

CASE NOTE

The State of the Netherlands *v.* Urgenda Foundation: *Ruling of the Court of Appeal of The Hague (9 October 2018)*

Benoit Mayer*

Abstract

On 9 October 2018, the Court of Appeal of The Hague (the Netherlands) upheld the District Court's decision in the case of *Urgenda*, thus confirming the obligation of the Netherlands to reduce its greenhouse gas (GHG) emissions by at least 25% by 2020 compared with levels in 1990. This case raised some of the thorniest issues in climate law. As the Netherlands is responsible for only a tiny fraction of global GHG emissions, is it right for a court to hold that a national emissions reduction mitigation target is necessary to prevent dangerous climate change and its impact on human rights? If so, how can this target be determined? The District Court and the Court of Appeal of The Hague have provided inspiring responses, although they are perhaps not entirely convincing.

Keywords: *Urgenda*, Climate litigation, Climate change mitigation, Greenhouse gas emissions reduction, The Netherlands, Public interest litigation

1. INTRODUCTION

Urgenda was established in 2008 as a foundation in order to 'stimulate and accelerate the transition processes to a more sustainable society, beginning in the Netherlands'.¹ In November 2012, Urgenda requested the State of the Netherlands (the State) to adopt a national climate change mitigation target of 40% emissions reduction by 2020 compared with levels in 1990.² The request was denied,³ and Urgenda brought

* The Chinese University of Hong Kong Faculty of Law (Hong Kong).
Email: bmayer@cuhk.edu.hk.

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¹ By-laws of Urgenda, Art. 2, as cited in the District Court of The Hague (DC), *Urgenda Foundation v. The State of the Netherlands*, Case No. C/09/456689 / HA ZA 13-1396, 24 June 2015, para. 2.2, available at: https://elaw.org/system/files/urgenda_0.pdf (*Urgenda 1*). Quotations are from the translation provided by the Court.

² *Urgenda 1*, para. 2.6.

³ See the letter of the State Secretary for Infrastructure and the Environment of 11 Dec. 2012, cited *ibid.*, para. 2.7.

the case to court on its behalf and on behalf of 886 individuals. The District Court of the Hague (DC), deciding the case at first instance on 24 June 2015, ordered the State to reduce the greenhouse gas (GHG) emissions of the Netherlands by at least 25% below the level of 1990 by the end of 2020.⁴ The State appealed on 29 grounds, and Urgenda cross-appealed on one ground. In its ruling of 9 October 2018, the Court of Appeal of The Hague (CA) upheld the judgment of the DC against the State's challenges but, following Urgenda's ground of cross-appeal, based its decision on slightly different reasoning.⁵ Following the decision of the CA, the State announced that it would bring cassation proceedings for reasons of principle regarding the extent of judicial power,⁶ while striving to adopt additional measures to achieve the 25% emissions reduction target by 2020.⁷

As well as its obvious significance for climate law in the Netherlands, the *Urgenda* case raises questions of paramount importance from comparative and international perspectives. Building on the European Convention on Human Rights and Fundamental Freedoms (ECHR)⁸ in a way that could certainly be replicated using other human rights treaties in other regions of the world, the case illustrates the relevance of human rights as the source of an obligation to mitigate climate change. Overall, the courts engage with the thorny issue of determining the obligation of a state in relation to a global problem to which it contributes only marginally – the current GHG emissions of the Netherlands were estimated to represent less than 0.5% of global GHG emissions.⁹ In particular, the two judgments seek to establish methodologies to quantify the obligation of a state to reduce its GHG emissions within a particular period of time based on science, principles of fairness, and prior statements made by the Netherlands. The approach adopted by each court is groundbreaking but is certainly not free from criticism; lessons can be drawn to allow for a more consistent and persuasive approach in future cases.¹⁰

⁴ *Ibid.*, para. 5.1.

⁵ Court of Appeal of The Hague (CA), *The State of the Netherlands (Ministry of Infrastructure and the Environment) v. Urgenda Foundation*, C/09/1456689 / HA ZA 13-1396, 9 Oct. 2018, available at: <https://uitspraken.rechtspraak.nl/inziendocument?id=ECLI:NL:GHDHA:2018:2610> (*Urgenda* 2). Quotations are from the translation provided by the Court.

⁶ See Government of the Netherlands, 'State to Bring Cassation Proceedings in Urgenda Case', 16 Nov. 2018, available at: <https://www.government.nl/latest/news/2018/11/16/state-to-bring-cassation-proceedings-in-urgenda-case>.

⁷ Statement by Ivo de Zwaan on behalf of the Netherlands during the Multilateral Assessment of the Third Biennial Report of the Netherlands, held in Katowice (Poland), 7 Dec. 2018, available at: <https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/national-communications-and-biennial-reports-annex-i-parties/multilateral-assessment/multilateral-assessment-of-third-biennial-reports/third-multilateral-11>. Additional measures under consideration include the anticipated shutdown of a coal-fired power plant.

⁸ Rome (Italy), 4 Nov. 1950, in force 3 Sept. 1953, available at: <http://www.echr.coe.int/pages/home.aspx?p=basictexts>.

⁹ See n. 106 below.

¹⁰ Numerous pending cases raise similar questions: e.g., *ENvironnement JEUnesse v. Canada*; *VZW Klimaatzaak v. Belgium*; *Klimaatzaak v. Belgium*; and *Ali v. Pakistan*. Information on these and other cases can be found on Climate Change Litigation Databases developed by the Sabin Center for Climate Change Law at Columbia Law School (United States), available at: <http://columbiaclimatelaw.com>; and in the database of 'Climate Change Law of the World', developed by the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science

This case note is organized as follows. Section 2 provides an overview of the case as adjudicated by both courts. Section 3 engages critically with some of the key issues underlying the case, namely the requirements of standing in relation to a global environmental issue, the legal obligation of a state to mitigate climate change, and the determination of the ambit of this obligation based on science, fairness, and the statements previously made by the Netherlands itself. Section 4 concludes with a discussion of the consequences of the case in the context of increasing public interest litigation relating to the failure of governments to mitigate climate change quickly enough.

2. THE CASE

This section presents a brief overview of the context in which the case took place, outlines the judgments of the DC and the CA, and discusses the aftermath of the case in the Netherlands.

2.1. *The Context*

The GHG emissions of the Netherlands are higher than one would expect from a small country with a high-income economy. According to the latest statistics communicated by the Netherlands, the country's GHG emissions amounted to 195 MT CO₂-eq in 2016.¹¹ While this represents a reduction of 12.5% compared with 1990 levels,¹² the rate of per capita GHG emissions in the Netherlands (11.6 T CO₂-eq/year)¹³ remains significantly higher than in most other European Union (EU) Member States.¹⁴ Most of the country's GHG emissions consist of carbon dioxide (CO₂) from the energy sector,¹⁵ a source which has not declined since 1990.¹⁶

The EU, of which the Netherlands is a Member State, has committed to reduce its aggregate GHG emissions by 20% from a 1990 basis by 2020, first as a nationally appropriate mitigation commitment under the Cancún Pledges,¹⁷ and again as a

(United Kingdom), available at: <http://www.lse.ac.uk/GranthamInstitute/climate-change-laws-of-the-world>.

¹¹ United Nations (UN) Climate Change, 'Netherlands National Inventory Report 2018', 13 Apr. 2018, p. 26, available at: <https://unfccc.int/documents/65703>, for data excluding land use, land-use change and forestry (LULUCF). MT CO₂-eq indicates GHG emissions the warming effect of which is equivalent to that of a megatonne of carbon dioxide.

¹² *Ibid.*, p. 28.

¹³ *Ibid.*, pp. 6 and 87.

¹⁴ Per capita emissions in the EU are estimated at 8.4 T CO₂-eq/year in 2016, based on the EU's GHG emissions without LULUCF (reported in UN Climate Change, 'European Union National Inventory Report 2018', 15 May 2018, p. vii, available at: <https://unfccc.int/documents/65886>), and a population of 511.8 million (according to Eurostat, 'Population and Population Change Statistics', July 2017, available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/Population_and_population_change_statistics). See also *Urgenda 2*, para. 26.

¹⁵ Netherlands National Inventory Report 2018, n. 11 above, p. 25 and *passim*.

¹⁶ *Ibid.*, p. 70 (Table 3.1).

¹⁷ See UNFCCC Secretariat, 'Compilation of Economy-wide Emission Reduction Targets to be Implemented by Parties included in Annex I to the Convention' (4–15 June 2014), UN Doc. FCCC/SBSTA/2014/INF.6, para. 11, available at: <https://unfccc.int/sites/default/files/resource/docs/2014/sbsta/eng/inf06.pdf>.

quantified emissions reduction commitment through the Doha Amendment¹⁸ to the Kyoto Protocol.¹⁹ In both instruments, the EU and its Member States have also made a conditional offer to enhance their target to 30% ‘as part of a global and comprehensive agreement’²⁰ – a condition which, in the view of the European Commission, has not materialized.²¹ The *Urgenda* case is concerned with the stringency of mitigation action carried out in the Netherlands with a view to reducing its GHG emissions by 2020. The case is not concerned with emissions reduction commitments applicable after 2020, such as the 2030 target (40% reduction compared with 1990 levels) included in the EU’s Nationally Determined Contribution (NDC)²² under the Paris Agreement.²³

The EU-wide 20% emissions reduction target does not imply a uniform emissions reduction target in every Member State. The EU has long recognized that efforts should be shared among Member States based on ‘the principle of solidarity between Member States and the need for sustainable economic growth across the Community’.²⁴ The EU’s current mitigation efforts consist in part of an EU-wide Emissions Trading Scheme (ETS), first introduced in 2005.²⁵ The ETS covers parts of the energy, industrial and aviation sectors, which together represent about 45% of EU-wide GHG emissions.²⁶ Within these sectors, it is expected that by 2020 the EU ETS will achieve an EU-wide emissions reduction of 21%, compared with 2005 emissions.²⁷ On the other hand, emissions from sectors not covered by the EU ETS are to be addressed by Member States, in part by implementing other EU rules and in

¹⁸ Doha Amendment to the Kyoto Protocol, in Decision 1/CMP.8, ‘Amendment to the Kyoto Protocol pursuant to its Article 3, para. 9 (the Doha Amendment)’ (8 Dec. 2012), UN Doc. FCCC/KP/CMP/2012/13/Add.1, Annex. While the Doha Amendment has not yet entered into force, it was ratified by the EU and its Member States on 21 Dec. 2017.

