris Agreement include the fact that delivering reductions in greenhouse gas emissions can have an impact on commercial activity (and its profits and jobs), particularly in oil and gas.<sup>52</sup> This can have consequences for those living and working in oil- and gas-focused communities<sup>53</sup> – particularly relevant for the writer, based in an Aberdeen which lived through the slump in the oil price.<sup>54</sup> Further, there are views that delivering UNFCCC goals could be also done through human activity. For example, there

<sup>48</sup> Paris Agreement, art 4(9).

<sup>49</sup> Paris Agreement, art 3.

<sup>50</sup> Paris Agreement, recital 3, art 2(2), art 4(3)–(4), 4(19). For an overview, see Bodansky n27, 29–30, 209–257.

<sup>51</sup> UN News, ‘UN officially notified of US intention to withdraw from Paris climate pact’ (4 August 2017) <https://news.un.org/en/story/2017/08/562872-un-officially-notified-us-intention-withdraw-paris-climate-pact> accessed 1 January 2019.

<sup>52</sup> Gregory Brew, ‘Will Trump’s Paris Decision Help or Hurt the Energy Sector’ (4 June 2017) <https://oilprice.com/Energy/Energy-General/Will-Trumps-Paris-Agreement-Decision-Help-Or-Hurt-The-Energy-Sector.html> accessed 1 January 2019; Michelle Patron, ‘What a climate deal means for oil markets’ (Reuters 8 December 2015) <http://blogs.reuters.com/great-debate/2015/12/07/what-a-climate-deal-means-for-oil-markets/> accessed 1 January 2019.

<sup>53</sup> See Moore Stephens, ‘Insolvencies of UK oil and gas service companies are up by 55% in a year’ (2016) <https://www.moorestephens.co.uk/news-views/january-2016/insolvencies-of-uk-oil-and-gas-service-companies-a> accessed 1 January 2019.

<sup>54</sup> See also consideration of impact of closing coal, steel and fishing industries in Cape Breton, Nova Scotia, Canada in Richard MacKinnon, ‘The UNESCO Convention for the Safeguarding of Intangible Cultural Heritage and Its Implications for Sustaining Culture in Nova Scotia’ in Michelle L Stefano, Peter Davis and Gerard Corsane (eds) *Safeguarding Intangible Cultural Heritage* (The International Centre for Cultural and Heritage Studies, Boydell Press 2014) 156.

could be more walking and less use of cars<sup>55</sup> and an increase in sustainable practices such as reusing one's carrier bags.<sup>56</sup>

### **The Links Between Technology and Climate Change**

This discussion of wider factors is a reminder that overly focusing on technology can be misguided.<sup>57</sup> Such an approach could encourage the perception that addressing climate change is the responsibility of another.<sup>58</sup> It has also been stressed that technology is unlikely to provide a 'silver bullet' to climate change questions.<sup>59</sup> Indeed, technology will not in itself necessarily lead to a desirable end; an example is Volkswagen's involvement in technologies masking the real level of emissions from diesel cars.<sup>60</sup> But as will now be explored, these points do not remove the place of technology in responding to climate change, nor the need for a more informed approach to be taken to this issue from the IP perspective.

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<sup>55</sup> See eg WWF, 'WWF promotes urgent climate change issue to Walk for Nature participants' (29 October 2007) [https://www.wwf.org.hk/en/news/press\\_release/?1334/WWF-promotes-urgent-climate-change-issue-to-Walk-for-Nature-participants](https://www.wwf.org.hk/en/news/press_release/?1334/WWF-promotes-urgent-climate-change-issue-to-Walk-for-Nature-participants) accessed 1 January 2019.

<sup>56</sup> See eg UK Government Department for Food Environment and Rural Affairs, 'Consultation on the proposal to extend the Single-Use Plastic bag charge to all retailers and to increase the minimum charge to 10p' (2018) <https://consult.defra.gov.uk/environmental-quality/extending-the-single-use-bags-charge/> accessed 1 January 2019.

<sup>57</sup> Alina Averchenkova, Sam Fankhauser and Michael Nachmany (eds) *Trends in Climate Change Legislation* (Edward Elgar Publishing 2017) chs 1–4, 10, exploring the range of factors to be taken into account and different national approaches, and engaging to a limited extent with innovation; Mary E Pettinger (ed) *The Social Construction of Climate Change: Power, Knowledge, Norms, Discourses* (Ashgate 2007).

<sup>58</sup> See also exploration in Al Gore films *An Inconvenient Truth* (2016) and *An Inconvenient Sequel: Truth to Power* (2017).

<sup>59</sup> Mark Stallworthy, 'Legislating Against Climate Change: A UK Perspective on a Sisyphean Challenge' (2009) 72 *Modern Law Review* 412, 420; EASAC, 'Negative emission technologies: What role in meeting Paris Agreement targets' (2018) <https://easac.eu/news/details/climate-change-wont-be-solved-by-removing-excess-co2-from-atmosphere/> accessed 8 January 2019.

<sup>60</sup> Gwyn Topham, Sean Clarke, Cath Levett, Paul Scruton and Matt Fidler, 'The Volkswagen Emissions Scandal Explained' (The Guardian 23 September 2015) <https://www.theguardian.com/business/ng-interactive/2015/sep/23/volkswagen-emissions-scandal-explained-diesel-cars>; Slater and Gordon, 'VW Emissions Action' <https://www.vwemissionsaction.com>, both accessed 1 January 2019.

## A place for technology

Technology is approached here in the sense of equipment and software which can assist in mitigating (reducing),<sup>61</sup> adapting to (reducing the implications of)<sup>62</sup> and measuring climate change. These activities will hereafter be generally referred to as ‘responding to climate change’. The book does not focus on the equally valuable questions of capacity building and the availability of human expertise.<sup>63</sup> Important mitigation examples are technologies which enable electricity, heating and transport to be obtained from renewable energy sources such as offshore wind power,<sup>64</sup> rather than from carbon dioxide-emitting oil and gas.<sup>65</sup> For adaptation, carbon capture technologies store and enable future use of existing emissions.<sup>66</sup> Also relevant would be treatments and vaccines for new diseases as introduced above,<sup>67</sup> and crops<sup>68</sup> which are able to grow in the new drought-afflicted areas suggested above. Finally, technology has a role in measuring climate change and its rate.<sup>69</sup>

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<sup>61</sup> See discussion in Bodansky n27, 12–13.

<sup>62</sup> See discussion in Bodansky n27, 14.

<sup>63</sup> See eg Alex Osterwalder, Yves Pigneur, Greg Bernarda and Alan Smith, *Value Proposition Design* (Wiley 2014).

<sup>64</sup> See eg Offshore Wind Scotland <http://www.offshorewindscotland.org.uk/> accessed 1 January 2019.

<sup>65</sup> In an early reminder of the complexities around responses to climate change, there are differing views on whether renewable energy really does have a direct positive impact on climate change: see eg RSPB, Friends of the Earth, Greenpeace, ‘Dirtier than coal? Why Government plans to subsidise burning trees are bad news for the planet’ (2012) [http://www.rspb.org.uk/Images/biomass\\_report\\_tcm9-326672.pdf](http://www.rspb.org.uk/Images/biomass_report_tcm9-326672.pdf) accessed 8 January 2019.

<sup>66</sup> Carbon Capture Storage Association website <http://www.ccsassociation.org/what-is-ccs/> accessed 2 January 2019. This has been argued to be too much of a short-term diversion and overly focused on carbon-based energy providers, see eg Greenpeace, ‘Carbon capture and storage a costly, risky distraction’ (1 July 2016) <https://www.greenpeace.org/archive-international/en/campaigns/climate-change/Solutions/Reject-false-solutions/Reject-carbon-capture-storage/> accessed 2 January 2019.

<sup>67</sup> See Fuller n1.

<sup>68</sup> Daniel A Sumner and Travis Lybbert, ‘Agricultural Technologies for Climate Change Mitigation and Adaptation in Developing Countries: Policy Options for Innovation and Technology Diffusion’ (International Centre for Trade and Sustainable Development 1 June 2010) <https://www.ictsd.org/themes/climate-and-energy/research/agricultural-technologies-for-climate-change-mitigation-and> accessed 2 January 2019.

<sup>69</sup> OECD, ‘Space Technologies and Climate Change’ <https://www.oecd.org/futures/space-technologies-and-climate-change.pdf>, and CTCN, ‘Climate change

**International recognition of technology: the Earth Summit outputs**

The Stockholm Declaration of 1972 had already stated that technology must be applied to the solution of environmental problems and for the common good of humankind.<sup>70</sup> Building on this at the Earth Summit, the UNFCCC and its outputs engaged with technology. The UNFCCC provides that developed countries are to take all practicable steps to promote, facilitate and finance transfer of or access to environmentally sound technologies and know-how to other states, particularly to developing countries, to enable them to implement their obligations under the UNFCCC.<sup>71</sup> The Rio Declaration principles include that states should cooperate to improve scientific understanding through the exchange of technological knowledge and through the development, adaptation, diffusion and transfer of technologies.<sup>72</sup>

Further, Agenda 21 refers to technology across a variety of areas which are relevant to its focus of sustainable development, including health and farming.<sup>73</sup> Agenda 21 also provides that governments should promote national policies that incentivise local people to use and transfer environmentally sound technologies.<sup>74</sup> These are defined as 'technologies which protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they were substitutes'.<sup>75</sup> Finally, the CBD addresses fair and equitable sharing of benefits arising from uses of genetic resources.<sup>76</sup>

Later action was seen under the UNFCCC. The Kyoto Protocol of 1997 notes technology transfer as an issue to be considered in state

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monitoring' <https://www.ctc-n.org/technologies/climate-change-monitoring> both accessed 8 January 2019.

<sup>70</sup> Stockholm Declaration, principle 18.

<sup>71</sup> UNFCCC, art 4(5).

<sup>72</sup> Rio Declaration, principle 9.

<sup>73</sup> Agenda 21, paras 6.13 (health), 6.41 and 6.43 (pollution), 7.39 (infrastructure), 8.53 (information technology), 11.5 (forests), 14.89 (farming), ch 16 (environmentally sound management of biotechnology), 17.6 (marine areas), ch 31 (contribution of scientific and technological community), 40.14 (information for decision making).

<sup>74</sup> Agenda 21, para 13.6(b).

<sup>75</sup> Agenda 21, para 34.1.

<sup>76</sup> CBD, art 2 – developed in more detail in its 2010 Protocol focused on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Nagoya Protocol) <http://www.cbd.int/abs/> accessed 16 May 2019.

actions to minimise the impact of climate change.<sup>77</sup> After Kyoto, in 2001 the UNFCCC Expert Group on Technology Transfer was set up<sup>78</sup> to build on and complement the ongoing work of the permanent Subsidiary Body for Scientific and Technological Advice.<sup>79</sup> The 2007 Bali Action Plan<sup>80</sup> includes an enhanced mitigation programme to be supported by technology<sup>81</sup> and by the provision of financial resources and investment.<sup>82</sup> The Copenhagen Accord of 2009<sup>83</sup> set out the roots of a UNFCCC Technology Mechanism.<sup>84</sup> This was further developed in UNFCCC meetings at, in particular, Cancun in 2010<sup>85</sup> and Durban in 2011.<sup>86</sup> Then came the Paris Agreement.<sup>87</sup>

This provides that the parties ‘share a long term vision’ on the importance of technology development and transfer; that ‘accelerating, encouraging and enabling innovation is critical for an effective, long-term

<sup>77</sup> Kyoto Protocol, art 3(14).