¹⁹ Kyoto (Japan), 11 Dec. 1997, in force 16 Feb. 2005, available at: <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

²⁰ UNFCCC Secretariat, n. 17 above, para. 12; Doha Amendment, n. 18 above, note 7 under revised Annex B.

²¹ It has repeatedly been pointed out, however, that the EU has no institutional mechanism to assess the fulfilment of the condition associated with its 30% emissions reduction target: see, e.g., UNFCCC Subsidiary Body for Implementation (SBI), 49th Session, ‘Multilateral Assessment Questions and Answers: The European Union’ (Sept.–Nov. 2018), p. 7 (question posed by Brazil), available at: <https://unfccc.int/sites/default/files/resource/EU.pdf>.

²² See Latvia et al., ‘Intended Nationally Determined Contribution of the EU and its Member States’, 6 Mar. 2015, available at: <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Latvia%20First/LV-03-06-EU%20INDC.pdf>.

²³ Paris (France), 12 Dec. 2015, in force 4 Nov. 2016, available at: http://unfccc.int/paris_agreement/items/9485.php.

²⁴ Decision No. 406/2009/EC on the Effort of Member States to Reduce their Greenhouse Gas Emissions to Meet the Community’s Greenhouse Gas Emission Reduction Commitments up to 2020 [2009] OJ L 140/136 (Effort Sharing Decision), recital 8.

²⁵ Directive 2003/87/EC establishing a Scheme for Greenhouse Gas Emission Allowance Trading within the Community and amending Council Directive 96/61/EC [2003] OJ L 275/32.

²⁶ European Commission, ‘7th National Communication & 3rd Biennial Report from the European Union under the UN Framework Convention on Climate Change (UNFCCC)’, Dec. 2017, p. 237, available at: http://unfccc.int/files/national_reports/annex_i_natcom/submitted_natcom/application/pdf/459381_european_union-nc7-br3-1-nc7_br3_combined_version.pdf.

²⁷ Directive 2009/29/EC amending Directive 2003/87/EC so as to Improve and Extend the Greenhouse Gas Emission Allowance Trading Scheme of the Community [2009] OJ L 140/63, recital 5. The year 2005 is used as the baseline in EU climate law because estimates are more accurate than those for 1990.

part through their own national initiatives. To ensure that Member States achieve sufficient emissions reduction in non-ETS sectors for the overall emissions reduction of the EU to comply with its 2020 target, the European Parliament and the Council have defined national targets for reduction of non-ETS emissions through the 2009 Effort Sharing Decision.²⁸ Accordingly, the Netherlands is to achieve at least a 16% reduction by 2020, on a 2005 basis, in non-ETS emissions within its territory.²⁹

As a result of the EU ETS and a range of other measures implemented in the Netherlands, GHG emissions originating from the Netherlands overall have been on a decreasing trend, although the changes have been slow.³⁰ In 2015, when the case brought by Urgenda was first decided by the DC, the government estimated that the Netherlands would have achieved a 14 to 17% emissions reduction by 2020 compared with 1990.³¹ It is noteworthy, however, that this reduction in overall GHG emissions is being realized in large part through a reduction in the emission of GHGs other than CO₂, especially methane from waste,³² while the level of CO₂ emissions overall has remained unchanged since 1990.³³ This suggests that the current trends are related to one-off measures, such as reform of waste management, and that they are not triggered by a process of structural transition towards more sustainable modes of production and consumption.

This, in the view of Urgenda, is highly unsatisfactory. After the government declined to adopt a more ambitious emissions reduction target by 2020, Urgenda sought a ruling from the DC that ‘the State acts unlawfully if it fails to reduce or have reduced the annual GHG emissions in the Netherlands by at least 40% compared to 1990, by the end of 2020’.³⁴ This claim was made on various legal bases, including the international law on climate change (the United Nations Framework Convention on Climate Change (UNFCCC),³⁵ the Kyoto Protocol³⁶ and its Doha Amendment,³⁷ as well as the ‘no-harm’ and the precautionary principles);³⁸ the right to life and to family life as protected under the ECHR;³⁹ the constitutional law obligation of the

²⁸ N. 24 above.

²⁹ *Ibid.*, Annex II.

³⁰ Netherlands National Inventory Report 2018, n. 11 above.

³¹ *Urgenda 1*, para. 4.26 (based on domestic policy documents). See also The Netherlands, ‘Second Biennial Report under the United Nations Framework Convention on Climate Change’, 31 Dec. 2015, p. 54, available at: https://unfccc.int/sites/default/files/the_netherlands_second_biennial_report.pdf (projecting a decrease in GHG emissions of 18% by 2020 (1990 basis) with existing measures, or 19% with additional measures).

³² Netherlands National Inventory Report 2018, n. 11 above, pp. 26 and 63.

³³ Centraal Bureau voor de Statistiek (CBS), ‘CO₂ Emissions in 2017 the Same as in 1990’, 10 Sept. 2018, available at: <https://www.cbs.nl/en-gb/news/2018/37/co2-emissions-in-2017-the-same-as-in-1990>.

³⁴ *Urgenda 1*, para. 3.1(6).

³⁵ New York, NY (US), 9 May 1992, in force 21 Mar. 1994, available at: <http://www.unfccc.int>, in particular Art. 4.2(a) and (b).

³⁶ N. 19 above.

³⁷ N. 18 above.

³⁸ *Urgenda 1*, para. 4.42. See also B. Mayer, ‘The Relevance of the No-Harm Principle to Climate Change Law and Politics’ (2016) 19(1) *Asia Pacific Journal of Environmental Law*, pp. 79–104.

³⁹ N. 8 above, Arts 2 and 8.

State to protect the environment;⁴⁰ and tort law.⁴¹ These arguments were informed by the findings of the Intergovernmental Panel on Climate Change (IPCC), in particular in its Fourth Assessment Report (AR4), on climate change, its impacts, and potential emissions reduction pathways.⁴²

2.2. *The Judgment of the District Court of The Hague*

Having established Urgenda's standing, the DC rejected most of the legal sources Urgenda had invoked. In particular, it stated that the obligations of the Netherlands under international law on climate change are owed to other states, not to individuals or legal persons.⁴³ It interpreted the rights created by the ECHR in the light of its Article 34, which limits access to the European Court of Human Rights (ECtHR) to actual or potential victims of human rights violations, and held that Urgenda had neither claimed to be a victim of such a violation, nor established that any of its 886 individual co-plaintiffs were.⁴⁴ Similarly, the DC declined to interpret the constitutional obligation of the State to protect the environment as a distinct source of obligations of the State towards individuals or legal persons.⁴⁵ However, the DC held that, taken together, these sources of constitutional, European and international law help to determine the content of the duty of care that the State owes to society – including Urgenda – under a provision of the Dutch Civil Code and the doctrine of hazardous negligence.⁴⁶ Accordingly, the DC recognized, in tort law, an obligation for the State 'to take measures in its own territory to prevent dangerous climate change'.⁴⁷

The DC then applied this duty of care on the part of the State to the facts of the case. It noted conclusive evidence of the increasing social and ecological risks associated with climate change if the global average temperature exceeds 2°C above pre-industrial levels,⁴⁸ including their manifestation in the territory of the Netherlands,⁴⁹ and the need for deep cuts in GHG emissions to take place rapidly,

⁴⁰ The Constitution of the Kingdom of the Netherlands (2008), published by the Ministry of the Interior and Kingdom Relations, Constitutional Affairs and Legislation Division in collaboration with the Translation Department of the Ministry of Foreign Affairs, Art. 21, available at: <https://www.government.nl/documents/regulations/2012/10/18/the-constitution-of-the-kingdom-of-the-netherlands-2008> (according to which '[i]t shall be the concern of the authorities to keep the country habitable and to protect and improve the environment').

⁴¹ Burgerlijk Wetboek (Dutch Civil Code), Book 5, Section 37 (prohibition of nuisance).

⁴² See IPCC (B. Metz et al. (eds)), *Climate Change 2007: Mitigation of Climate Change. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2007).

⁴³ *Urgenda 1*, para. 4.42.

⁴⁴ *Ibid.*, para. 4.45. This aspect of the judgment was criticized, among others, in A. Tabau & C. Cournil, 'New Perspectives for Climate Justice: District Court of The Hague, 24 June 2015, Urgenda Foundation versus the Netherlands' (2015) 12(3–4) *Journal for European Environmental & Planning Law*, pp. 221–40, at 229.

⁴⁵ *Urgenda 1*, para. 4.36.

⁴⁶ See Burgerlijk Wetboek, n. 41 above, Book 6, Art. 162. See *Urgenda 1*, n. 1 above, paras 4.46 and 4.55.

⁴⁷ *Urgenda 1*, para. 4.65.

⁴⁸ *Ibid.*, para. 4.14.

⁴⁹ *Ibid.*, para. 4.17.

especially in developed countries, in order to reduce the likelihood of this scenario.⁵⁰ In particular, building on the contribution of the IPCC's Third Working Group (WG3) to AR4, the DC concluded that a reduction in the GHG emissions of Annex I countries⁵¹ of 25–40% by 2020 (from a 1990 basis) should be achieved in order to pursue the objective of holding the increase in global average temperatures below 2°C.⁵² Noting that the specific circumstances of the Netherlands did not justify any lower mitigation efforts than an average Annex I country, the DC concluded that, in the application of its duty of care, the State had to pursue a target of at least a 25% reduction in GHG emissions by 2020 from a 1990 basis.⁵³

2.3. *The Judgment of the Court of Appeal*

The State submitted 29 grounds of appeal against the judgment of the DC, thus, as the CA noted, 'seek[ing] to submit the dispute to the Court in its entirety'.⁵⁴ The CA did not give favourable consideration to any of these grounds. In contrast, it was persuaded by the unique ground raised in Urgenda's cross-appeal relating to the opinion of the DC that Urgenda, considering Article 34 ECHR, cannot rely on Articles 2 and 8 ECHR in these proceedings.⁵⁵ Urgenda submitted that Article 34 ECHR is concerned with conditions of access to the ECtHR – by excluding public interest litigation before that court – rather than the admissibility of claims based on the ECHR before domestic courts.⁵⁶ The CA agreed and admitted that, in Dutch law, public interest litigation could invoke rights guaranteed under the ECHR.⁵⁷

This led the CA to justify the DC's conclusions on an alternative legal basis – namely by interpreting the 'positive obligation [of the State] to take concrete actions to prevent a future violation' of Articles 2 and 8 ECHR.⁵⁸ The CA noted that dangerous climate change would result 'in the serious risk that the current generation of citizens will be confronted with loss of life and/or a disruption of family life',⁵⁹ referring to the rights protected under these two articles. However, like the DC in relation to tort law, the CA recognized that the content of the positive obligation of the Netherlands under the ECHR to prevent a future violation of protected rights could be interpreted in the light of other obligations of the State, including international law on climate change.⁶⁰

⁵⁰ *Ibid.*, para. 4.20.

⁵¹ Annex I of the UNFCCC, n. 35 above, contains a list of developed countries with more stringent obligations under the UNFCCC.

⁵² *Urgenda 1*, para. 4.29.

⁵³ *Ibid.*, para. 5.1.

⁵⁴ *Urgenda 2*, para. 31.

⁵⁵ *Ibid.*, para. 32.

⁵⁶ *Ibid.*, para. 35.

⁵⁷ *Ibid.*, para. 36.

⁵⁸ *Ibid.*, para. 41.

⁵⁹ *Ibid.*, para. 45.

⁶⁰ See, in particular, *ibid.*, para. 63 (on the precautionary principle).

Accordingly, the CA upheld the judgment of the DC,⁶¹ highlighting that ‘the State ha[d] done too little to prevent a dangerous climate change and [was] doing too little to catch up’.⁶² The CA also noted that, as Urgenda had not put forward a ground of cross-appeal against the rejection of a more demanding target, ‘a reduction of more than at least 25% by 2020 [could not] be awarded’⁶³ on appeal.

2.4. *The Aftermath of the Case*

The most recent reports from the Netherlands estimate that by 2016 the country’s GHG emissions had decreased by 12.5% compared with 1990 levels.⁶⁴ This was achieved in part in an artificial way – namely through the application of a new methodology to the inventory of national GHG emissions, which the Netherlands adopted in 2016 in the implementation of international requirements.⁶⁵ Applied retroactively, the new methodology led the Netherlands to estimate higher GHG emissions for 1990 of certain types of GHG – emissions of which have since significantly decreased – and thus to report higher rates of emissions reductions compared with 1990.⁶⁶ All in all, while emissions of methane and some other highly potent GHGs have decreased sharply, the Netherlands’ CO₂ emissions overall have remained stable since 1990.⁶⁷

The latest projections by the Dutch government suggest that the impact of current measures will achieve around a 23% emissions reduction by 2020 (on the 1990 basis), and that additional measures under consideration could bring this rate up to 24%.⁶⁸ As noted emphatically by the CA, however, these projections come with a high degree of uncertainty.⁶⁹ It is unclear whether the Netherlands will genuinely be

⁶¹ Ibid., para. 76.

⁶² Ibid., para. 71.

⁶³ Ibid., para. 75.

⁶⁴ See Netherlands National Inventory Report 2018, n. 11 above, p. 28. See also Centraal Bureau voor de Statistiek (CBS), ‘Greenhouse Gas Emissions Slightly Down in 2017’, 9 May 2018, available at: <https://www.cbs.nl/en-gb/news/2018/19/greenhouse-gas-emissions-slightly-down-in-2017> (for a preliminary estimate of 2017 GHG emissions at 193 MT CO₂-eq, representing a reduction of 13.4% below 1990 emissions as previously reported. All data are without LULUCF).

⁶⁵ See Decision 15/CP.17, ‘Revision of the UNFCCC Reporting Guidelines on Annual Inventories for Parties included in Annex I to the Convention’ (11 Dec. 2011), UN Doc. FCCC/CP/2011/9/Add.2.

⁶⁶ See Netherlands National Inventory Report 2015, 31 Mar. 2016, p. 25, available at: <http://www.pbl.nl/en/publications/greenhouse-gas-emissions-in-the-netherlands-1990%E2%80%932013-national-inventory-report-2015>. The application of the 2006 methodology ascribes a higher global warming potential value to methane, emissions of which have rapidly decreased in the Netherlands since 1990. This was discussed briefly in *Urgenda 2*, paras 21 and 47.

⁶⁷ See, e.g., CBS, n. 33 above.

⁶⁸ UNFCCC Secretariat, ‘Report on the Technical Review of the Third Biennial Report of the Netherlands’, 1 Aug. 2018, UN Doc. FCCC/TRR.3/NLD, p. 18, available at: https://unfccc.int/sites/default/files/resource/trr.3_NLD.pdf (emissions without LULUCF). See also The Netherlands, ‘Third Biennial Report under the United Nations Framework Convention on Climate Change’, 31 Dec. 2017, pp. 67–8, available at: http://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/625803941_netherlands-br3-1-the_netherlands_third_biennial_report_under_the_unfccc.pdf.

⁶⁹ The Netherlands, *ibid.*, p. 85 (noting that GHG emissions in 2020 could range from 163 to 181 MT CO₂-eq (90% reliability interval). This corresponds with a reduction from 19 to 17%. All data are without LULUCF).

able to achieve almost as much emissions reduction in two years as it has in the last 28 years. The Expert Review Team (ERT) which conducted the Technical Review of the Third Biennial Report of the Netherlands in August 2018 rightly noted that '[i]f a domestic target of a 25[%] emission reduction by 2020 below the 1990 level is formally confirmed' – as it was two months later by the CA – 'the Netherlands may face challenges in achieving its domestic target'.⁷⁰ Immediate action is required for the Netherlands to ensure compliance with this target.⁷¹ Absent any mention in the judgments, one would not expect the State to rely on flexibility mechanisms to achieve compliance with its target.

3. DISCUSSION

The judgments of the DC and CA have raised some of the most difficult questions in climate law. Climate change results from GHG emissions occurring in multiple countries over a long period of time. Climate change mitigation requires ambitious efforts to take place concomitantly in multiple countries and pursued over decades. Yet, taken individually in the context of a particular dispute, the GHG emissions occurring within the territory of a country like the Netherlands are small, and incremental efforts to reduce these emissions hardly make any difference at all when assessed in isolation. This means that a particular measure on climate change mitigation is never *indispensable* for the achievement of global mitigation outcomes and, in fact, the global impact of an individual measure on the climate system is almost always negligible *per se*. Additional efforts by the Netherlands to reduce its GHG emissions by 2020 will be of very little help to any particular individual whose right to life or to family life could be threatened by the impacts of climate change.

Therefore, a judge could have been tempted to conclude that *Urgenda* had no standing, or that its claim that the State had an obligation to protect the rights of Dutch citizens by reducing GHG emissions in the Netherlands failed for lack of a causal link between the efforts of the State to reduce GHG emissions in the Netherlands and any hindrance to the effective enjoyment of their rights. This, however, would have led to the highly unsatisfactory result that were other courts in other countries to take the same approach, no obligation could ever be imposed on any state to address a critical problem the importance of which all states have recognized.

Instead, both courts in *Urgenda* held that the Dutch government must reduce the country's GHG emissions as a matter of legal obligation and that *Urgenda* has a right to claim performance of this obligation. The following sub-sections discuss three key stages of the reasoning of the two courts – namely, in relation to the conditions for standing (Section 3.1); the existence of an obligation of the State to mitigate climate change (Section 3.2); and the scope of this obligation (Section 3.3).

⁷⁰ UNFCCC Secretariat, n. 68 above, para. 88.

⁷¹ On the measures under consideration, see n. 7 above.

3.1. *Standing for the Impacts of Climate Change*

A first issue relates to the discrepancy between the scope of the case brought by *Urgenda* and the scope of climate change. Climate change is a global phenomenon, most consequences of which will take decades or even centuries to unfold. The consequences of climate change will almost never materialize directly in distinct individual harm. By contrast, any litigation is confined to the rights and obligations of the parties to the dispute. This makes it remarkably difficult to bring to courts questions relating to the impacts of climate change. Framing a climate case in broad terms may raise questions of standing, but framing it too narrowly may exacerbate the difficulty of establishing the urgency of action on climate change mitigation.

Urgenda attempted to frame the case as broadly as it possibly could. It claimed to represent the interests of present and future generations in the Netherlands and abroad⁷² – essentially anyone born or to be born. The State contested *Urgenda*'s standing in as much as it related to present or future populations abroad,⁷³ and it was not clear whether the State accepted *Urgenda*'s claim to stand for future generations in the Netherlands.⁷⁴ Yet, both courts accepted that *Urgenda*, as a foundation, had standing at least with regard to present generations living in the Netherlands.⁷⁵ Both courts also stated that, as a matter of standing, they did not need to decide on additional, contested grounds.⁷⁶

In particular, building on the legislative history of the Civil Code, the CA acknowledged that *Urgenda* could have standing even if only on the basis of 'idealistic interests ... that people want to advocate out of a particular conviction'.⁷⁷ This approach is certainly more convincing than trying to relate individual harm to the broad, systemic impact of climate change. This category of 'idealistic interests' could extend beyond the social impacts of climate change – to which the *Urgenda* case is mostly confined – to include considerations of the widespread impacts of climate change on cultural and ecological values. This interpretation led the courts to grant standing to *Urgenda* but, in fact, only displaced the question of causation to later stages of the reasoning.

3.2. *The Legal Obligation of the State to Mitigate Climate Change*

Another question raised in *Urgenda* relates to the existence of an obligation on the part of a state to mitigate climate change under domestic law. The two judgments illustrate the availability of various legal obligations requiring essentially the same

⁷² *Urgenda 1*, para. 3.3.

⁷³ *Ibid.*, para. 3.3.

⁷⁴ See *ibid.*, para. 4.5 (noting that the State 'defers to the court's opinion' on the question); but see also *Urgenda 2*, para. 37 (according to which 'the State argued, as understood by the Court, that *Urgenda* cannot act on behalf of future generations of Dutch nationals').

⁷⁵ See Dutch Civil Code, n. 41 above, Art. 305a.

⁷⁶ See *Urgenda 1*, para. 4.92; *Urgenda 2*, para. 37.