<sup>78</sup> See UNFCCC ‘Technology Transfer Framework’ <http://unfccc.int/ttclear/tec/tech-transfer-framework.html> accessed 2 January 2019. Also discussed in Matthew Burns, ‘A Sustainable Framework for International Green Technology Transfer’ (2012) 23 *Colorado Journal of Environmental Law & Policy* 405 and Elisa Morgera and Kati Kulovesi, ‘Public-private Partnerships for Wider and Equitable Access to Climate Technologies’ in Abbe E L Brown (ed) *Environmental Technologies, Intellectual Property and Climate Change* (Edward Elgar Publishing 2013) (Brown) 130.

<sup>79</sup> See webpage Subsidiary Body for Scientific and Technological Advice (SBSTA) <https://unfccc.int/process/bodies/subsidiary-bodies/sbsta> accessed 2 January 2019.

<sup>80</sup> UNFCCC, ‘Bali Climate Change Conference – December 2007’ <https://unfccc.int/process-and-meetings/conferences/past-conferences/bali-climate-change-conference-december-2007/bali-climate-change-conference-december-200> accessed 2 January 2019. See Report of Conference FCCC/CP/2007/6/Add.1\* (Bali), and Jerome De Meeus and Alain Strowel, ‘Climate Change and the Debate around Green Technology Transfer and Patent Rules: History, Prospect and Unresolved Issues’ (2012) 3 *WIPO Journal*, 2, 179, 185–186.

<sup>81</sup> Bali, para 1(b)(2).

<sup>82</sup> Bali, para 1(e).

<sup>83</sup> UNFCCC, FCCC/CP/2009/11/Add.1 30 March 2010 (Copenhagen).

<sup>84</sup> Copenhagen, art 11.

<sup>85</sup> UN Climate Change, ‘Cancun Agreements’ <https://unfccc.int/process/conferences/past-conferences/cancun-climate-change-conference-november-2010/statements-and-resources/Agreements> accessed 2 January 2019.

<sup>86</sup> UN Climate Change, ‘Essential background – Durban outcomes’ <https://unfccc.int/process/conferences/the-big-picture/milestones/outcomes-of-the-durban-conference> accessed 2 January 2019.

<sup>87</sup> [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf) accessed 16 May 2019.

global response to climate change’;<sup>88</sup> and that there will be a technology framework, to support the Technology Mechanism.<sup>89</sup> The ongoing role of technology can be seen from reports on the Technology Mechanism made to UNFCCC meetings and in references to technology in documents regarding the implementation of the Paris Agreement.<sup>90</sup> It is noteworthy that these activities have led in turn to commitments from the private sector to investment and to reduce emissions.<sup>91</sup>

### **Technology and its transfer: umbrella term, hiding problems?**

Within all these developments, the simple terms ‘technology’ and ‘transfer’ mask many challenges. For now, the complex question of how technology might be developed in the first place will be put to one side.<sup>92</sup> The Climate Technology Centre and Network, part of the Technology Mechanism, has stated that ‘[t]echnology transfer is a multifaceted and global challenge which requires the collective action of the UNFCCC, multilateral institutions, governments, civil society and the private sector’.<sup>93</sup> Scholars have identified use of the term ‘technology transfer’ in different regulatory regimes and noted that this is without a focus on what is actually meant – it could cover physical transfer of machines,

<sup>88</sup> Paris Agreement, art 10(5).

<sup>89</sup> Paris Agreement, art 10(1) and (4).

<sup>90</sup> Eg UNFCCC COP 24 (Katowice) Agenda items 3a, 8, 8a, 8b <https://unfccc.int/event/cop-24> and Reviews of the Climate Technology Centre and Network [https://unfccc.int/sites/default/files/resource/cp24\\_auv\\_ctcn.pdf](https://unfccc.int/sites/default/files/resource/cp24_auv_ctcn.pdf) and Enhancing climate technology development and transfer through the Technology Mechanism [https://unfccc.int/sites/default/files/resource/cp24\\_auv\\_tm.pdf](https://unfccc.int/sites/default/files/resource/cp24_auv_tm.pdf), both accessed 2 January 2019; Preparation for the Implementation of the Paris Agreement Draft Decisions –CP/24 and –CMA/1 ‘Technology Transfer framework under Article 10, paragraph 4 of the Paris Agreement’ FCCC/CP/2018/L.7.

<sup>91</sup> See eg UN Climate Press Release, ‘Concrete Climate Action Commitments at COP 23’ (18 November 2017) <https://unfccc.int/news/concrete-climate-action-commitments-at-cop23> Unilever and Microsoft accessed 2 January 2019; Oil and Gas Climate Initiative, ‘At Work. Committed to Climate Action’ (2018) [https://oilandgasclimateinitiative.com/wp-content/uploads/2018/09/OGCI\\_Report\\_2018.pdf](https://oilandgasclimateinitiative.com/wp-content/uploads/2018/09/OGCI_Report_2018.pdf) accessed 2 January 2019.

<sup>92</sup> See also eg Valentina Bosetti and Michela Catenacci (eds) *Innovation under Uncertainty. The Future of Carbon-free Energy Technologies* (Edward Elgar Publishing 2015).

<sup>93</sup> CTCN, ‘CTCN in Media: Enabling Climate Action with Technology Transfer’ (11 December 2017) <https://www.ctc-n.org/news/ctcn-media-enabling-climate-action-technology-transfer> accessed 2 January 2019.

drugs and crops,<sup>94</sup> human capacity noted above and legal means of enabling transfer through contract, consultancy, licensing or assignment agreements.<sup>95</sup>

This last point raises a key issue: in addition to physical possession of equipment or software, funds to acquire this and expertise to use it, one may need to address the question of IP rights in the underlying innovation, design or creative work. As indicated at the start of this chapter, IP rights may be owned by private entities. Such entities do not have obligations under the international instruments just discussed. The growing corporate support for the meeting for the Paris goals noted above, and, for example, the promotion of the Science Targets initiative in advance of the UNFCCC meeting in California in 2018,<sup>96</sup> do not change this. Accordingly, it is valuable to explore the potential impact of IP rights on responses to climate change.

## **IP and Climate Change Linkages: Practical and Instrumental**

### **An IP and climate change nexus**

The links between IP rights and responding to climate change have strong echoes of the technology and climate change discussion above. Patents can be relevant to development and dissemination of renewable energy;<sup>97</sup> designs can be relevant to elements of delivery of the renewable energy (such as the shape of wind turbines or tidal technology);<sup>98</sup> and copyright and database can be relevant to data sets of changes in

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<sup>94</sup> Stephen Humphreys, 'Structural Ambiguity: Technology Transfer in Three Regimes' in Margaret Young (ed) *Regime Interaction in International Law: Facing Fragmentation* (Cambridge University Press 2012) (Young).

<sup>95</sup> Eg TWI <https://www.twi-global.com/who-we-are/who-we-work-with/strategic-programmes> and UK University Technology Transfer: behind the deadlines <https://interface-online.org.uk/sites/default/files/TT-in-the-UK-Paper-29-04-15.pdf>, both accessed 8 January 2019.

<sup>96</sup> UN Climate Change, '500 Companies to Commit to Science-based Climate Targets' (26 January 2018) <https://cop23.unfccc.int/news/500-companies-to-commit-to-science-based-climate-targets> accessed 2 January 2019.

<sup>97</sup> See discussion in Eric Lane, 'Legal Aspects of Green Patents' in Andree Kirchner and Iris Kirchner-Freis (eds) *Green Innovations and IPR Management* (Kluwer 2013) 3–65 and European Patent Office, 'EPO supports new platform on renewable energy innovation' (10 July 2015) <https://www.epo.org/news-issues/news/2015/20150710.html> accessed 2 January 2019.

<sup>98</sup> See eg UK registered design 4037878 registered 21 October 2014 'Impellor designed for turbine rotar shaft', Michael French.

temperature<sup>99</sup> and manuals and information sets.<sup>100</sup> Patents<sup>101</sup> and copyright<sup>102</sup> can be obtained or exist in respect of software, which can be valuable for moving power around the grid.<sup>103</sup> It should be noted here that this book does not address trade secrets. Trade secrets form an important part of the innovation landscape.<sup>104</sup> They confer an ability to control similar to that of IP rights, and trade secrets has its own evolving tensions regarding intersections with climate change.<sup>105</sup> It is a valuable area for further enquiry, building on the proposals made in this book. But such an exercise must wait for now.

Owners of IP rights such as the ones just introduced could choose to prevent the activity of others. The levels of engagement with this issue will now be explored.

### **IP and responses to climate change: instrumental engagement**

There has long been awareness at international level of possible tensions between IP and the addressing of environment-related questions.<sup>106</sup> From

<sup>99</sup> See eg NASA, 'GISS Surface Temperature Analysis' <https://data.giss.nasa.gov/gistemp/> accessed 8 January 2019; see also Renewable Energy Planning Database (which includes useful details of operators, site name, technology type and installed capacity) enabling the tracking of renewable electricity projects as they move through the planning system. <https://www.gov.uk/government/publications/renewable-energy-planning-database-monthly-extract> accessed 15 January 2019.

<sup>100</sup> See consideration in Michael Carroll, 'Intellectual Property and Related Rights in Climate Data' in Sarnoff n5, 384–398.

<sup>101</sup> European Patent Convention (EPC) art 52(2)(c) and (3), and UK Patents Act 1977 (PA), s1(2)(c).

<sup>102</sup> UK Copyright Designs and Patents Act 1988, (CDPA) ss1, 3.

<sup>103</sup> See eg BINE information service, 'Feeding wind power into the grid in accordance with needs' <http://www.bine.info/en/publications/themeninfos/publikation/rave-forschen-am-offshore-testfeld/windstrom-bedarfsgerecht-einspeisen/> accessed 2 January 2019.

<sup>104</sup> See overviews and consideration in Rochelle C Dreyfuss and Katherine J Strandburg (eds) *The Law and Theory of Trade Secrecy* (Edward Elgar Publishing 2011); Tanya Aplin, Lionel Bently, Philip Johnson and Simon Malynicz, *Gurry on Breach of Confidence* (2nd ed) (Oxford University Press 2012).

<sup>105</sup> Sharon K Sandeen and David S Levine, 'Trade Secrets and Climate Change: Uncovering Secret Solutions to the Problem of Greenhouse Gas Emissions' in Sarnoff n5.

<sup>106</sup> The author has explored the relationship between IP and climate change in Abbe Brown, 'Intellectual Property and Climate Change' in Justine Pila and Rochelle Cooper Dreyfuss (eds) *Oxford Handbook of Intellectual Property Law*

the Earth Summit, Agenda 21 calls for consideration of the role of patents and other IP rights, and their impact on access to and transfer of environmentally sound technologies regarding developing countries, while also calling for consideration of fair incentives to innovate.<sup>107</sup> Agenda 21 does note that much useful technological knowledge is in the public domain and is not the subject of patents.<sup>108</sup> Agenda 21 also calls for international technology to be combined with local innovations to generate alternative technologies to those covered by private rights.<sup>109</sup>

The CBD stresses that when there is IP, access is to be provided on terms which are consistent with the adequate and effective protection of IP.<sup>110</sup> Further, states are to cooperate to ensure that IP shall support and not run counter to the objectives of the CBD, and in particular that states' implementation of the Agreement on Trade-Related Aspects of Intellectual Property Rights ('TRIPS') – the IP provisions of the World Trade Organization ('WTO') which is discussed below – is not to lead to IP operating in a manner counter to the CBD.<sup>111</sup> This last complex relationship<sup>112</sup> is also reflected in the CBD's Nagoya Protocol on Access and Benefit Sharing of 2010. This has IP as one way of rewarding those who are involved in providing and protecting raw resources; but there are others, including paying fees for sample taking, research funding, admittance to datasets, and food and livelihood security benefits.<sup>113</sup> Further, the Kyoto Protocol provides that states are to create an 'enabling environment' for the private sector to promote and enhance the transfer of, and access to, environmentally sound technologies.<sup>114</sup>

This engagement, particularly in the Kyoto Protocol, shows a recognition of a possible conflict between private rights and state goals, and between the private power conferred by IP rights and state responsibility under international agreements. The extent to which there really is a

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(Oxford University Press 2018) (Pila/Cooper Dreyfuss); see also collections of Sarnoff n5 and Brown n78.