⁷⁷ *Urgenda 2*, para. 38 (citing the legislative history behind Book 3, Art. 305a of the Dutch Civil Code, n. 41 above).

conduct: while the DC based its judgment on the doctrine of hazardous negligence,⁷⁸ the CA focused on the positive obligation of the Netherlands to protect the rights to life and to family life under Articles 2 and 8 ECHR.⁷⁹ Urgenda invoked other grounds, such as Article 21 of the Constitution of the Netherlands and the international obligations of the Netherlands under climate treaties and the no-harm principle,⁸⁰ although the DC considered that, under Dutch law, Urgenda did not have the right to claim the performance of these obligations. Lastly, Urgenda invoked a provision of the Dutch Civil Code on the prohibition of nuisance, which the DC did not have to assess, having established a duty of care on another ground.⁸¹

Climate change is an environmental issue with far-reaching consequences for global physical systems,⁸² ecosystems and biological diversity,⁸³ at least as much as it is a human rights issue⁸⁴ or a cultural law issue.⁸⁵ As such, the general obligation of a state to mitigate climate change can most solidly be based on the no-harm principle,⁸⁶ and also, less directly, on a range of alternative rules of international law which relate, for instance, to the protection of biological diversity,⁸⁷ the marine environment,⁸⁸ the world cultural heritage,⁸⁹ and human rights.⁹⁰ Yet, opportunities for adjudication on the basis of these rules are often lacking. In contrast to most other fields, human rights law offers a high potential for

⁷⁸ See section 2.2 above.

⁷⁹ See section 2.3 above.

⁸⁰ *Urgenda 1*, paras 4.36 and 4.38–4.39.

⁸¹ *Ibid.*, para. 4.51.

⁸² IPCC, *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (IPCC, 2015), pp. 40–4, 60–2.

⁸³ *Ibid.*, p. 67.

⁸⁴ *Ibid.*, pp. 67–73. See also A. Boyle, 'Climate Change, the Paris Agreement and Human Rights' (2018) 67(4) *International & Comparative Law Quarterly*, pp. 759–77; B. Mayer, 'Human Rights in the Paris Agreement' (2016) 6(1–2) *Climate Law*, pp. 109–17.

⁸⁵ See, e.g., L. Reimann et al., 'Mediterranean UNESCO World Heritage at Risk from Coastal Flooding and Erosion Due to Sea-level Rise' (2018) 9 *Nature Communication* online articles, article no. 4161 (2018), available at: <https://www.nature.com/articles/s41467-018-06645-9>.

⁸⁶ See B. Mayer, *The International Law on Climate Change* (Cambridge University Press, 2018); Mayer, n. 38 above. See also Rio Declaration on Environment and Development, adopted by the UN Conference on Environment and Development, Rio de Janeiro (Brazil), 3–14 June 1992, UN Doc. A/CONF.151/26/Rev.1 (Vol. I), Principle 2, available at: <http://www.un.org/documents/ga/conf151/aconf15126-1annex1>; International Court of Justice (ICJ), *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 1996, *ICJ Reports 1996*, p. 226, para. 29.

⁸⁷ See, e.g., Convention on Biological Diversity (CBD), Rio de Janeiro (Brazil), 5 June 1992, in force 29 Dec. 1993, available at: <https://www.cbd.int/convention/text>.

⁸⁸ See UN Convention on the Law of the Sea (UNCLOS), Montego Bay (Jamaica), 10 Dec. 1982, in force 16 Nov. 1994, Art. 192, available at: www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

⁸⁹ See UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage (WHC), Paris (France), 16 Nov. 1972, in force 17 Dec. 1975, Art. 4, available at: <http://whc.unesco.org/en/conventiontext>.

⁹⁰ See, in particular, International Covenant on Economic, Social and Cultural Rights (ICESCR), New York, NY (US), 16 Dec. 1966, in force 3 Jan. 1976, Art. 2, available at: <https://www.ohchr.org/en/professionalinterest/pages/cescr.aspx>; International Covenant on Civil and Political Rights (ICCPR), New York, NY (US), 16 Dec. 1966, in force 23 Mar. 1976, Art. 2, available at: <https://www.ohchr.org/en/professionalinterest/pages/ccpr.aspx>.

adjudication by defining individual rights in the performance of state obligations and by establishing supranational courts and other institutions with a mandate to adjudicate disputes or, at least, interpret these rights. The CA judgment certainly confirmed a ‘rights turn’⁹¹ in climate adjudication by basing its approach to the case not on tort law but entirely on human rights law.

The State, however, had a number of objections to the determination that it had an obligation to mitigate climate change, whether under the doctrine of hazardous negligence or under human rights law. The first objection relates to the integration of the Netherlands in the EU and, in particular, to the EU ETS. The second objection relates to the more fundamental question of the loose causal link between emissions reduction in the Netherlands and the impacts of climate change. These objections are discussed in turn.

First objection: Market integration and the waterbed effect

The State argued that EU legislation prevented it from taking additional measures to mitigate climate change.⁹² The basis for the establishment of the EU ETS in 2005 lies in the Treaty on the Functioning of the European Union (TFEU), which gives a mandate to the European Parliament and the Council to decide actions to be taken on environmental protection.⁹³ The same treaty provides clearly that this does not prevent Member States from adopting more stringent protective measures compatible with EU treaties.⁹⁴ Thus, as the CA noted, EU climate law does not prevent the Netherlands from adopting more stringent measures on climate change mitigation.⁹⁵

A more persuasive argument of the State related to the effectiveness of mitigation action in relation to activities covered by a transnational market-based mechanism. The State submitted that additional emissions reduction in the Netherlands within the scope of the EU ETS would liberate emission allowances, which would be traded to other parts of the ETS, resulting in no net EU-wide emissions reduction. Hence, emissions reductions in the Netherlands would be balanced by increases (or less reduction) in other parts of the EU – a phenomenon sometimes referred to as ‘the waterbed effect’.⁹⁶

However, this argument is limited to those emissions in the Netherlands which fall within the scope of the EU ETS. Moreover, the argument assumes that the ETS operates like a natural market whereas, on the contrary, public authorities have frequently had to intervene to regulate the ‘market price’ of emission allowances,⁹⁷

⁹¹ See J. Peel & H.M. Osofsky, ‘A Rights Turn in Climate Change Litigation?’ (2018) 7(1) *Transnational Environmental Law*, pp. 37–67.

⁹² *Urgenda 1*, para. 4.80; *Urgenda 2*, para. 54.

⁹³ Lisbon (Portugal), 13 Dec. 2007, in force 1 Dec. 2009, consolidated version [2012] OJ C 326/47, Art. 192, available at: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=OJ%3AC%3A2012%3A326%3ATOC>.

⁹⁴ *Ibid.*, Art. 193.

⁹⁵ *Urgenda 2*, para. 54; see also *Urgenda 1*, para. 4.80.

⁹⁶ *Urgenda 1*, para. 4.81; *Urgenda 2*, para. 55.

⁹⁷ See, e.g., Regulation (EU) No. 1210/2011 amending Regulation (EU) No. 1031/2010 in particular to Determine the Volume of Greenhouse Gas Emission Allowances to be Auctioned Prior to 2013 [2011] OJ L 56/11.

and a mechanism for such intervention has been institutionalized.⁹⁸ In the short term, a surplus in emission allowances could be balanced by the cancellation of allowances while, in the longer term, less demand for emission allowances would facilitate the decision to issue fewer emission allowances in future trading periods. The Dutch government itself is contemplating the creation of additional incentives for reduction of emissions covered by the EU ETS,⁹⁹ knowing that this would contribute to overall mitigation efforts despite the risk of a waterbed effect. Thus, both courts rightly rejected this objection.¹⁰⁰

Second objection: The drop-in-the-ocean problem

A second objection, which extends far beyond the scope of a regional organization or that of a carbon market, lies at the very core of climate law. The State accurately contended that it could not possibly solve the problem of climate change on its own,¹⁰¹ as the share of the Netherlands in global GHG emissions is small.¹⁰² The lack of a causal link between emissions reduction in the Netherlands and the impacts of climate change could be invoked in relation to any legal basis for a mitigation obligation of a general nature: the duty of care to avert the imminent danger of climate law;¹⁰³ the positive obligation of a state to protect the right to life and to family life under Articles 2 and 8 ECHR;¹⁰⁴ or, indeed, the no harm principle.¹⁰⁵ Each state (except for the few largest ones) contributes only marginally to global GHG emissions; its efforts to reduce its emissions are a drop in the ocean. As the Netherlands contributes less than 0.5% of global GHG emissions,¹⁰⁶ any effort by the Netherlands to reduce its GHG emissions, even drastically, is unlikely to have any direct and measurable impact on the wellbeing of Dutch nationals or, indeed, anyone else.

Both courts rejected this objection. The CA, in particular, held that the small contribution of the Netherlands to global GHG emissions ‘does not release the State from its obligation to take measures in its territory, within its capabilities, which in concert with the efforts of other states provide protection from the hazards of

⁹⁸ Decision (EU) 2015/1814 concerning the Establishment and Operation of a Market Stability Reserve for the Union Greenhouse Gas Emission Trading Scheme and amending Directive 2003/87/EC [2015] OJ L 264/1. See *Urgenda 2*, para. 56.

⁹⁹ UNFCCC Secretariat, n. 68 above, para. 38.

¹⁰⁰ *Urgenda 1*, para. 4.81; *Urgenda 2*, para. 56. On the DC’s confusion between the waterbed effect and the question of carbon leakage in its judgment, see M. Peeters, ‘Urgenda Foundation and 886 Individuals v. The State of the Netherlands: The Dilemma of More Ambitious Greenhouse Gas Reduction Action by EU Member States’ (2016) 25(1) *Review of European, Comparative and International Environmental Law*, pp. 123–9, at 126.

¹⁰¹ *Urgenda 2*, para. 61.

¹⁰² See n. 106 below.

¹⁰³ *Urgenda 1*, paras 4.78 and 4.90.

¹⁰⁴ *Urgenda 2*, para. 61.

¹⁰⁵ See A. Zahar, ‘The Contested Core of Climate Law’ (2018) 8(3–4) *Climate Law*, pp. 244–60.

¹⁰⁶ In 2010, about 0.42% of global GHG emissions occurred in the Netherlands, according to the Emissions Database for Global Atmospheric Research (EDGAR), cited in *Urgenda 1*, para. 2.27.

dangerous climate change'.¹⁰⁷ Yet, neither of the two courts gave a complete justification for its finding. The DC, for instance, highlighted that 'the possibility of damages for those whose interests Urgenda represents, including current and future generations of Dutch nationals, is ... great and concrete',¹⁰⁸ all but ignoring that imposing additional efforts on the State would make no significant difference. It referred to the case of the Potash Mines, in which the Dutch Supreme Court held that a polluter cannot 'reject possible liability by stating that its contribution is minor'.¹⁰⁹ Yet, the case of the Potash Mines certainly does not imply liability for any negligible contributors to a global environmental issue, and the DC did not explain why the Netherlands' GHG emissions were 'minor' rather than negligible.

The conclusion of the CA is far more convincing because it genuinely seeks to address the drop-in-the-ocean problem. If the objection of the State was to be allowed, the CA pointed out, 'each state held accountable would then be able to argue that it does not have to take measures if other states do not [do] so either'.¹¹⁰ As the CA noted, '[t]hat is a consequence that cannot be accepted'.¹¹¹ The CA highlighted the need for the availability of an effective legal remedy for a global problem such as climate change,¹¹² but this alone cannot be the justification for the obligation of the Netherlands since, in the absence of the obligation to mitigate, there would be no legal wrong to be remedied.

The maxim at which the CA hints is not limited to climate change, to states, or to law; rather, it is an essential feature of any normative system. It is by following the same maxim that states apply international law (most of the time) and that we, individual citizens, respect our environment, for instance, by refraining from littering (most of the time). An authoritative phrasing of this maxim in the ethical sphere, the first formulation of Immanuel Kant's categorical imperative, reads as follows: 'Act only on that maxim whereby thou canst at the same time will that it should become a universal law'.¹¹³ The CA seems to imply, rightly, that each and every state should act in a way which, in a sound and reasonable assessment, would avert dangerous climate change if only other states were to act following the same maxim.¹¹⁴ In a world where opportunities for the enforcement of international law obligations remain scarce, no effort to mitigate climate change can be successful if this rule is disregarded. Thus, this maxim is law not because it is written in any particular code or established through any particular case, but out of necessity.

¹⁰⁷ *Urgenda 2*, para. 62; see also *Urgenda 1*, para. 4.79.

¹⁰⁸ *Urgenda 1*, para. 4.89.

¹⁰⁹ Supreme Court of the Netherlands, HR 23 Sept. 1968, NJ 1989, 743; *Urgenda 1*, para. 4.79.

¹¹⁰ *Ibid.*, para. 64.

¹¹¹ *Ibid.*

¹¹² *Ibid.*

¹¹³ I. Kant, *Fundamental Principles of the Metaphysics of Morals* (Thomas Kingsmill Abbott transl., 1785), Section 2, available at: <http://www.gutenberg.org/cache/epub/5682/pg5682-images.html>.

¹¹⁴ See *Urgenda 2*, para. 62 (noting the responsibility of the State, 'in its territory, within its capabilities ... in concert with the efforts of other states').

3.3. *The Ambit of the Obligation*

Arguably the thorniest issue in the *Urgenda* case – as in many climate-related cases – was the determination of the ambit of the obligation of the Netherlands to reduce its GHG emissions.¹¹⁵ The question involves a political arbitrage between various values and interests, such as between immediate economic benefits and deferred impact on human welfare. The question is often addressed (though it does not have to be) by determining, first, a global objective, and then the contribution that a state must make towards its achievement.¹¹⁶ In addressing this question, a judge must, in addition, respect the degree of deference owed to elected branches of government.¹¹⁷ To assess whether the State was doing enough to reduce GHG emissions in the Netherlands and what target, if any, should be imposed, the courts relied on scientific information, ethical criteria for differentiation, and some previous statements of the Dutch government.

Climate science

To determine the appropriate national target that could be imposed on the State, both courts relied heavily on scientific research on climate change, in particular on syntheses of economic studies. The starting point was the IPCC's AR4, and in particular the contribution of WG3 on the mitigation of climate change, published in 2007.¹¹⁸ Firstly, the contribution of WG3 to AR4 was taken as the main authority to establish the need to hold the increase in global average temperatures below 2°C above pre-industrial levels (the 2°C target),¹¹⁹ an objective which had apparently been acknowledged by *Urgenda* and the Dutch government during the dispute.¹²⁰ Secondly, the WG3 contribution to AR4 was also taken as evidence of the need to stabilize GHG concentrations in the atmosphere at a level of about 450 ppm CO₂-eq by the end of the 21st century in order to achieve the 2°C target (the 450 scenario).¹²¹ Lastly, the WG3 contribution to AR4 was interpreted as establishing that this 450 scenario requires Annex I parties to the UNFCCC (developed countries) to reduce their GHG emissions by at least 25%, and possibly as much as 40%, by 2020, compared with 1990 levels (the Annex I 25–40% emissions reduction target).¹²²

In relying on the contribution by WG3 to AR4 as evidence of the 2°C target, of the 450 scenario and of the Annex I 25–40% emissions reduction target, the courts gave new authority to scientists.¹²³ Climate science, including economics, provides the

¹¹⁵ See, e.g., J. van Zeben, 'Establishing a Governmental Duty of Care for Climate Change Mitigation: Will *Urgenda* Turn the Tide?' (2015) 4(2) *Transnational Environmental Law*, pp. 339–57, at 344.

¹¹⁶ See Arts 2.1 and 3 Paris Agreement. See generally B. Mayer, 'Construing International Climate Change Law as a Compliance Regime' (2018) 7(1) *Transnational Environmental Law*, pp. 115–37; and Mayer, n. 86 above, pp. 218–37.

¹¹⁷ See *Urgenda 1*, para. 102; *Urgenda 2*, para. 69.

¹¹⁸ IPCC, n. 42 above.

¹¹⁹ *Urgenda 1*, para. 4.14; *Urgenda 2*, para. 12.

¹²⁰ See *Urgenda 2*, para. 44.

¹²¹ See *Urgenda 1*, para. 4.20; *Urgenda 2*, para. 12.

¹²² See *Urgenda 1*, para. 4.23 (with a mistake in the translation: the original version of the judgment mentions a rate of 25%–40%, not 20%–40%); *Urgenda 2*, para. 12.

most reliable estimates of the consequences of different choices, but climate science cannot determine what the objective *should* be; value-based judgments are indispensable for determining what societies should strive for. Contrary to observations by both courts, AR4 did not adopt the 2°C target for it then to be ‘endorsed’¹²⁴ by climate negotiations; this milestone was created entirely through political processes which were informed but not determined by climate science.¹²⁵ Similarly, the two courts overstated scientific evidence presented in AR4 that the 450 scenario was necessary to achieve the 2°C target: the 450 scenario was merely mentioned in a bracket in Chapter 3 of the WG3 contribution as a ‘best estimate’.¹²⁶ Furthermore, while Chapter 13 of the WG3 contribution suggests that the Annex I 25–40% emissions reduction target would be required to achieve the 450 scenario,¹²⁷ another section of the same chapter asserts that the 2°C target would require emissions reductions of 10–40% in Annex I countries within the same time frame, on the ground that higher concentration scenarios could also keep temperatures below 2°C warming.¹²⁸ This inconsistency, albeit apparent in the judgment of the DC,¹²⁹ is not explained by either court. Instead, ignoring the IPCC’s finding that ‘a considerable range of 2020 and 2030 emissions can be consistent with specific long-term goals’,¹³⁰ the DC held that the Annex I 25–40% reduction target was ‘scientifically proven’.¹³¹

Courts should build on the latest authoritative scientific evidence – especially in a field as dynamic as climate science and economics. The contribution of WG3 to AR4 was published more than 10 years before the CA decision. While the IPCC’s Special Report *Global Warming of 1.5°C* was not available to the courts,¹³² they could have built on the WG3 contribution to the Fifth Assessment Report of the IPCC (AR5), published in 2014,¹³³ which provided more advanced estimates of the mitigation scenarios consistent with a 2°C target. The contribution of WG3 to AR5 concluded with high confidence that, while a 450 scenario is ‘likely’ (which suggests

¹²³ See generally M. Hulme, *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge University Press, 2009).

¹²⁴ *Urgenda 1*, para. 4.11; see also *Urgenda 2*, para. 12.

¹²⁵ See S. Gupta et al., ‘Policies, Instruments and Co-operative Arrangements’, in IPCC, n. 42 above, pp. 746–807, at 769 (refraining from taking a position when noting the ‘option ... to set a goal for long-term GHG concentrations or maximal temperature rise (such as the 2°C goal proposed by the EU)’). See also S. Randalls, ‘History of the 2°C Climate Target’ (2010) 1(4) *WIREs Climate Change*, pp. 598–605; R. Knutti et al., ‘A Scientific Critique of the Two-Degree Climate Change Target’ (2016) 9(1) *Nature Geoscience*, pp. 13–18.

¹²⁶ B. Fisher et al., ‘Issues related to Mitigation in the Long-Term Context’ in IPCC, n. 42 above, pp. 169–250, at 227.

¹²⁷ Gupta et al., n. 125 above, p. 776.

¹²⁸ *Ibid.*, p. 748.

¹²⁹ *Urgenda 1*, para. 2.16.

¹³⁰ See also L. Clarke et al., ‘Assessing Transformation Pathways’, in IPCC (O. Edenhofer et al., eds), *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2014), pp. 413–510, at 433.

¹³¹ *Urgenda 1*, para. 4.85.

¹³² IPCC, *Global Warming of 1.5°C* (2018), available at: <http://www.ipcc.ch/report/sr15>.

¹³³ IPCC, n. 130 above.

more than a 66% chance) to hold temperatures below 2°C, a scenario reaching 500 ppm CO₂-eq in 2100 (the 500 scenario) is also ‘more likely than not to limit temperature change to less than 2°C’.¹³⁴ Though both courts noted this finding,¹³⁵ on which the State tried to rely in its defence,¹³⁶ the courts maintained nonetheless, oddly, that a ‘450 scenario’, rather than a ‘500 scenario’, was required to pursue the 2°C target.

A valid ground for this could have been that states need to pursue scenarios that imply at least a 66% chance of achieving the 2°C target. Yet, neither court discussed the level of certainty that should be associated with efforts towards the 2°C target. Instead, the DC contended that AR5 shows ‘a strong preference for the 450 scenario, as the risks are much higher with a 500 scenario’.¹³⁷ Yet, it is not clear how this ‘strong preference’ was expressed, and presumably it was not: any such preference would be inconsistent with the principle of policy neutrality that guides the work of the IPCC.¹³⁸ It is also unclear how this preference could be established based on science alone: as climate risks are always lower with a more ambitious scenario, scientists would certainly prefer a lower concentration scenario even more.¹³⁹ The 450 scenario inevitably involves a political arbitrage between the costs and benefits of climate change mitigation, an arbitrage which cannot be based only on science.