<sup>107</sup> Agenda 21, para 34.10, 34.11.

<sup>108</sup> Agenda 21, para 34.9 – noting the need for expertise and know-how to enable technology to be used.

<sup>109</sup> Agenda 21, para 34.11.

<sup>110</sup> CBD, art 16(2) and (3).

<sup>111</sup> CBD, art 16(5).

<sup>112</sup> See eg arguments that IP could be inconsistent with the CBD's focus on consent and sharing of benefit in Tania Bubela and Richard Gold (eds) *Genetic Resources and Traditional Knowledge: Case Studies and Conflicting Interests* (Edward Elgar Publishing 2012).

<sup>113</sup> See Nagoya Protocol, Annex 'Monetary and Non-monetary Benefits'.

<sup>114</sup> Kyoto Protocol, art 10(c).

problem has been the subject of significant scholarly debate, including empirical work and policy analysis.<sup>115</sup> This was particularly so prior to the UNFCCC Copenhagen meeting in 2009, when states sought to create a post-Kyoto regime. There were arguments about the need for a UNFCCC declaration requiring sharing of IP rights in respect of environmentally sustainable technologies,<sup>116</sup> which would have reflected developments at the WTO regarding IP and public health.<sup>117</sup> There is a view that such interventions are not warranted as the most effective means of addressing climate change through more technical approaches is by reducing use of coal and cement,<sup>118</sup> and that, as will be discussed, interfering with the power of IP owners could be counterproductive by discouraging the development of technology.<sup>119</sup> Ultimately, as noted, the Copenhagen meeting led to the Technology Mechanism – and not to a declaration on IP and climate change.

Arguably, the Copenhagen approach seeks to address the substantive issue of bringing about technology transfer. It has been suggested that

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<sup>115</sup> John H Barton, 'Intellectual Property and Access to Clean Energy Technologies in Developing Countries: An Analysis of Solar Photovoltaic, Biofuels and Wind Technologies' (ICTSD Trade and Sustainable Energy Series Issue Paper, No. 2 (2007) <http://www.ictsd.org/themes/climate-and-energy/research/intellectual-property-and-access-to-clean-energy-technologies-in-x>, xi; Bernice Lee, Ilian Iliev and Felix Preston, 'Who owns our low carbon future? Intellectual Property and Energy Technologies. A Chatman House Report' (2009) [https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/r0909\\_lowcarbonfuture.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/public/Research/Energy,%20Environment%20and%20Development/r0909_lowcarbonfuture.pdf), viii-x; EPO, UNEP, ICTSD, 'Patents and clean energy technologies (CETs): bridging the gap between evidence and policy' (2010) <https://www.epo.org/news-issues/technology/sustainable-technologies/clean-energy/patents-clean-energy.html>; Dean Baker, Arjun Jayadev and Joseph Stiglitz, 'Innovation, Intellectual Property and Development: A Better Set of Approaches for the 21st Century' (July 2017) <http://cepr.net/images/stories/reports/baker-jayadev-stiglitz-innovation-ip-development-2017-07.pdf> 49–53, all accessed 2 January 2019.

<sup>116</sup> See also Kuei-Jung Ni, 'Legal Aspects (Barriers) of Granting Compulsory Licenses for Clean Technologies in Light of WTO/TRIPS Rules: Promise or Mirage?' [2015] *World Trade Review* 701.

<sup>117</sup> See webpages, 'TRIPS and public health' [https://www.wto.org/english/tratop\\_e/trips\\_e/pharmpatent\\_e.htm](https://www.wto.org/english/tratop_e/trips_e/pharmpatent_e.htm) accessed 8 January 2019 and see Duncan Matthews, *Intellectual Property, Human Rights and Development: The Role of NGOs and Social Movements* (Edward Elgar Publishing 2011).

<sup>118</sup> Keith Culver, 'Low Carbon Futures for All? Strategic Options for Global Availability of Environmental Technologies' in Brown n78.

<sup>119</sup> Jon P Santamauro, 'Failure Is Not an Option: Enhancing the Use of Intellectual Property Tools to Secure Wider and More Equitable Access to Climate Change Technologies' in Brown n78.

regard to IP may be merely a distraction<sup>120</sup> and notably IP was absent from the International Law Association 2014's Declaration of Legal Principles Relating to Climate Change, although this does explore technology.<sup>121</sup> Argument has continued, however, at the UNFCCC<sup>122</sup> and also at the WTO<sup>123</sup> regarding the need for greater intervention with the power of IP in relation to climate change.

Notably, developments have also been seen in these respects from the EU. In a negotiating position adopted before the UNFCCC meeting leading to the Paris Agreement, IP was seen as key in developing technologies.<sup>124</sup> Yet a change was seen in 2018 prior to the UNFCCC meeting in Katowice. The EU called for a declaration on IP and climate change to assist in climate action in developing countries, similar to that made at the WTO/TRIPS in respect of public health.<sup>125</sup> Further, when India ratified the Paris Agreement in 2016, this was on the basis that there would be support from developed countries regarding technology.<sup>126</sup> This 2016 UNFCCC meeting led to the Marrakech Action Proclamation for climate and sustainable development. This called in turn for an 'increase in improved capacity and technology, including from

<sup>120</sup> Navraj Singh Ghaleigh, 'The Puzzling Persistence of the Intellectual Property Right/Climate Change Relationship' in Brown n78.

<sup>121</sup> Committee on Legal Principles Relating to Climate Change Resolution 2/2014, Declaration of Legal Principles Relating to Climate Change, art 5(2)(c)(i) and (ii) and 3(b) (technology), art 10 (interrelationship with other areas international law esp (3)).

<sup>122</sup> See Third World Network, 'Climate Change and Technology Transfer: Addressing Intellectual Property Issues' Submission to TEC in response to calls for proposals on how to create enabling environment' [http://unfccc.int/ttclear/misc/\\_StaticFiles/gnwoerk\\_static/TEM\\_tec\\_cfi\\_ee/7843d4ba5e5e459c99deb4e47b972e83/f7d4f254005e4fb786bd4cf1679e5d1a.pdf](http://unfccc.int/ttclear/misc/_StaticFiles/gnwoerk_static/TEM_tec_cfi_ee/7843d4ba5e5e459c99deb4e47b972e83/f7d4f254005e4fb786bd4cf1679e5d1a.pdf), 4–12 accessed 8 January 2019.

<sup>123</sup> WTO, 'Climate change and TRIPS' [https://www.wto.org/english/tratop\\_e/trips\\_e/cchange\\_e.htm](https://www.wto.org/english/tratop_e/trips_e/cchange_e.htm) accessed 8 January 2019 including calls for exceptions, compulsory licensing and engagement with the UNFCCC eg June 2014 TRIPS Council minutes.

<sup>124</sup> Communication from the Commission, 'The Paris Protocol – A Blueprint for tackling global climate change beyond 2020' COM (2015) 81 final see in particular sections 4 and 7.

<sup>125</sup> European Parliament Resolution 2018/2598(RSP) para 69 referring to the Declaration on the TRIPS agreement and public health (2001) WT/MIN (01)/DEC/2; and see n117.

<sup>126</sup> Government of India, 'India will Protect the Interests and Strongly Present the Viewpoint of Developing Countries at Cop22 in Morocco': Environment Minister (1 October 2016) <http://pib.nic.in/newsite/PrintRelease.aspx?relid=151326> (ii) accessed 2 January 2019.

developed to developing countries' – but it did not refer to IP.<sup>127</sup> Finally, in 2017 South Africa's position regarding implementation of the Paris Agreement included that 'climate technologies need to flow, without hiding behind the issue of Intellectual Property Rights'.<sup>128</sup>

The theme of the level of engagement between climate change and IP will be a common one throughout this book. For now, the rest of this chapter explores the international, and on occasion regional, legal frameworks and policy action regarding the existence, transfer and enforcement of IP rights, and how they engage with climate change and other related fields. Again, this will inform the rest of the book. This chapter will then raise the key underexplored and important question: the relationship between all these fields at national level.

## DEEPENING THE PROBLEM

### **The International Landscape Requiring the Protection of IP**

#### **19th-century treaties**

IP has been introduced so far through the lens of being a potential barrier to the meeting of some international obligations. Yet IP also has its own established place in the international legal landscape. This draws from the 19th century, when countries which had reached a level of industrialisation chose to enter into treaties for the protection of industrial property (notably patents and designs)<sup>129</sup> and of copyright.<sup>130</sup> These treaties are now administered by the World Intellectual Property Organization

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<sup>127</sup> Marrakech Action Proclamation for climate and sustainable development [https://unfccc.int/files/meetings/marrakech\\_nov\\_2016/application/pdf/marrakech\\_action\\_proclamation.pdf](https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/marrakech_action_proclamation.pdf) accessed 2 January 2019.

<sup>128</sup> Republic of South Africa Department of Environmental Affairs, 'Full Wrap: South Africa participates in CoP23 in Bonn, Germany' [https://www.environment.gov.za/event/international/southafrica\\_participates\\_cop23bonn\\_germany2017](https://www.environment.gov.za/event/international/southafrica_participates_cop23bonn_germany2017) accessed 2 January 2019, p2.

<sup>129</sup> Paris Convention 1883–1879 UNTS vol 828 p305 and see Sam Ricketson, 'The Emergence and Development of the International Intellectual Property System' in Pila/Cooper Dreyfuss n106.

<sup>130</sup> Berne Convention 1886 UNTS vol 828 p221, see Sam Ricketson, 'The Birth of the Berne Union' 1986 11 Columbia-VLA Journal of Law and the Arts 9, exploring roots of copyright eg in English authors suffering from Irish cheap reprints and in France Victor Hugo's desire to protect authors.

(‘WIPO’). Since 2007 WIPO has had a development agenda,<sup>131</sup> and, relevant here, there is also WIPO Green, which is a market place for sustainable technology.<sup>132</sup>

The established IP treaties set out the exclusive forms of protection which parties to the treaties must afford to innovators and creators in their country, with the same protection to be offered to innovators and creators from other member countries.<sup>133</sup> As more countries became industrialised, they chose to join these treaties. It has been argued, however, that to become industrialised states had first, unrestricted by the confines of IP, used the technical and creative developments of other countries.<sup>134</sup>

### 20th-century treaties

This international IP framework evolved, and some parallels can be seen with the negotiations and approaches which were discussed above regarding the environment and climate change. Firstly, there was diversity in approaches taken by different countries. 1952 saw the UNESCO Universal Copyright Convention,<sup>135</sup> of which the United States was a member. This membership was significant as the United States did not join the Berne Convention until 1989.<sup>136</sup> In 1967 arguments for a new approach to copyright, seeking to address the perspectives of the post-colonial era, led to the Stockholm revision of the Berne Convention. This has been termed the ‘forgotten access to knowledge treaty’<sup>137</sup> and created

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<sup>131</sup> Webpage, ‘Development Agenda for WIPO’ <http://www.wipo.int/ip-development/en/agenda/> accessed 3 January 2019.

<sup>132</sup> Webpage, ‘WIPO GREEN – The Marketplace for Sustainable Technology’ <https://www3.wipo.int/wipogreen/en/> accessed 3 January 2019.