Going even further than the DC, the CA threaded into the scientific arena and questioned the reliability of emissions pathways in the WG3 contribution to AR5. The CA first noted that most mitigation scenarios presented in AR5 are based on the use of ‘negative emissions technologies’ (NETs),¹⁴⁰ a concept that refers to a broad range of technologies that would remove large quantities of CO₂ from the air, such as a combination of bioenergy and carbon capture and storage.¹⁴¹ The CA cited a report by the European Academies Science Advisory Council, brought to its attention by Urgenda, which suggests that NETs ‘offer only limited realistic potential to remove carbon from the atmosphere and not at the scale envisaged in *some* climate scenarios’.¹⁴² On this basis, the government having failed to provide any

¹³⁴ O. Edenhofer et al., ‘Summary for Policymakers’, in IPCC, n. 130 above, pp. 1–30, at 10 (emphasis added), cited in *Urgenda 1*, para. 2.19.

¹³⁵ *Urgenda 2*, para. 12.

¹³⁶ See *Urgenda 1*, para. 4.21; *Urgenda 2*, para. 49.

¹³⁷ See, in particular, *Urgenda 1*, para. 4.22.

¹³⁸ See IPCC, *Principles Governing IPCC Work* (approved 1–3 Oct. 1998, last updated 14–18 Oct. 2013), para. 2, available at: <http://www.ipcc.ch/pdf/ipcc-principles/ipcc-principles.pdf>.

¹³⁹ The pre-industrial atmospheric concentration in GHGs is estimated at around 280 ppm CO₂-eq: IPCC, n. 82 above, p. 3.

¹⁴⁰ *Urgenda 2*, paras 12 and 49.

¹⁴¹ Clarke et al., n. 130 above, pp. 485–6.

¹⁴² European Academies Science Advisory Council, *Negative Emission Technologies: What Role in Meeting Paris Agreement Targets?* (EASAC Policy Report 35, Feb. 2018), p. 1, available at: https://easac.eu/fileadmin/PDF_s/reports_statements/Negative_Carbon/EASAC_Report_on_Negative_Emission_Technologies.pdf (emphasis added), cited in *Urgenda 2*, para. 49.

counter-evidence, the CA concluded that the mitigation scenarios in AR5 ‘*might* thus have painted too rosy a picture’,¹⁴³ and denied their relevance.

In doing so, the CA did not assess the scientific authority of the report by the European Academies Science Advisory Council; nor did it draw any conclusion from the highly speculative phrasing of its own conclusion. Anecdotally, as the Dutch government had not raised the point, the CA ignored the fact that AR4 had also assumed that NETs could play a role in achieving a 450 scenario.¹⁴⁴ It is inevitable for an emissions reduction pathway to rely on a number of assumptions, including assumptions of technological development.¹⁴⁵ Even if some of these assumptions are highly speculative and many are the object of continuing debate, the IPCC’s Assessment Reports aim to establish best estimates based on a general understanding of the scientific community through an open deliberative process. The findings of such reports should not be discarded without strong and convincing evidence that, on a particular point, the report does not reflect the best scientific knowledge.

As such, it is regrettable that the CA rejected the conclusions of the IPCC’s most recent Assessment Report on the basis of a single sceptical publication. Relying on the latest climate science would have been essential for the analysis that the CA attempted to develop because estimated least-cost mitigation pathways are highly time-dependent: a 2020 mitigation target that appears feasible at an acceptable price in 2007 (when the relevant part of AR4 was published) may have become significantly more expensive in 2015 (when the DC first decided the case) if states have not followed a consistent mitigation pathway in the meantime. It would have been preferable for the CA to conduct a comprehensive review of the recent scientific literature on emissions reduction pathways in order to assess whether the mitigation scenarios presented in the WG3 contribution to AR5 fail to represent the best scientific knowledge and, if so, to determine the best current understanding of least-cost mitigation pathways. Alternatively – and perhaps more realistically, given resource constraints both for the court and for the parties themselves – the CA could have noted the high level of international recognition of the IPCC and placed a very high burden of proof on any party willing to challenge the conclusions of the IPCC’s latest Assessment Report.

Based on AR5, the objective of achieving the 2°C target does not seem to justify a 450 scenario, unless one considers that the scenario in question should be ‘likely’ (as opposed to ‘more likely than not’) to achieve the target.¹⁴⁶ Yet, the need to pursue a 450 scenario could have been argued in the light of the objective – already recognized at the outset of the dispute in a number of COP decisions (and subsequently integrated in the Paris Agreement) – of holding the increase in the global average temperature to ‘below 2°C’ (or ‘*well* below 2°C’ in the Paris Agreement), leaning

¹⁴³ *Urgenda* 2, para. 49 (emphasis added).

¹⁴⁴ Fisher et al., n. 126 above, p. 198.

¹⁴⁵ *Ibid.*, p. 172.

¹⁴⁶ See J. Lambrecht & C. Ituarte-Lima, ‘Legal Innovation in National Courts for Planetary Challenges: *Urgenda v. State of the Netherlands*’ (2016) 18(1) *Environmental Law Review*, pp. 57–64, at 62 (suggesting that even a 66% chance of achieving the 2°C target may not be sufficient).

towards 1.5°C.¹⁴⁷ On the other hand, as GHG concentrations in the atmosphere are in all likelihood already above 450 ppm CO₂-eq,¹⁴⁸ and even though most emissions pathways compatible with the 450 scenario involve a transient overshoot,¹⁴⁹ the question needs at least to be asked whether achieving a 450 scenario remains possible at all, especially if one follows the CA in its dismissal of NETs.

Altogether, science offers much weaker support for Urgenda's claim that Annex I states as a whole *had to* achieve at least a 25% emissions reduction by 2020 than the DC and the CA appeared to accept. Urgenda is reported to have argued that a 2020 emissions reduction target of 25% (from a 1990 basis) in the Netherlands 'is not only necessary to continue to have a prospect of a limitation of global warming of up to (less than) 2°C, but is furthermore the most cost-effective'.¹⁵⁰ Formally, this statement is incoherent: the target is either 'necessary', which means that there is no alternative way to achieve the 2°C target, or it is 'the most cost-effective', which implies that there are alternative ways to achieve the 2°C target. In reality, no effort whatsoever on the part of the Netherlands is strictly 'necessary' for achieving a global temperature objective as the GHG emissions from the Netherlands make very little difference at the global scale: climate change could effectively be resolved through international cooperation without any mitigation effort by the Netherlands.¹⁵¹

Rather than necessity, the courts appear to have been persuaded by the argument based on cost-effectiveness.¹⁵² Yet, little attention was paid in the proceedings to the great uncertainty associated with the works of AR4 and AR5 on the most effective mitigation pathways.¹⁵³ Moreover, one could wonder how helpful a range as large as that accepted by the courts (from 25 to 40% emissions reduction) can be in determining precisely what states must do. More or less might be needed, and more or less might be realistically achievable, from Annex I states in general and from the Netherlands in particular, in order to contribute effectively to global cooperation on climate change mitigation.

¹⁴⁷ See, e.g., UNFCCC Secretariat, Decision 1/CP.16, 'The Cancún Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention' (10–11 Dec. 2010), UN Doc. FCCC/CP/2010/7/Add.1, para. 4; UNFCCC Secretariat, Decision 1/CP.20, 'Lima Call for Climate Action' (14 Dec. 2014), UN Doc. FCCC/CP/2014/10/Add.1, Rec. 7. See also Art. 2.1(a) Paris Agreement, which adds '*well below 2°C*' (emphasis added).

¹⁴⁸ See European Environment Agency, 'Atmospheric Greenhouse Gas Concentrations', 31 Jan. 2018, available at: <https://www.eea.europa.eu/data-and-maps/indicators/atmospheric-greenhouse-gas-concentrations-10/assessment> (indicating 444 ppm CO₂-eq in 2015 with an increase of around 4 ppm CO₂-eq per year, thus suggesting that the threshold of 450 ppm CO₂-eq was passed around 2017).

¹⁴⁹ See O. Edenhofer et al., 'Technical Summary' in IPCC, n. 130 above, pp. 31–108, at 52; Gupta et al., n. 125 above, p. 776. Temporary overshoots may be caused by short-lived non-CO₂ GHGs.

¹⁵⁰ *Urgenda 1*, para. 3.2.

¹⁵¹ See A. Zahar, 'The *Urgenda* Appeal Decision and the Argument from Physical Necessity', 3 Dec. 2018, available at: <https://ssrn.com/abstract=3285076>.

¹⁵² Gupta et al., n. 125 above, p. 776.

¹⁵³ See, e.g., Fisher et al., n. 126 above, pp. 197–200 and 203–6; Clarke et al., n. 130 above, pp. 433–4 (on timing) and 448–62 (on costs).

Grounds for differentiation

Determining the emissions reduction target of a state based on a collective mitigation objective requires a determination of the contribution that this state must make to collective efforts towards the realization of this objective. The parties to climate treaties, including the Netherlands, have recognized a principle of common but differentiated responsibilities and respective capabilities (CBDR-RC), and have agreed that developed states ‘should take the lead in combating climate change’.¹⁵⁴ Beyond this, however, there has been little agreement regarding the criteria and scope for differentiation.¹⁵⁵ Even though there is a general consensus in climate politics that developed states have to do more than is required of developing states, there is no common understanding of how much more they ought to do and how this should be distributed among them.¹⁵⁶

As far as the differentiation between Annex I and non-Annex I countries is concerned, both courts appeared reluctant to interpret the CBDR-RC principle.¹⁵⁷ Yet, an interpretation of the CBDR-RC principle necessarily underlies the Annex I 25–40% emissions reduction target on which the judgments are based. For instance, neither court discussed the ‘equity interpretations’¹⁵⁸ on which WG3 had relied in AR4 to suggest that Annex I countries would most likely need to decrease their GHG emissions by 10–40% by 2020 (from a 1990 basis) in order to achieve the 2°C target. The DC simply noted that this target was necessary to achieve the 2°C ‘with due regard for a fair distribution’.¹⁵⁹ While the two courts attributed the Annex I 25–40% emissions reduction target to ‘international climate policy’,¹⁶⁰ the Bali Action Plan¹⁶¹ and ‘virtually all COPs’,¹⁶² this particular range has only been mentioned in the preamble to a decision adopted in 2010 by the meeting of the parties to the Kyoto Protocol.¹⁶³ COP decisions such as the Bali Action Plan call on global emissions reductions ‘consistent’ with AR4 but do not mention any particular range, thus

¹⁵⁴ Art. 3(1) UNFCCC; Art. 2(2) Paris Agreement.

¹⁵⁵ See, e.g., L. Rajamani, ‘Common But Differentiated Responsibilities’, in M. Faure (ed.), *Elgar Encyclopedia of Environmental Law* (Edward Elgar, 2018), pp. 291–302; P. Cullet, ‘Common But Differentiated Responsibilities’, in M. Fitzmaurice, D.M. Ong & P. Merkouris (eds), *Research Handbook on International Environmental Law* (Edward Elgar, 2010), pp. 161–81.

¹⁵⁶ Cf. P. Galvão Ferreira, ‘“Common But Differentiated Responsibilities” in the National Courts: Lessons from *Urgenda v. The Netherlands*’ (2016) 5(2) *Transnational Environmental Law*, pp. 329–51 (which emphasizes the consensus more than its limitations).

¹⁵⁷ The principle is not even formally cited by the CA: see *Urgenda 2*, para. 8, for the closest allusion to equity, responsibilities and capacities. In the judgment of the DC, the principle is mentioned only in the section on ‘facts’, not in the section on their ‘assessment’, although, arguably, its ‘spirit’ is present: see Lambrecht & Ituarte-Lima, n. 146 above, p. 63.

¹⁵⁸ T. Barker et al., ‘Technical Summary’ in IPCC, n. 42 above, pp. 25–94, at 90.

¹⁵⁹ *Urgenda 1*, para. 4.23.

¹⁶⁰ See *Urgenda 1*, paras 4.31, 4.84 and *passim*.

¹⁶¹ *Urgenda 2*, para. 11.

¹⁶² *Ibid.*, para. 51.

¹⁶³ UNFCCC Secretariat, Decision 1/CMP.6, ‘The Cancún Agreements: Outcome of the Work of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol at its Fifteenth Session’ (10–11 Dec. 2010), UN Doc. FCCC/KP/CMP/2010/12/Add.1, Rec. 6. See also UNFCCC Secretariat, Decision 1/CP.13, ‘Bali Action Plan’ (14–15 Dec. 2007), UN Doc. FCCC/CP/2007/6/Add.1, Rec. 5 (which emphasizes the urgency to address climate change and is accompanied by

reflecting, more than anything else, the *absence* of a global consensus on the 25–40% emissions reduction target.¹⁶⁴

The modalities of differentiation nevertheless had to be discussed when the courts turned to consider what the Annex I 25–40% emissions reduction target meant for the Netherlands. In this regard, both courts interpreted the situation of the Netherlands as requiring at least as much as the average Annex I country. The CA thus noted that the Netherlands had to ‘assume its responsibility’¹⁶⁵ given its higher-than-average per capita gross domestic product (GDP) and per capita GHG emissions – all the more so because it had ‘profited from fossil fuels for a long time’.¹⁶⁶ The DC also mentioned the need to consider ‘the onerousness of taking precautionary measures’¹⁶⁷ in the Netherlands, noting that the burden of proof would have been for the State to establish that it had ‘insufficient financial means to realize higher reduction measures’.¹⁶⁸

While the most often heard considerations for differentiation were mentioned, none was discussed at any length, and the reader of the judgments is likely to find the approach of differentiation by the courts somewhat expeditious. If the Netherlands has greater responsibility and greater capacity than most Annex I countries, as both courts suggest, and assuming an uncontested need for *at least* 25% emissions reduction in Annex I countries as a whole, thorough consideration should have been given to the possibility for the DC to impose a target higher than a 25% emissions reduction. Instead, the DC noted, perhaps too swiftly, that it saw ‘insufficient grounds to compel the State to adopt a higher level’ of ambition,¹⁶⁹ in light of the limitation of the court’s discretionary power.¹⁷⁰ Urgenda did not bring up the question on appeal. This, in itself, constitutes a major flaw in the treatment of this case. As Robiou du Pont and Meinshausen have noted, ‘systematic court decisions that governments must follow the least-ambitious end of an equity range would be insufficient to achieve the Paris Agreement’.¹⁷¹

Statements made on behalf of the Netherlands

As well as science and principles of fairness, the courts relied on statements made on behalf of the Government of the Netherlands as a way to determine the ambit of its

a footnote containing a reference to the WG3 contribution to AR4. Far from endorsing any particular target, the decision did not even formally ‘take note’ or ‘acknowledge’ the findings of the report).

¹⁶⁴ Decisions 1/CP.16, n. 147 above, para. 37; UNFCCC Secretariat Decision 1/CP.18, ‘Agreed Outcome pursuant to the Bali Action Plan’ (8 Dec. 2012), UN Doc. FCCC/CP/2012/8/Add.1, para. 7.

¹⁶⁵ *Urgenda 2*, para. 66.

¹⁶⁶ *Ibid.*, paras 26, 44, 60 and 66. See also *Urgenda 1*, para. 4.57.

¹⁶⁷ *Urgenda 1*, para. 4.63; see also *ibid.*, paras 4.67 et seq. The DC thus alluded to a range of geographical and economic circumstances which may hinder or facilitate climate change mitigation in the country, such as the potential for producing renewable energy.

¹⁶⁸ *Urgenda 2*, para. 4.77.

¹⁶⁹ *Urgenda 1*, para. 4.86.

¹⁷⁰ *Ibid.*

¹⁷¹ Y. Robiou du Pont & M. Meinshausen, ‘Warming Assessment of the Bottom-up Paris Agreement Emissions Pledges’ (2018) 9(4810) *Climate Change Nature*, pp. 1–10, at 2.

obligation on climate change mitigation. In a policy on climate change communicated in 2007, the government had expressed the objective of 30% emissions reduction by 2020 (from a 1990 basis).¹⁷² This target was abandoned following, it seems, the growing understanding that neither Annex I countries as a whole, nor even the EU, would unconditionally commit to a 30% emissions target. The Netherlands had also actively supported an international target of a 25–40% emissions reduction in Annex I countries by 2020 (from a 1990 basis) during international negotiations – in particular, at the 2009 Copenhagen summit – as essential in order ‘to stay on credible track to keep the 2 degrees objective within reach’.¹⁷³

Both courts interpreted these developments as evidence that the Netherlands had once recognized both the need for a national target of 30% emissions reduction by 2020 (from a 1990 basis) and its ability to achieve it.¹⁷⁴ The courts highlighted that the State had provided no scientific justification for abandoning its 30% emissions reduction target, and no economic justification for its inability to achieve this target.¹⁷⁵ Furthermore, the courts interpreted the EU’s conditional target of a 30% emissions reduction by 2020 and statements associated with it as evidence that the EU had also acknowledged the shortcoming of its mitigation action.¹⁷⁶

This reasoning could have offered the strongest basis for the courts to determine the ambit of the obligation of the Netherlands to mitigate climate change. Admittedly, it is not clear whether the declarations made by the Netherlands in relation to its initial target were manifested with the will to be bound under international law,¹⁷⁷ as might be the case with the Cancún Pledges or the EU NDC, documents which were communicated to international institutions in a formal manner.¹⁷⁸ Nevertheless, having clearly admitted its responsibility, the Netherlands could not then deny the same without producing any sort of scientific or economic justification for its turnabout.¹⁷⁹ Interesting arguments could have been made in relation to the emerging

¹⁷² Government of the Netherlands, ‘Nieuwe Energie voor het Klimaat’ [New Energy for the Climate], 3 Sept. 2007, available at: <https://europadecentraal.nl/wp-content/uploads/2013/01/Werkprogramma-Schoon-en-Zuinig.pdf> (cited in *Urgenda 1*, para. 2.71). See also *Urgenda 1*, para. 4.26; *Urgenda 2*, para. 28.

¹⁷³ See letter of the Minister of Housing, Spatial Planning and the Environment to the House of Representatives, 12 Oct. 2009 (cited in *Urgenda 2*, para. 19).

¹⁷⁴ *Urgenda 2*, para. 52; see also *Urgenda 1*, para. 4.29.

¹⁷⁵ See, e.g., *Urgenda 1*, paras 4.29 and 4.70; *Urgenda 2*, para. 52.

¹⁷⁶ See *Urgenda 2*, para. 52. See generally, e.g., Directive 2009/29/EC, n. 27 above, recital 6 (stating that the European Council’s objective of a 30% emissions reduction by 2020 was ‘scientifically necessary to avoid dangerous climate change’).

¹⁷⁷ See International Law Commission, ‘Guiding Principles Applicable to Unilateral Declarations of States Capable of Creating Legal Obligations’ (2006) *Yearbook of the International Law Commission*, Vol. II, Pt Two, Principle 1. See also ICJ, *Nuclear Tests (Australia v. France)*, Judgment of 20 Dec. 1974, *ICJ Reports* 1974, pp. 267–8, paras 43 and 46.

¹⁷⁸ See B. Mayer, ‘International Law Obligations Arising in Relation to Nationally Determined Contributions’ (2018) 7(2) *Transnational Environmental Law*, pp. 251–75, at 262–70.

¹⁷⁹ Such a turnabout might be viewed as an estoppel in common law countries and even under international law: see, e.g., T. Cottier & J.P. Müller, ‘Estoppel’, in *Max Planck Encyclopedia of Public International Law* (Oxford University Press, 2012), pp. 671–7.

principles of non-regression and progression, the central importance of which in relation to climate change mitigation was recognized in the Paris Agreement.¹⁸⁰ On the other hand, a difficulty is that what was considered feasible in 2007 might have become considerably more expensive in 2015 because of the failure of the State to take steps in the meantime.