<sup>133</sup> Paris Convention, art 2; Berne Convention, art 3.

<sup>134</sup> Peter Drahos, ‘Negotiating Intellectual Property Rights: Between Coercion and Dialogue’ in Peter Drahos and Ruth Mayne, *Global Intellectual Property Rights. Knowledge, Access and Development* (Palgrave Macmillan 2002) (Drahos) 161–168.

<sup>135</sup> UNTS vol 943 p178. This has key differences in formalities and terms from those in the Berne Convention, see discussion in John Schulman, ‘International Copyright in the United States: A Critical Analysis’ 1954 *Law and Contemporary Problems* 141.

<sup>136</sup> Jane C Ginsburg and John M Kernochan, ‘One Hundred and Two Years Later: The US Joins the Berne Convention’ 1988–89 13 *Columbia-VLA Journal of Law and the Arts* 1.

<sup>137</sup> Berne Convention Appendix Special Provisions Regarding Developing Countries.

a basis for more exceptions to copyright in the national laws of developing countries.

There were limited enforcement opportunities under these IP treaties discussed so far<sup>138</sup> and states took different approaches to their obligations. This perceived lack of respect for IP, together with concerns about alleged significant mass counterfeiting in China, led to pressure, in particular from Japan and the United States, for a new IP treaty.<sup>139</sup> The outcome was TRIPS in 1994, mentioned above,<sup>140</sup> part of the WTO Agreement. Nearly all countries are members of the WTO as it provides market access on better terms to more countries than would otherwise be the case.<sup>141</sup> TRIPS came two years after the Earth Summit, and many of its members are also members of the UNFCCC.<sup>142</sup> As will be seen, however, there are important differences between TRIPS and the Earth Summit outputs in their engagement with some key points.

Under TRIPS, all WTO members must have IP laws which confer exclusive stated rights for, in particular, patents, copyright and design, and must have judicial enforcement processes and remedies.<sup>143</sup> TRIPS also sets out some transitional arrangements for countries which are at different levels of development, notably regarding pharmaceutical patents.<sup>144</sup> TRIPS does not refer to climate change. This is of interest, given that some of the climate change-related documents discussed above had made reference to IP.<sup>145</sup> TRIPS does provide that states can choose not to grant patents if the commercial exploitation of the invention is contrary to *ordre public* or morality, with this stated to include delivering serious prejudice to the environment.<sup>146</sup> More generally, TRIPS provides that states may have some limited exceptions to the power of IP rights –

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<sup>138</sup> Berne Convention, art 33; Paris Convention, art 28 and for consideration of its limits see Susy Frankel, 'WTO Application of "the Customary Rules of Interpretation of Public International Law" to Intellectual Property' 2005–6 46 Virginia Journal of International Law 365 (Frankel).

<sup>139</sup> Drahos n134 and Daniel Gervais, *The TRIPS Agreement. Drafting History and Analysis* (3rd ed) (Thomson Sweet & Maxwell 2008).

<sup>140</sup> TRIPS Annex 1C WTO Agreement [https://www.wto.org/english/docs\\_e/legal\\_e/27-trips\\_01\\_e.htm](https://www.wto.org/english/docs_e/legal_e/27-trips_01_e.htm) (TRIPS).

<sup>141</sup> Drahos n134.

<sup>142</sup> Members of the WTO [https://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/org6\\_e.htm](https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm) and UNFCCC Parties and Observers <https://unfccc.int/parties-observers>, both accessed 2 January 2019.

<sup>143</sup> TRIPS, arts 9, 15, 25, 27, 41–50.

<sup>144</sup> TRIPS, arts 65, 66 and WTO IP/C/72 6 November 2015.

<sup>145</sup> See nn107–114 above.

<sup>146</sup> TRIPS, art 27(2).

broadly, rights which have reasonable regard to the interests of others but also to the normal expectations of the IP owner.<sup>147</sup> Importantly, however, states are not required to impose these limits. This lack of requirement has been argued to have limited the exploration of these opportunities.<sup>148</sup> States can also take steps to prevent abuse of IP or practices which adversely affect the international transfer of technology, provided they are consistent with the Agreement.<sup>149</sup> Finally, states can require sharing of patents in some cases, including to address national emergencies.<sup>150</sup> This could raise some opportunities in respect of climate change; but again, there is no obligation to do this.

TRIPS refers specifically to technology transfer. In (again) non-binding provisions in contrast to those regarding protection of IP, TRIPS provides that states should contribute to the promotion of innovation and transfer of technology, to the mutual advantage of producers and users and in a manner conducive to social and economic welfare and a balance of rights and obligations.<sup>151</sup> States may also adopt measures necessary to promote the public interest in sectors of vital importance to their social economic and technological development.<sup>152</sup> Further, TRIPS provides that developed country states are to provide incentives to promote the transfer of technology to least developed countries, to enable them to create a sound and viable technological base; and that developed countries should provide technical and financial assistance to developing and least developed countries regarding IP and its enforcement, upon request and on agreed terms.<sup>153</sup> The WTO also has a Working Group on Trade and Transfer of Technology.<sup>154</sup> Further, there is a relationship between trade

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<sup>147</sup> TRIPS, arts 9 (referring to Berne), 17, 26(2), 30.

<sup>148</sup> Carlos Correa, 'Can the TRIPS Agreement Foster Technology Transfer to Developing Countries' in Keith E Maskus and Jerome H Reichman (eds) *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (Cambridge University Press 2005) (Maskus/Reichman).

<sup>149</sup> TRIPS, art 8(2).

<sup>150</sup> TRIPS, art 31(b).

<sup>151</sup> TRIPS, art 7.

<sup>152</sup> TRIPS, art 8(1).

<sup>153</sup> TRIPS, arts 66(2) and 67. See TRIPS Council reports IP/C/W/631 and 616 reports on implementation by Canada and Australia.

<sup>154</sup> WTO, 'Working Group on Trade and Transfer of Technology' [https://www.wto.org/english/tratop\\_e/devel\\_e/dev\\_wkgrp\\_trade\\_transfer\\_technology\\_e.htm](https://www.wto.org/english/tratop_e/devel_e/dev_wkgrp_trade_transfer_technology_e.htm) accessed 2 January 2019.

and the environment at the WTO,<sup>155</sup> although this takes a different direction (with a focus on tariffs) from that explored in this book.<sup>156</sup>

### **Reflections on the international IP landscape**

TRIPS imposes obligations on states to confer power through the grant of IP rights. There is very limited focus, and no direct treaty engagement, with the impact of the conduct of private IP owners in general or regarding climate change in particular. Some other international regimes can also be relevant to this issue and the place of sustainable development and of human rights will now be discussed.

## **The Wider International Climate Change and Technology Legal Landscape**

### **Sustainable development**

Sustainable development was discussed above regarding Agenda 21, from the technology and IP perspective. A valuable starting point more generally is the 1986 UN Declaration on the Right to Development.<sup>157</sup> This provides that development is a comprehensive economic, social, cultural and political process;<sup>158</sup> and that the right to development is an inalienable human right to economic, social, cultural and political development, in which all human rights can be realised.<sup>159</sup> In 1987, the World Commission on Environment and Development ('The Brundtland Commission') published 'Our Common Future'. This defines sustainable development as meeting 'the needs of the present without compromising the ability of future generations to meet their own needs'.<sup>160</sup> 'Our Common Future' makes some references to technology and to its opportunities and risks, regarding, in particular, crops and private power.<sup>161</sup> Further, it notes that patents (stated to be largely held by

<sup>155</sup> Fiona Macmillan, *WTO and the Environment* (Sweet and Maxwell 2001).

<sup>156</sup> See WTO, 'Trade and the environment' [https://www.wto.org/english/tratop\\_e/envir\\_e/envir\\_e.htm](https://www.wto.org/english/tratop_e/envir_e/envir_e.htm), 'Environmental Goods Agreement (EGA)' [https://www.wto.org/english/tratop\\_e/envir\\_e/ega\\_e.htm](https://www.wto.org/english/tratop_e/envir_e/ega_e.htm), both accessed 16 May 2019; Emily Reid, *Balancing Human Rights Environmental Protection and International Trade* (Hart 2015) (Reid) 213–235, 244–245.

<sup>157</sup> A/RES/41/128 (4 December 1986).

<sup>158</sup> Declaration on the Right to Development, second recital.

<sup>159</sup> Declaration on the Right to Development, art 1.

<sup>160</sup> Report of the World Commission on Environment and Development: Our Common Future (1987) <http://www.un-documents.net/our-common-future.pdf>, accessed 4 January 2019, para 27.

<sup>161</sup> Our Common Future, see paras 8, 16, 37, 80–84.

developed country-based owners) are driving payments and could hamper equality and transfer of environmentally sound technologies.<sup>162</sup>

Other instruments discussed above in respect of technology also engaged with sustainable development. In 1992 the Rio Declaration confirmed the strong interconnections between climate change and sustainable development. It provides that '[h]uman beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature';<sup>163</sup> that 'the right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations';<sup>164</sup> and that 'in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it'.<sup>165</sup> The Kyoto Protocol provides that each party is to reduce emissions to promote sustainable development.<sup>166</sup>

Further sustainable development initiatives were the UN Millennium Development Goals, which included environmental sustainability to be achieved by 2015,<sup>167</sup> and in 2002 there was the Johannesburg Declaration on Sustainable Development.<sup>168</sup> Together, this set up a basis for the Rio+20 conference, 20 years after the Earth Summit, which is considered later in this chapter. First, human rights will be discussed.

### **Human rights – international**

Links between human rights and the environment can be found in several human rights treaties, which in the main pre-date the sustainable development instruments discussed above.<sup>169</sup> These human rights treaties impose obligations on states to protect and ensure rights to individuals in

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<sup>162</sup> Our Common Future, para 68.

<sup>163</sup> Rio Declaration, principle 1.

<sup>164</sup> Rio Declaration, principle 3.

<sup>165</sup> Rio Declaration, principle 4.

<sup>166</sup> Kyoto Protocol, arts 2(1) and 10.

<sup>167</sup> UN Millennium Development Goals and Beyond 2015 <http://www.un.org/millenniumgoals/> accessed 4 January 2019.

<sup>168</sup> A/CONF.199/20.

<sup>169</sup> For an excellent overview of the intersections between climate change and human rights without engaging with technology, see Bodansky n27, 294–327; John H Knox, 'Human Rights Principles and Climate Change' and Philippe Cullet, 'Human Rights and Climate Change: Broadening the Right to the Environment' in Carlane n3; Sumudu Atapattu, *Human Rights Approaches to Climate Change: Challenges and Opportunities* (Routledge 2016).

their territory.<sup>170</sup> There are some rights which could be relevant to the transfer of or access to technologies in respect of climate change: rights to share in the benefits of scientific progress,<sup>171</sup> to health<sup>172</sup> and to life.<sup>173</sup>

There has also been specific recognition of the link between human rights and the environment. In 1997 the International Court of Justice noted the importance of the environment for the whole of humankind, in a case involving construction and operation of locks in a dispute between Slovakia and Hungary.<sup>174</sup> There is a 2003 Council of Europe recommendation calling for states to recognise a human right to health and to a decent environment.<sup>175</sup> In 2008 the UN Human Rights Council passed a resolution on climate change, referring to the UNFCCC and to the Bali Action Plan.<sup>176</sup> In 2009 the Office of the UN High Commissioner for Human Rights issued a report on the relationship between climate change and human rights.<sup>177</sup> Building on this, in 2012 the UN High Commissioner for Human Rights appointed an independent expert, who then became a Special Rapporteur for Human Rights and the Environment. The appointment was made in 2015 in a resolution referring to the Paris Agreement.<sup>178</sup> The mandate is to ‘study the human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable

<sup>170</sup> Eg International Covenant on Civil and Political Rights (ICCPR) 1966 UNTS vol 999 p171, art 2.

<sup>171</sup> International Covenant on Economic, Social and Cultural Rights (ICESCR) 1966 UNTS vol 993, p3 art 15(1)(b).

<sup>172</sup> ICESCR, art 12, which does include a reference to improvement of environmental hygiene (2)(b) considered in General Comment No. 14 (2000) E/C.12/2000/4.

<sup>173</sup> ICCPR, art 6.

<sup>174</sup> *Gabcikovo-Nagymaros Project (Hungary/Slovakia)* (1997) ICJ Reports 1997, p7, para 53, p38, p78 para 140.

<sup>175</sup> Council of Europe recommendation Environment and human rights 1614 (2003).

<sup>176</sup> A/HRC/RES/7/23 Human rights and climate change (2008), para 5 preamble.

<sup>177</sup> A/HRC/10/61 para 87 refers to the UNFCCC and its provisions on funding and transfer of technology.

<sup>178</sup> A/HRC/RES/34/20; A/HRC/RES/37/8 preamble paras 7 and 8; UNHR Office of High Commissioner, ‘Special rapporteur on human rights and the environment’ <http://www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/SREnvironmentIndex.aspx> accessed 4 January 2019. Note also report of 2019 (A/HRC/40/55) regarding clean air. This refers to technologies, notably regarding measurement; stoves, heating and lighting; travel and electric cars; and sharing information about technologies; it does not refer to IP rights (see paras 65, 69, 87–90, 98–101, 110, 112(f) (h) (i), 114).

environment, and promote best practices relating to the use of human rights in environmental policymaking'. Further, the Human Rights Council passed resolutions on human rights and the environment in 2012,<sup>179</sup> 2014<sup>180</sup> and 2015.<sup>181</sup> These human rights developments do not, however, focus on technology or IP.

Developments were also seen with a direct focus on climate change which also engage with human rights. The International Bar Association<sup>182</sup> drew on the Special Rapporteur appointment in its 2014 proposal<sup>183</sup> for a Model Statute on Legal remedies for Climate Change, for use at national level. This calls for regard to human rights regarding environmental degradation and also regard to the consequences of climate change for human rights.<sup>184</sup> It does not refer to technology or IP. In 2015 a group of legal scholars (across, in particular, international law, human rights law and environmental law) developed the Oslo Principles on Global Climate Change Obligations. These refer to companies, and to financial and technical support.<sup>185</sup> The Oslo Principles led to the Climate Change Principles for Enterprises of 2017, which engage with tort and refer to technology.<sup>186</sup> They do not, however, engage with IP rights. In 2018 the UN High Commissioner for Human Rights wrote an open letter on integrating human rights in climate change, and the UN Special Procedures Mandate Holders called on states to fully integrate human rights standards and principles in the rules for implementing the Paris Agreement.<sup>187</sup> These did not refer to technology or IP as solutions.

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<sup>179</sup> A/HRC/RES/19/10.

<sup>180</sup> A/HRC/C/RES/25/21.

<sup>181</sup> A/HRC/RES/ 28/11.

<sup>182</sup> International Bar Association, 'Achieving Justice and Human rights in an Era of Climate Disruption' (2014) <https://www.ibanet.org/PresidentialTaskForceClimateChangeJustice2014Report.aspx> (IBA) accessed 7 January 2019.

<sup>183</sup> IBA, 11, 27, 127–136.

<sup>184</sup> IBA, 119, 128, 130.

<sup>185</sup> See <https://globaljustice.yale.edu/sites/default/files/files/OsloPrinciples.pdf> accessed 7 January 2019.

<sup>186</sup> See <https://climateprinciplesforenterprises.org/> accessed 7 January 2019, 68 et seq (tort), 125, 132, 140, 144, 147, 191 (technology).

<sup>187</sup> Letter <https://www.ohchr.org/Documents/Issues/ClimateChange/OpenLetterHC21Nov2018.pdf> accessed 26 January 2019 and see Joint Statement of the United Nations Special Procedures Mandate holders on the occasion of the 24th Conference of the Parties to the UNFCCC <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=23982&LangID=E> accessed 21 February 2019.

Links between human rights, climate change and IP were also considered in other UN activity. In 2009 UNESCO published the Venice Statement on the right to enjoy the benefits of science and its application<sup>188</sup> and in 2012 another United Nations Special Rapporteur explored the right to enjoy the benefits of science and its application. This report considered there to be links between this right and the environment and climate change; links with access to information, rights to food, health, and to the ‘emerging right to a clean and healthy environment’; and that the right included ‘an enabling environment fostering the conservation, development and diffusion of science and technology’.<sup>189</sup> The Rapporteur was also involved in calling for a focus on vulnerable places, climate change and human rights at a 2015 UNFCCC meeting leading to the Paris meeting and Agreement.<sup>190</sup>

### **Human rights – regional**

Regional human rights also exist under human rights instruments in respect of health,<sup>191</sup> life,<sup>192</sup> and regarding environmental protection and sustainable development.<sup>193</sup> Human rights cases have also been raised.<sup>194</sup>

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<sup>188</sup> See <http://unesdoc.unesco.org/images/0018/001855/185558e.pdf> accessed 7 January 2019.

<sup>189</sup> Special Rapporteur in the field of cultural rights, ‘The right to enjoy the benefits of scientific progress and its application’ A/HRC/20/26 (2012) paras 22, 23 (first quote), 25 (second quote), 67.

<sup>190</sup> Climate Vulnerable Forum, ‘International Human Rights Community urges heightened Ambition at COP’ (10 June 2015) <http://www.thevcf.org/international-human-rights-community-urges-heightened-ambition-at-cop21/> accessed 7 January 2019.

<sup>191</sup> Charter of Fundamental Rights of the European Union 2000/C 364/01, art 35 regarding preventive health care, medical treatment and implementation of a high level of human health protection into policies; American Declaration of the Rights and Duties of Man 1948 UNTS vol 144 p123 (ADRMD), art IX; the African Charter on Human and Peoples Rights of 1987 UNTS vol 1520 p217 (African Charter), art 16.

<sup>192</sup> European Convention on Human Rights 1951 UNTS vol 213 p221, art 2; EU Charter, art 2; ADRMD, art I; African Charter, art 4.

<sup>193</sup> EU Charter, art 37: ‘a high level of integration of environmental protection must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development.’ See also Treaty on the Functioning of the European Union OJ 115 9 May 2008 132–133, art 191; African Charter, art 24 satisfactory environment.

<sup>194</sup> See European Court of Human Rights *Taskin v Turkey* App no 46117/99 regarding planning permission for a gold mine and the impact on private life. Arguments in relation to the right to life were not considered, although the

Of particular relevance here is that on the basis of the American Declaration of the Rights and Duties of Man, a petition was lodged with the Inter-American Commission regarding global warming in the Arctic and the impact of this on Inuit communities.<sup>195</sup> Although this did not proceed, it has been argued that this could encourage further actions and activism based on human rights.<sup>196</sup> The Inter-American Commission also made a 2018 decision finding that states must take steps to deliver a healthy environment.<sup>197</sup> Elsewhere, the African Charter on Human and Peoples' Rights was the basis for a finding against the government of Nigeria regarding the impact of oil and gas activity on a community.<sup>198</sup> This all suggests that human rights can be of practical relevance in bringing about decisions and remedy and influencing future action in respect of the environment and climate change. This could in turn be suggested as a basis for interventions in respect of IP rights regarding technological responses to climate change.

### Human rights to IP?

Yet if one introduces human rights to the climate change and technology debate, one also needs to engage with some other perspectives which human rights brings. The European Convention on Human Rights includes a right to enjoyment of property,<sup>199</sup> and this has been found by the European Court of Human Rights to cover IP.<sup>200</sup> Further, the EU

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national court had considered that the grant of the permit was not consistent with a right to life and to a healthy environment under the constitution of Turkey.

<sup>195</sup> Petition by Watt-Cloutier Chair of Inuit Circumpolar Council Canada, 'Inuit Petition Inter-American Commission on Human Rights to Oppose Climate Change Caused by the United States of America' (7 December 2005) <http://www.inuitcircumpolar.com/inuit-petition-inter-american-commission-on-human-rights-to-oppose-climate-change-caused-by-the-united-states-of-america.html> accessed 7 January 2019.

<sup>196</sup> See Jacqueline Peel and Hari Osofsky, 'A Rights Turn in Climate Change Litigation' 2018 7(1) *Transnational Environmental Law* 37, also exploring potential for using other regional instruments, 64–65.

<sup>197</sup> Inter-American Human Rights Advisory Committee on the Environment and Human Rights <https://www.asil.org/insights/volume/22/issue/6/inter-american-court-human-rights-advisory-opinion-environment-and-human> accessed 7 January 2019.

<sup>198</sup> *The Social and Economic Rights Action Center et al v Nigeria* 155/96.

<sup>199</sup> Protocol 1 art 1; *Sporrong & Lonnroth v Sweden* Series A No 52 (1983) 5 EHRR 35.

<sup>200</sup> *Anheuser-Busch Inc v Portugal* Application 73049/01 (2007) 45 EHRR 36; *Balan v Moldova* no 19247/03 [2009] ECDR 6.

Charter also includes rights to the protection of property<sup>201</sup> and specifically to the protection of IP.<sup>202</sup> Finally, at international level, there is the right to the ‘moral and material reward of the author’.<sup>203</sup>

Scholarship<sup>204</sup> and a UN General Comment and Special Rapporteur reports<sup>205</sup> do note that this can cover copyright – which was discussed above as relevant to responses to climate change through technology. But UN outputs also argued that this should apply only to individual authors, not to corporate ones.<sup>206</sup> Further, it has been argued rather that copyright exists alongside and should have safeguards for other human rights; and more fundamentally, that copyright does not equate to a human right.<sup>207</sup>

This resistance to conferring extra protection on IP continued with yet another United Nations Special Rapporteur, in 2015. This report considered that IP rights can have a negative impact on, inter alia, the environment;<sup>208</sup> that there is no human right to patent protection;<sup>209</sup> that the rights to share in the benefits of science and culture require ‘affordability of and accessibility to technologies that are essential for a life with dignity’;<sup>210</sup> and that ‘human rights law operates as a limit to prevent the overreaching

<sup>201</sup> EU Charter, art 17(1).

<sup>202</sup> EU Charter, art 17(2); this has been the subject of significant attention, see eg Christophe Geiger, “‘Constitutionalising’ Intellectual Property Law? The Influence of Fundamental Rights on Intellectual Property in the European Union’ (2006) 37(4) *International Review of Intellectual Property and Competition Law* 371 and Christophe Geiger, ‘Implementing Intellectual Property Provisions in Human Rights Instruments’ in Christophe Geiger (ed) *Research Handbook on Human Rights and Intellectual Property* (Edward Elgar Publishing 2013).

<sup>203</sup> ICESCR, art 15(1)(c).

<sup>204</sup> See discussion in Audrey Chapman, ‘Approaching Intellectual Property as a Human Right: Obligations Related to Article 15(1)(c)’ 2001 (3) *Copyright Bulletin* XXXV, 4 and Laurence Helfer, ‘Human Rights and Intellectual Property: Conflict or Coexistence?’ 2003 (5) *Minnesota Intellectual Property Review* 47.

<sup>205</sup> Considered in General Comment No. 17 (2005), and Report of United Nations Office of High Commissioner for Human Rights Special Rapporteur in the field of cultural rights, ‘Copyright policy and the right to science and culture’ A/HRC/28/57 (Special Rapporteur 2014).