Instead, having put much emphasis on scientific assessments and some emphasis on grounds for differentiation, the DC appeared to give only marginal importance to such statements. It determined, without much justification, that the State had to achieve at least a 25% emissions reduction by 2020 (from a 1990 basis), rather than the 30% emissions reduction announced in past policy documents.¹⁸¹ Regrettably, *Urgenda* did not bring up the question in its cross-appeal.¹⁸²

4. CONCLUSION

The two judgments in *Urgenda* are, to date, the only judgments to have imposed a specific emissions reduction target on a state. Yet, they did not take place in isolation. Cases have been brought to courts in various countries – in particular, in the United States (US) – to determine the obligation of national authorities to mitigate climate change. In *Juliana v. United States*, 21 individual plaintiffs and two non-governmental organizations allege that the US government is violating its obligations under the public trust doctrine by its failure to commit sufficient efforts to the mitigation of climate change.¹⁸³ Public interest litigation focusing on the obligations of public authorities under the public trust doctrine is ongoing in several US states, which include Alaska,¹⁸⁴ Florida,¹⁸⁵ and Oregon,¹⁸⁶ while cases have been dismissed in various other states.¹⁸⁷ Outside the US, public interest litigation is ongoing against the governments of Belgium,¹⁸⁸ India,¹⁸⁹ Ontario

¹⁸⁰ See Arts 3 and 4.3 Paris Agreement. See generally Club des Jurists, 'Preliminary Draft of a Global Pact for the Environment', 24 June 2017, Art. 17, available at: <http://pactenvironment.org>; M. Prieur, 'Non-Regression in Environmental Law' (2012) 5(2) *Surveys and Perspectives Integrating Environment & Society*, pp. 53–6.

¹⁸¹ See *Urgenda 1*, para. 4.86 (alluding only to 'insufficient grounds to compel the State to adopt a higher level than the minimum level of 25%').

¹⁸² See *Urgenda 2*, paras 3 and 75.

¹⁸³ The case was still ongoing as of Oct. 2018: Climate Case Chart, *Juliana v. United States*, available at: <http://climatecasechart.com/case/juliana-v-united-states>.

¹⁸⁴ Climate Case Chart, *Sinnok v. Alaska*, available at: <http://climatecasechart.com/case/sinnok-v-alaska>.

¹⁸⁵ Climate Case Chart, *Reynolds v. Florida*, available at: <http://climatecasechart.com/case/reynolds-v-florida>.

¹⁸⁶ *Chernaik v. Brown*, Or. Cir. Ct, 16-11-09273 (11 May 2015), currently on appeal.

¹⁸⁷ See, e.g., *AJI P. v. State*, 2018 WL 3978310 (Superior Court of Washington, 14 Aug. 2018); *Funk v. Wolf*, 638 Pa. 726 (Supreme Court of Pennsylvania, 28 Mar. 2017); *Sanders-Reed v. Martinez*, 350 P.3d 1221 (Court of Appeal of New Mexico, 12 Mar. 2015); *Kanuk v. State of Alaska*, 335 P.3d 1088 (Supreme Court of Alaska, 12 Sept. 2014). A notable success for climate plaintiffs was reached in *Kain v. Department of Environmental Protection*, 474 Mass. 27849 N.E.3d 1124 (17 May 2016), but on the basis of a clear statutory requirement that the Department of Environmental Protection promulgate regulations on the reduction of GHG emissions.

¹⁸⁸ See generally the website of Klimaatszaak, available at: <https://www.klimaatszaak.eu/nl>.

¹⁸⁹ Climate Case Chart, *Pandey v. India*, available at: <http://climatecasechart.com/non-us-case/pandey-v-india>. The case is pending before the National Green Tribunal of India.

(Canada),¹⁹⁰ Pakistan,¹⁹¹ and the United Kingdom,¹⁹² as well as against the institutions of the EU,¹⁹³ among many others.

Each case is likely to raise unique questions relating to the context in which it takes place. In particular, the question of standing may unfold differently depending on national rules. Yet, other aspects of the judgments in *Urgenda* may be of direct relevance to discussions of other cases, including the courts' approach to the drop-in-the-ocean problem and the determination of the ambit of a state's obligation. Some aspects of the judgments in *Urgenda* may read as cautionary tales – in particular, the arguably misleading treatment of scientific literature as normative authority and the exclusion of the latest IPCC report on insufficient grounds. As commentators of the judgment of the DC have noted, it would be desirable in such cases that courts appoint scientific experts,¹⁹⁴ who may help the court to understand climate science.¹⁹⁵ Other aspects of the two judgments in *Urgenda* highlight the potential for fruitful arguments based, for instance, on prior statements made by national authorities about the determination of their own responsibility to mitigate climate change. This argument could be particularly effective in the US, as the Trump administration does little to ensure the implementation of national targets on climate change mitigation previously communicated under the Obama administration with a relatively clear will to be bound under international law.¹⁹⁶ In *Indigenous Environmental Network v. Department of State*, the District Court of Montana quashed the decision of the Department of State under the Trump administration to authorize the construction of the Keystone XL Pipeline, which the same department had prevented in 2015 under the Obama administration, on the ground that the agency had failed to provide 'a reasoned explanation' for disregarding prior factual findings relating to the impact of the project on climate change.¹⁹⁷

¹⁹⁰ Climate Case Chart, *Greenpeace Canada v. Minister of the Environment, Conservation, and Parks; Lieutenant Governor in Council*, available at: <http://climatecasechart.com/non-us-case/greenpeace-canada-v-minister-of-the-environment-conservation-and-parks-lieutenant-governor-in-council>.

¹⁹¹ Climate Change Laws of the World, *Ali v. Federation of Pakistan* (Supreme Court of Pakistan), available at: <http://www.lse.ac.uk/GranthamInstitute/litigation/ali-v-federation-of-pakistan-supreme-court-of-pakistan-2016>.

¹⁹² Climate Case Chart, *Plan B Earth and Others v. Secretary of State for Business, Energy, and Industrial Strategy*, available at: <http://climatecasechart.com/non-us-case/plan-b-earth-others-v-secretary-state-business-energy-industrial-strategy> (pending, on appeal).

¹⁹³ Case T-330/18, *Carvalho and Others v. Parliament and Council* [2018] OJ C 285/34.

¹⁹⁴ S. Roy & E. Woerdman, 'Situating Urgenda v The Netherlands within Comparative Climate Change Litigation' (2016) 34(2) *Journal of Energy & Natural Resources Law*, pp. 165–89, at 165.

¹⁹⁵ See Peeters, n. 100 above, p. 128.

¹⁹⁶ See, e.g., US, 'Nationally Determined Communication', 3 Sept. 2016, available at: <http://www4.unfccc.int/ndcregistry/PublishedDocuments/United%20States%20of%20America%20First/U.S.A.%20First%20NDC%20Submission.pdf>; US–China Joint Announcement on Climate Change, Beijing (China), 12 Nov. 2014, available at: <https://obamawhitehouse.archives.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change>. See generally Sabin Center for Climate Change Law, 'Climate Deregulation Tracker', available at: <http://columbiaclimatelaw.com/resources/climate-deregulation-tracker>.

¹⁹⁷ *Indigenous Environmental Network v. US Department of State* (2018) —F.Supp.3d —, 2018 WL 5840768 (DC Mont.).

Urgenda can also be viewed as a cautionary tale for the prospects of climate change litigation. The State's concern about the extent of the power of the judge is not entirely groundless. The treatment of particularly complex scientific and ethical questions by the courts is certainly questionable. The outcome – the order to achieve a 25% emissions reduction by 2020 compared with 1990 – relies on a succession of questionable assumptions. Any variation of any of these assumptions would lead a court to dramatically different conclusions, which jeopardizes legal determinacy. An alternative reading of the contribution of WG3 to AR4, for instance, would have suggested that a 10% emissions reduction by 2020 (from a 1990 basis) was sufficient for Annex I parties taken as a whole.¹⁹⁸ The adoption of two temperature targets ('well below 2°C' and efforts towards 1.5°C) in the Paris Agreement only adds to the complexity of determining a state's mitigation obligation.¹⁹⁹

Yet, the conclusion of this tale does not have to be that courts have no role to play in interpreting states' mitigation obligations.²⁰⁰ Rather, it should lead litigants and the courts they seize to question whether a purely top-down approach to the interpretation of a state's obligation to mitigate climate change, based on the determination of global mitigation objectives and an analysis of effort-sharing criteria, is the best approach. To reduce the risk of a cassation in *Urgenda*, greater weight could have been given in the appeal proceedings to prior statements made on behalf of the State, whereby specific mitigation targets were determined nationally as both feasible and appropriate. International processes whereby states are invited to determine and communicate their contribution to global cooperation on climate change mitigation seek to ensure that such statements are made in a transparent manner – and can then be relied upon, if needed, as a basis for the interpretation of a state's mitigation obligation. Absent such statements, or if the ambition announced in these statements appears to be insufficient, it would be preferable for a court to trigger national processes through which appropriate mitigation action can be defined by way of procedural injunctions.²⁰¹ For instance, *Urgenda* could have asked the courts to order the government to develop an analysis of plausible global mitigation pathways leading to the achievement of globally agreed mitigation objectives, and to devise and implement a national mitigation strategy consistent with this analysis.

Overall, what should really be retained from *Urgenda* is the need for more refined methodology to interpret the mitigation obligations of states which can be inferred

¹⁹⁸ See n. 128 above and accompanying text. For an entirely different methodology suggesting a very different interpretation of the EU's general mitigation obligation, see also Memorandum for the Applicants in *Carvalho v. European Parliament and Council* (23 May 2018), available at: http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/05/20180524_Case-no.-T-18_application-1.pdf.

¹⁹⁹ Art. 2.1(a) Paris Agreement.

²⁰⁰ See Zahar, n. 151 above.

²⁰¹ See by analogy Plan B Earth and Others, 'Statement of Facts and Grounds', 8 Dec. 2017, available at: http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2017/20171207_Claim-No.-CO162018_points-of-claim-1.pdf. See also Memorandum for the Applicants in *ENvironnement JEUnesse v. Canada*, 26 Nov. 2018, available at: http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2018/20181126_500-06_application-2.pdf (unofficial English translation).

from general norms (such as human rights law, tort law, or international environmental law). This note aims to show that the arguments deployed by Urgenda and accepted by the courts to assess the necessary mitigation target of the Netherlands were rudimentary and often unconvincing. Yet, what is the alternative? Little methodological research has been carried out so far to determine the requisite level of ambition for a state to comply with its general mitigation obligations. These methodological questions are here to stay and will become increasingly relevant as more cases are brought before various courts throughout the world.