<sup>206</sup> Considered in General Comment No. 17 (2005) para 2, and Special Rapporteur 2014, paras 26–29, 40–51, 95, 99.

<sup>207</sup> Considered in General Comment No. 17 (2005) para 3 and Special Rapporteur 2014, paras 94–98.

<sup>208</sup> Special Rapporteur A/70/279 Report of Special Rapporteur in the field of Cultural Rights 2015 (Special Rapporteur 2015), para 3.

<sup>209</sup> Special Rapporteur 2015, para 5.

<sup>210</sup> Special Rapporteur 2015, para 89.

of economic claims by patent-owners in contexts where the rights to health, food, access to technology or other human rights could be compromised'.<sup>211</sup> This debate is likely to continue.

The discussion of human rights and of sustainable development makes clear that there are intersections between human rights, sustainable development and climate change, including in respect of scientific progress and also intersections between climate change, human rights and IP rights. There are also differing views in respect of them. From this base, it is important to now explore calls for greater emphasis on environmental and climate change perspectives.

### **Some different approaches and some more integrated approaches**

In 2003 the Earth Charter was prepared, outside the formal international law regime, by a global movement of environmental activists.<sup>212</sup> The Earth Charter calls for a change in approach to the environment, and addresses everyone. This is an important distinction from the human rights treaties addressed to states. The Earth Charter provides: '[w]e stand at a critical moment in Earth's history, a time when humanity must choose its future ... [w]e must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice and a culture of peace.'<sup>213</sup> Importantly, the preamble also provides: '[w]e have the knowledge and technology to provide for all and to reduce our impacts on the environment.'<sup>214</sup> The Earth Charter goes on to set out principles, including ecological integrity,<sup>215</sup> and to provide that everyone should promote the development, adoption and equitable transfer of environmentally sound technologies.<sup>216</sup> Looking forward, the Earth Charter states that '[l]ife often involves tensions between important values. This can mean difficult choices. However, we must find ways to harmonize diversity with unity, the exercise of freedom with the common good, short-term objectives with long term goals.'<sup>217</sup>

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<sup>211</sup> Special Rapporteur 2015, para 90.

<sup>212</sup> Earth Charter Initiative website <http://earthcharter.org/act/> and Earth Charter <http://earthcharter.org/discover/the-earth-charter/> both accessed 7 January 2019.

<sup>213</sup> Earth Charter para 1 preamble.

<sup>214</sup> Earth Charter, para 4 preamble.

<sup>215</sup> Earth Charter, principle II.

<sup>216</sup> Earth Charter, art 7(c).

<sup>217</sup> Earth Charter, para 3 under 'The Way Forward'.

2010 saw the Universal Declaration of Rights of Mother Earth, arising from the World People's Conference.<sup>218</sup> This was made by 'we, the peoples and nations of Earth',<sup>219</sup> and provides that 'we are all part of Mother Earth, an indivisible, living community of interrelated and interdependent beings with a common destiny'.<sup>220</sup> In the Declaration, Mother Earth is said to have inherent rights, including to life, to be respected, clean air, integral health, to regenerate and to be free from contamination.<sup>221</sup> Finally, the Declaration provides that human beings, states, and public and private institutions must respect, protect, conserve and where necessary restore the integrity of the vital ecological cycles, processes and balances of Mother Earth.<sup>222</sup>

These approaches met with the international framework introduced above at the Rio+20 Conference in 2012.<sup>223</sup> This led to 'The Future We Want',<sup>224</sup> which renewed the international commitment to promoting an economically, socially and environmentally sustainable future.<sup>225</sup> It also noted that in some countries there are rights to nature and the use of the term Mother Earth.<sup>226</sup> Notably, 'The Future We Want' also affirms the importance of human rights<sup>227</sup> and of the UNFCCC,<sup>228</sup> and notes the importance of technology and its transfer and closing energy gaps.<sup>229</sup>

Sustainable development and human rights continued together in the 2015 'Transforming our World: the 2030 Agenda for Sustainable Development', setting out 'a plan for people, planet and prosperity', which was

<sup>218</sup> See <http://therightsofnature.org/universal-declaration/> (Rights of Mother Earth) accessed 7 January 2019. See also Cormac Callinan, *Wild Law: A Manifesto for Earth Justice* (2nd ed) (Green Books 2011) Appendix 192–195.

<sup>219</sup> Rights of Mother Earth, para 1.

<sup>220</sup> Rights of Mother Earth, preamble para 2.

<sup>221</sup> Rights of Mother Earth, art 2(1).

<sup>222</sup> Rights of Mother Earth, art 3(2)(f).

<sup>223</sup> See website <https://sustainabledevelopment.un.org/rio20> accessed 7 January 2019. For fundamental criticism of the ongoing focus on the market in these discussions, S Adelman, 'Rio+ 20: sustainable injustice in a time of crises' (2013) 4(1) *Journal of Human Rights and the Environment* 6.

<sup>224</sup> See webpage <https://sustainabledevelopment.un.org/futurewewant.html> accessed 8 January 2019.

<sup>225</sup> The Future We Want, para 1.

<sup>226</sup> The Future We Want para 39.

<sup>227</sup> The Future We Want, para 9.

<sup>228</sup> The Future We Want, para 17.

<sup>229</sup> The Future We Want, paras 48, 58, 65, 72, 73, 270, 271, 274.

adopted by all UN member states.<sup>230</sup> Operationally, this is to be delivered through its core – the sustainable development goals (SDGs).<sup>231</sup> These 17 SDGs include affordable and clean energy (including ensuring access to affordable, reliable, sustainable and modern energy for all);<sup>232</sup> climate action (including taking urgent action to combat climate change and its impact);<sup>233</sup> building resilient infrastructure (promoting inclusive and sustainable industrialisation and fostering innovation);<sup>234</sup> and a partnership for delivering the goals.<sup>235</sup> These SDGs do not impose obligations on states in contrast to the human rights treaties and TRIPS discussed above. Yet they form an important part of the landscape and will be referred to throughout this book.

From the technology perspective, a Technology Facility Mechanism is to be established to facilitate meeting the SDGs.<sup>236</sup> Continuing the emerging theme, the 2030 Agenda does not engage directly with IP save in relation to patents and health.<sup>237</sup> There has been some engagement at WIPO regarding the implementation of the SDGs in respect of WIPO Green and climate change.<sup>238</sup> More radically and continuing the Earth Charter theme, there are views that the SDGs should be reframed from the perspective of ecological integrity, which would disrupt the present focus on humans and property.<sup>239</sup>

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<sup>230</sup> United Nations General Assembly Resolution: Transforming our world: the 2030 Agenda for Sustainable Development (21 October 2015) A/RES/70/1 (2030 Agenda), and preamble para 1.

<sup>231</sup> See website <https://sustainabledevelopment.un.org/?menu=1300> accessed 7 January 2019 (SDGs).

<sup>232</sup> SDG 7.

<sup>233</sup> SDG 13.

<sup>234</sup> SDG 9.

<sup>235</sup> SDG 17.

<sup>236</sup> 2030 Agenda paras 17.6–8, 70; see Statement by 10-Member Group to Support Technology Facilitation Mechanism (4 June 2016) <https://sustainabledevelopment.un.org/index.php?page=view&type=255&nr=21201&menu=35> with a multi-stakeholder group appointed in 2018, see <https://sustainabledevelopment.un.org/?menu=2059&nr=1465&page=view&type=230> both accessed 8 January 2019.

<sup>237</sup> 2030 Agenda, para 3.b.

<sup>238</sup> WIPO CDIP 19/6 (March 2017) and WIPO CDIP 21/10 (March 2018) paras 6–8, 17, 24, 29 32–35.

<sup>239</sup> Rakhyun E Kim and Klaus Bosselmann, ‘Operationalizing Sustainable Development: Ecological Integrity as a Grundnorm of International Law’ 2015 24(2) *Review of European Comparative and International Environmental Law* 194 and see Bosselmann n20, 29–32, 37–53 referring notably to the

An integrated approach, considering areas of law together, is also seen to an extent in relation to the Paris Agreement. 2015 saw a Declaration on Human Rights and Climate Change prepared by activists and scholars, in anticipation of the Paris meeting.<sup>240</sup> The Declaration states that ‘human rights and a profound commitment to climate justice are interdependent and indivisible’;<sup>241</sup> and ‘all human beings have the right to investments in adaptation and mitigation to prevent the deleterious consequences of anthropogenic climate change’.<sup>242</sup> The Paris Agreement itself acknowledges in the preamble that climate change is a common concern of humankind; and that parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, as well as intergenerational equity.<sup>243</sup> A draft of the Paris Agreement did refer to human rights in the body but this was not agreed for the final version. It has been argued that more could have been done in this respect, particularly for communities in low-lying coastal areas.<sup>244</sup> Yet there is also the view that the inclusion, such as it is, is a positive and a starting point;<sup>245</sup> and that more of a focus on human rights in the Paris Agreement could have detracted from the goal of achieving agreement regarding reduction of emissions.<sup>246</sup>

The Paris Agreement preamble does also refer to sustainable development.<sup>247</sup> In its text, the Paris Agreement provides that encouraging, accelerating and enabling innovation is critical for a response to climate change and promoting sustainable development.<sup>248</sup> Indeed, the Paris Agreement has been argued to have sustainable development dimensions

Planetary Integrity Project, see <http://planetaryboundariesinitiative.org/2016/10/13/pbi-launches-planetary-integrity-project-pip/> accessed 8 January 2019.

<sup>240</sup> GNHRE, Declaration on Human Rights and Climate Change <http://gnhre.org/declaration-human-rights-climate-change/> accessed 8 January 2019 (DHRCC).

<sup>241</sup> DHRCC, principle 1(1).

<sup>242</sup> DHRCC, principle 1(6).

<sup>243</sup> Paris Agreement, para 11 preamble.

<sup>244</sup> Sam Adelman, ‘Human Rights in the Paris Agreement: Too Little, Too Late?’ 2018 7(1) *Transnational Environmental Law* 17–36 (Adelman), 26–27, 36; Annalisa Savaresi, ‘The Paris Agreement: A New Beginning?’ (2016) 34(1) *Journal of Energy and Natural Resources Law* 16, 24–25.

<sup>245</sup> Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment (February 2016) A/HRC/31/52, para 22.

<sup>246</sup> Adelman n244, 27.

<sup>247</sup> Paris Agreement, para 8 preamble.

<sup>248</sup> Paris Agreement, art 10(5).

throughout, particularly in its engagement with technology, and its bottom-up and collaborative approach to meeting goals.<sup>249</sup> Finally and notably, the Paris Agreement refers to the importance of Mother Earth and of the integrity of all ecosystems.<sup>250</sup>

It is also notable that 2015, in parallel with the Paris Agreement and the SDGs, gave rise to the International Energy Charter.<sup>251</sup> This non-binding declaration<sup>252</sup> recognises the efforts by all countries to address sustainable development;<sup>253</sup> refers to the recent developments at the time at the UNFCCC,<sup>254</sup> and to agreement in the Charter to promote exchange of technology in the fields of energy production and efficient and clean use of energy.<sup>255</sup> This Charter does refer to IP, by providing that signatories will ensure that international rules on protection of IP are respected.<sup>256</sup> The potential for the other goals addressed to conflict with IP is not recognised.

## Reflections on the Deepened Problem

### The impact of the relationship: a practical view

The interlinked legal landscape set out between IP and technology-based responses to climate change has been seen to be wide and evolving. The discussion has noted the potential for a collision between the rights which could be conferred on the IP owner under TRIPS, the obligation of a state to bring about technology transfer under the Paris Agreement, and state responsibilities regarding the human right to share in the benefits of scientific progress and decisions in relation to the SDGs. Sometimes this potential is acknowledged, as seen in the Special Rapporteur's challenge to IP. Sometimes it is not, as can be seen from the lack of direct

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<sup>249</sup> Marie-Claire Cordonier Segger, 'Advancing the Paris Agreement on Climate Change for Sustainable Development' 2016 5(2) *Cambridge Journal of International and Comparative Law* 202–237, 207, 210, 211, 212, 213, 215, 216 referring to arts 4, 6, 7, 9, 10.

<sup>250</sup> Paris Agreement, para 13 of preamble.

<sup>251</sup> Via <https://energycharter.org/process/international-energy-charter-2015/overview/> accessed 6 July 2019 (IEC).

<sup>252</sup> IEC, para 7 preamble.

<sup>253</sup> IEC, para 10 preamble.

<sup>254</sup> IEC, Annex para 8 refers to Cancun Agreement of UNFCCC; see n85 above.

<sup>255</sup> IEC, Title II art 6.

<sup>256</sup> IEC, Title II preamble last para.

engagement with IP in the climate change framework and in the lack of acknowledgement of problems with IP in the International Energy Charter.

It can be suggested that this legal position does not matter. There have been valuable steps taken under the umbrella of the climate change agreements and their associated organisations.<sup>257</sup> In particular, there has been activity under the Technology Mechanism, providing access to expertise, information and technical assistance, fostering collaboration across country, business and public sector organisations, and providing technology needs assessments.<sup>258</sup> One can also point to an EU Strategic Energy Technology Plan to accelerate development and deployment of low carbon technology and bringing it to market.<sup>259</sup> This sees patenting levels and trends as key performance indicators.<sup>260</sup> And again, in a reminder that responses to climate change can go much wider than the technology and human-based activities discussed so far, the EU has taken steps to reduce emissions through market-based cap and trade schemes.<sup>261</sup>

### **The impact of the relationship: enforcement, interpretation and pluralism**

Yet even with these developments, it does not seem wise to ignore the potential for legal conflict and also for synergy between IP and climate change obligations. The choices made by states in respect of IP rights can be an important part of their decision making. States could create IP laws which enabled wider use of technologies to respond to climate change. Indeed, some countries have introduced compulsory licensing (forced

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<sup>257</sup> See Bodansky n27, 17–26.

<sup>258</sup> UNFCCC, ‘Technology Mechanism’ webpage <http://unfccc.int/ttclear/support/technology-mechanism.html>, accessed 8 January 2019.

<sup>259</sup> European Commission, Strategic Energy Technology Plan <http://ec.europa.eu/energy/en/topics/technology-and-innovation/strategic-energy-technology-plan> accessed 8 January 2019.

<sup>260</sup> Commission Communication, ‘Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation’ C(2015) 6317 final 15 September 2015, art 2.2.1–3, para 9.

<sup>261</sup> European Commission, ‘EU Emissions Trading System (EU ETS)’ [https://ec.europa.eu/clima/policies/ets\\_en](https://ec.europa.eu/clima/policies/ets_en); David Popp and Antoine Dechezlepretre, ‘Fiscal and Regulatory Instruments for Clean Technology Development in the European Union’ (2015) CESifo Working Paper No 5361. The author had the privilege of exploring these issues at ‘Learning by Doing in Global Carbon Markets’ (12 June 2015) at the University of Edinburgh and is grateful to all participants.

sharing) of IP rights for environmental protection, including to deal with emergencies and permitted government use regarding environmental conservation and preservation.<sup>262</sup> A state could be bold and do more. It could provide that it is not an infringement of IP if the activity will have a significant positive impact on addressing climate change. One could argue that this could be consistent with the flexibilities set out in TRIPS.

This is a key issue as the WTO provides a robust dispute settlement provision. Through this, one state can argue that another has failed to meet its obligations.<sup>263</sup> Complaints must be made by states – often done after pressure is placed by large companies on their home government.<sup>264</sup> If, say, the UK<sup>265</sup> is then found to have breached its obligations under TRIPS, the UK could be subject to trade sanctions from the complaining state. This contrasts with the more monitoring and supporting approach to interpretation and compliance which applies to the human rights and climate change landscape discussed.<sup>266</sup>

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<sup>262</sup> Eg Poland, Republic of Korea, Bosnia and Herzegovina, and Croatia, see consideration in WIPO Standing Committee on the Law of Patents SCP/21/4 Rev 3 November 2014, p6 note 30, p15 notes 102, 103, 106 and regarding government use see consideration in WIPO Standing Committee on the Law of Patents SCP/21/5 Rev 7 November 2014 Kenya and Portugal p4 note 23 and Thailand p4 note 24.

<sup>263</sup> TRIPS, art 64 regarding dispute settlement and Annex 2, WTO Dispute Settlement Understanding.

<sup>264</sup> Gregory C Shaffer, *Defending Interests: Public-Private Partnerships in WTO Litigation* (Brookings Institution Press 2003).

<sup>265</sup> Complaint at the time of writing would be against the EU, pursuant to Decision 94/800/EC of 22 December 1994 concerning matters within its competence of the Uruguay Round OJ 1994 L 336/01, and eg WTO DSS 135 *European Communities – Measures Affecting Asbestos*.

<sup>266</sup> See Rio Declaration, principle 26; Agenda 21, para 39.10; UNFCCC, art 14; CBD, art 27; Kyoto Protocol as added to by Marrakesh Accords 2001 24/CP.7 FCCC/CP/2001/13/Add.3, p64, art 24; Paris Agreement, art 2(1)(a), 15, 103, 104; Optional Protocol to ICCPR 1976, UNOHCHR, Human Rights Committee <https://www.ohchr.org/en/hrbodies/ccpr/pages/ccprindex.aspx>; Optional Protocol to ICESCR 2008 and Committee on Economic, Social and Cultural Rights <https://www.ohchr.org/en/hrbodies/ccpr/pages/ccprindex.aspx>, both accessed 8 January 2019; and discussion in Jutta Brunnee, 'The Kyoto Protocol: A Testing Ground for Compliance Theories?' (2003) 63(2) *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht* (Heidelberg Journal of International Law) 255; Ristead de Paor, 'Climate Change and Arbitration: Annex Time Before There Won't Be a Next Time' 2017 8(1) *Journal of International Dispute Settlement* 179; Sebastian Oberthur, 'Compliance under the Evolving Climate Change Regime' in Carlane n3.

There have been some WTO dispute settlement actions in respect of TRIPS, although not related to climate change.<sup>267</sup> Decisions have been made, however, on other WTO bases regarding changes to regulation of gasoline by the USA,<sup>268</sup> and Indian restrictions on foreign operators in the solar cell market.<sup>269</sup> So there is a clear possibility of a WTO dispute settlement action if a state chooses to take a more radical approach to IP and a technology-based response to climate change. On this it is important to note that decisions made to date in IP cases have dismissed early fears that decisions would necessarily be reached favouring more protection of IP.<sup>270</sup> Further, WTO dispute settlement has provided a basis for valuable consideration of what regard should be had to other laws in determining the proper scope of obligations under TRIPS and its flexibilities. Strong arguments have been advanced such that pursuant to the Vienna Convention on the Law of Treaties, there could be regard to climate change and to human rights.<sup>271</sup> This would be highly relevant here regarding the proposed new limits on IP rights.

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<sup>267</sup> WTO DS 114 *Canada – Patent Protection of Pharmaceutical Products*; WTO DS 160 *United States – Section 110(5) of US Copyright Act*; WTO DS 542 *China – Certain Measures Concerning the Protection of Intellectual Property*; WTO DS 526 *United Arab Emirates – Measures Relating to Trade in Goods and Services, and Trade-Related Aspects of Intellectual Property*.

<sup>268</sup> WTO DS 2 *United States – Standards for Reformulated and Conventional Gasoline*.

<sup>269</sup> WTO DS 456 *India – Certain Measures Relating to Solar Cells and Solar Modules*.

<sup>270</sup> See Joost Pauwelyn, 'The Dog that Barked that Didn't Bite: 15 Years of Intellectual Property Disputes at the WTO' 2010 1(2) *Journal of International Dispute Settlement* 389; Wilfred J Ethier, 'Intellectual Property Rights and Dispute Settlement in the World Trade Organization' in Maskus/Reichman n148 and Henning Grosse Ruse-Khan, 'A Pirate of the Caribbean? The Attractions of Suspending TRIPS Obligations' 2008 11(2) *Journal of International Economic Law* 313.

<sup>271</sup> Building on art 31; See eg Eirik Bjorge, *The Evolutionary Interpretation of Treaties* (Oxford University Press 2014); Gabrielle Marceau, Arnau Izaguerri and Vladyslav Lanovoy, 'The WTO's Influence on Other Dispute Settlement Mechanisms: A Lighthouse in the Storm of Fragmentation' 2013 47(3) *Journal of World Trade* 481; Frankel n138; Wei Zhuang, *Intellectual Property Rights and Climate Change. Interpreting the TRIPS Agreement for Environmentally Sound Technologies* (Cambridge University Press 2017); Martijn Wilder Am and Lauren Drake, 'International Law and Renewable Energy Sector' in Carlane n3, 367–369; Abbe EL Brown, *Intellectual Property, Human Rights and Competition: Access to Essential Innovation and Technology* (Edward Elgar Publishing 2012) ch 7.

International law scholarship provides further contributions. There is an ongoing body of work at international level regarding fragmentation and interaction,<sup>272</sup> including the deliberations of the International Law Commission.<sup>273</sup> One theme is regime shifting – the movement of issues from one international forum to another and possible consequences of this, including through different priorities and forms of enforcement.<sup>274</sup> This could cover obligations on climate change and technology transfer being in the UNFCCC rather than TRIPS, or whether it is appropriate for human rights to be included in the Paris Agreement, as discussed above. Further, it has been argued that there should be a meta-rule of integration of IP with other fields of law, which is able to accommodate different relationships and linkages within the pluralism of legal orders.<sup>275</sup> Legal pluralism is ‘usually taken to imply more than just a plurality of laws; it can include situations in which two or more legal systems coexist in the same societal field, sometimes in a contradictory way, in which each may have equally plausible claims to authority’.<sup>276</sup> A frequent example is the interrelationship between indigenous and colonial law.<sup>277</sup>

These issues at international level are important in themselves. Yet it is through activity at national level where the international obligations discussed will be met (or not) and where the goals will be delivered (or

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<sup>272</sup> Margaret A Young, ‘Introduction: The Productive Friction Between Regimes’ and Gunther Teubner and Peter Korth, ‘Two Kinds of Legal Pluralism: Collision of Transnational Regimes in the Double Fragmentation of World Society’ both in Young n94; Andrew Lang, ‘The Role of the International Court of Justice in a Context of Fragmentation’ (2013) 62(4) *International and Comparative Law Quarterly* 777; Margaret A Young, ‘Climate Change Law and Regime Interaction’ (2011) 2 *Climate Change Law Review* 147; Yoshiko Naiki, ‘Trade and Bioenergy: Explaining and Assessing the Regime Complex for Sustainable Bioenergy’ 2016 27(1) *European Journal of International Law* 129; Paul Schieff Berman *Global Legal Pluralism – A Jurisprudence of Law* (Cambridge University Press 2012).

<sup>273</sup> UN A/CN.5/L.682 (April 2006).

<sup>274</sup> Laurence R Helfer, ‘Regime Shifting: The TRIPs Agreement and the New Dynamics of International Intellectual Property Law Making’ 2004 (29) *Yale Journal of International Law* 1; Andrew Lang, ‘Legal Regimes and Professional Knowledge: The Internal Politics of Regime Definition’ in Young n94.

<sup>275</sup> Henning Grosse Ruse-Khan, *The Protection of Intellectual Property in International Law* (Oxford University Press 2016).

<sup>276</sup> Sionaidh Douglas-Scott, *Law After Modernity* (Hart 2013) 385.

<sup>277</sup> See eg Sally Engle Merry, ‘Legal Pluralism’ (1988) 22(5) *Law and Society Review* 869; Franz von Benda-Beckmann, ‘Comment on Merry’ (1988) 22(5) *Law and Society Review* 897; Kwamena Bentsi-Enchill, ‘The Colonial Heritage of Legal Pluralism’ (1969) 1 *Zambia Law Journal* 1.

not). Accordingly, it is at national level that the intersection between different fields is really key. The discussion in this chapter of the intersections, and its limits, between IP and climate change, and the relevance to this of human rights and sustainable development, suggests that there is a place for a pluralist approach to be explored here. This could lead to pluralism's 'propensity toward equal recognition of different and diverse constituencies and their corresponding legal regimes and ... a general willingness to recognize and embrace the emergence of new such constituencies and regimes'.<sup>278</sup>

The exploration of intersections at international level just seen is not, however, mirrored at national level.<sup>279</sup> This book will argue that there are few effective means by which different legal fields can intersect in practice at national level. Accordingly, national laws – of IP, of climate change – can remain in parallel in terms of legislation and policy action. This could lead in turn to the international goals and obligations not being achieved and to the international activity discussed so far being negated at a practical level. Addressing this is the focus and contribution of this book.

## SETTING PARAMETERS: NEW COMPLEMENTARY APPROACHES TO IP AND TECHNOLOGY-BASED RESPONSES TO CLIMATE CHANGE

### A UK Focus

As indicated, the book will focus on the UK. This is a country which is legally sophisticated, is a member of climate change and IP international treaties and is taking action to encourage innovation and respond to climate change. Taking the UK as a base also raises other complexities and barriers regarding human rights and climate change. The UK is

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<sup>278</sup> Neil Walker, 'Beyond Boundary Disputes and Basic Grids: Mapping the Global Disorder of Normative Orders' (2008) 6 *International Journal of Constitutional Law* 373, 391.

<sup>279</sup> Although valuable scholarship argues that developments at national level (for example, constitutional constraints) can have an impact on a state's approach in international negotiations, and leading in turn to international change: Alison Slade, 'National Courts and Their Role in the Development of International Intellectual Property Law and Policy – with Reflections on India' in Susy Frankel (ed) *Is Intellectual Property Pluralism Functional?* (Edward Elgar Publishing 2019).

legally in a time of flux, given political uncertainty as to the future of human rights and its forthcoming exit from the European Union.<sup>280</sup> The book will engage with these points so far as relevant but will proceed from the premise that the UK will continue to have obligations under TRIPS and under the Paris Agreement, which will be key features of the rest of the book.

Within the UK, some further issues arise which shed interesting light on the substantive points. At the time of writing in 2019, some powers are devolved to the Scottish Parliament. These do not include IP, but they do include climate change;<sup>281</sup> indeed there are some key differences in the climate change legislation passed at the Scottish Parliament and UK legislation. Human rights also have a different place in the legislative responsibilities of the Scottish Parliament from those of the UK.<sup>282</sup>

### **Trade and Investment Agreements and Investor Disputes: Barrier and Opportunity**

Perhaps rather ironically, when one seeks to explore the intersection between laws at national level, one should also look to another structure of law and dispute resolution – trade and investment agreements. Agreements such as the Comprehensive Economic and Trade Agreement between Canada and the EU<sup>283</sup> increasingly have, in addition to state/state enforcement possibilities, provision for investor–state dispute settlement (ISDS).<sup>284</sup> Broadly, this means that if a state takes a step in legislation, policy making or through courts which an investor considers to be inconsistent with the state’s commitments to investors from the other country under the agreement, then the investor may directly make a claim against the state.

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<sup>280</sup> From which some key present national laws stem, see Sanja Bogojevic, ‘Climate Change Law and Policy in the European Union’ in Carlane n3; European Commission, Energy Efficiency <https://ec.europa.eu/energy/en/topics/energy-efficiency> and House of Commons, ‘Brexit: energy and climate change’ (9 November 2018) both accessed 8 January 2019.

<sup>281</sup> Scotland Act 1998, schedule 5 lists those matters which are reserved to Westminster – see consideration of this issue from the constitutional perspective in Abbe Brown, ‘Sustainability Through an Integrated Approach to Decision Making? A Law and Regulation Case Study’ 2016 30(3) *International Review of Law, Computers & Technology* 131.

<sup>282</sup> See Scotland Act 1998, s29.

<sup>283</sup> See [http://ec.europa.eu/trade/policy/in-focus/ceta/index\\_en.htm](http://ec.europa.eu/trade/policy/in-focus/ceta/index_en.htm) accessed 9 January 2019 (CETA).

<sup>284</sup> Eg CETA, chapter 8, section F.

There are examples of IP rights being stated in agreements to be a protected (or covered) investment.<sup>285</sup> In the light of this, actions have been raised regarding national legislation requiring plain packaging of tobacco, and regarding new approaches taken by national courts to patentability tests.<sup>286</sup> As a matter of principle, this new forum for dispute resolution, enabling a private entity to challenge a state, has been much criticised.<sup>287</sup> For present purposes, however, this pathway is attractive. ISDS already provides an elegant means of bridging the divide between private IP rights and state responsibilities seen in this chapter. It would be highly effective for the goals of this book if ISDS could be evolved to enable decision makers in disputes involving the position taken by the state acting against climate change, and the IP owner concerned at the impact on their exclusive rights, to consider all relevant factors in a holistic manner. This could also sit alongside arguments that investment agreements could and should take approaches which are more consistent with addressing climate change<sup>288</sup> and human rights.<sup>289</sup>

## ARGUMENTS AND STRUCTURE OF THE BOOK

This book will explore the complex relationship between IP and climate change through, in particular, technology-based reductions in emissions and with reference to human rights and sustainable development laws. It will do so in the context of the UK having chosen to commit to potentially conflicting treaties and international goals – see Table 1A.1 at

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<sup>285</sup> Eg CETA, chapter 8, section A, art 8.1.

<sup>286</sup> *Philip Morris v Oriental Republic of Uruguay* ICSID Case no ARB/10/7 and *Canada v Eli Lilly* UNCT/14/2 ICSID.

<sup>287</sup> See eg Pratyush Nath Upreti, 'Litigating Intellectual Property Issues in Investor-State Dispute Settlement: A Jurisdictional Conflict' 2016 11(7/8) *Global Trade & Customs Journal* 343; Henning Grosse Ruse-Khan, 'Litigating Intellectual Property Rights in Investor-State Arbitration: From Plain Packaging to Patent Revocation' (8 July 2014). Working Paper No. 2014-21; Max Planck Institute for Innovation & Competition Research Paper No. 14-13; University of Cambridge Faculty of Law Research Paper No. 52/2014. Available at SSRN: <http://ssrn.com/abstract=2463711> accessed 16 May 2019.

<sup>288</sup> UNCTAD, 'World Investment Report 2010: Investing in a Low Carbon Economy' [http://unctad.org/en/Docs/wir2010\\_en.pdf](http://unctad.org/en/Docs/wir2010_en.pdf) accessed 9 January 2019.

<sup>289</sup> Regarding ISDS and human rights, see Jose E Alvarez, 'Beware Boundary Crossings' in Tsvi Kahana and Anat Scolnicov (eds) *Boundaries of State, Boundaries of Rights: Human Rights, Private Actors, and Positive Obligations* (Cambridge University Press 2016); and Reid n156.

the end of this chapter – and will discuss the different national laws which were passed alongside each other. The book will explore how the relationship across these different but connected areas of law can be managed equitably, fairly and coherently from a national perspective in respect of judicial decision making, legislation and, to an extent, policy. The book will develop means to prevent national laws being rendered, unintentionally, much less relevant and effective by other national laws and provide means to minimise challenge to this at ISDS level.

Accordingly, the rest of this book is structured as follows. Chapter 2 will review the legal frameworks and policy action in the UK which is relevant to IP and to technology-based responses to climate change, particularly aimed at the reduction of greenhouse gas emissions. Chapter 3 analyses the actual and potential bases for legal conflict and alignment in respect of IP, technology and climate change in the UK context, with reference to legislation, theory and philosophy. Complementing this, Chapter 4 develops hypothetical case studies which will be explored throughout the rest of the book. Chapter 5 discusses how courts in Scotland and in England can at present address legal issues which could arise from the case studies. It evaluates engagement with international treaties and instruments, established and evolving principles of statutory interpretation, private international law, competition law and human rights. The outcomes which could be delivered are argued to be inadequate and so Chapter 6 develops new approaches within and for court actions. It builds on jurisprudential and statutory interpretative approaches, including with regard to pluralism and to the different philosophical bases in respect of IP and responding to climate change. Shifting focus, Chapter 7 explores arguments for new courts and rules of process and then develops proposals for legislation, which would enable more integrated delivery of remedies by courts. It also seeks to reduce the need for the new court-based arguments, through a more holistic approach to the preparation of legislation and policy. Chapter 8 develops new model clauses for ISDS as a new way of bridging the public/private split which runs through this book. Finally, there are Closing Thoughts.

This book builds on scholarship arguing that climate change is legally disruptive, with ‘existing legal doctrines and frameworks ... forced to confront, respond, and perhaps even evolve to respond to climate change, beyond the application and incremental development of existing rules and doctrines’.<sup>290</sup> Regarding the possible introduction of a greater role of IP

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<sup>290</sup> Elizabeth Fisher, Eloise Scotford and Emily Barritt, ‘The Legally Disruptive Nature of Climate Change’ 2017 80(2) *Modern Law Review* 173, 174.

into climate change law and action, the book builds on the following words, written in the context of linkages between private international law and public international law:

taking a strictly public law-inspired perspective we will have good reasons for concern over the accountability, overall coherence and legitimacy of the range of institutions and actors, formal and informal, that characterize contemporary global governance. However it may be that taking a private law-inspired perspective allows us to be more comfortable with such normative and institutional plural whilst also providing a lens through which a more decentred and transparent form of order can be achieved.<sup>291</sup>

The book is not about determining that one goal or set of laws is invariably more important than the other. It is about creating, at national and at ISDS level, pathways and argument strands along which the relationship between different laws can be explored in individual cases. This will reflect, and in some cases challenge, the international activity discussed above. Without such initiatives, existing private power bases will continue – with unexplored and unintended consequences for public goals.

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<sup>291</sup> Richard Collins and Maria Mercedes Albornoz, 'On the Dwindling Divide between the Public and Private: The Role of Soft Law Instruments in Global Governance' in Veronica Ruiz Bou-Nigm, Kasey McCall-Smith and Duncan French (eds) *Linkages and Boundaries in Private and Public International Law* (Hart 2018) 113.

## APPENDIX

Table 1A.1 *Treaties*

International climate change, sustainable development	International IP/trade	Human rights
	Paris from 1883	
	Berne from 1886	
		ECHR 1950
		ICESCR, ICCPR 1966
	Stockholm amendment to Berne 1967	
Stockholm Declaration, Club of Rome, 1972		
World Commission 1987		
Earth Summit 1992		
	TRIPS 1994	
Kyoto 1997		
		EU Charter 2000
Bali Plan 2007		
Nagoya 2010		
2030 SDG Agenda 2015		
Paris 2015		
International Energy Charter 2015		
	CETA signed 2017	