

Global trends in climate change legislation and litigation

Michal Nachmany, Sam Fankhauser, Joana Setzer
and Alina Averchenkova



The Centre for Climate Change Economics and Policy (CCCEP)

was established in 2008 to advance public and private action on climate change through rigorous, innovative research. The Centre is hosted jointly by the University of Leeds and the London School of Economics and Political Science. It is funded by the UK Economic and Social Research Council. More information about the ESRC Centre for Climate Change Economics and Policy can be found at: www.cccep.ac.uk

The Grantham Research Institute on Climate Change and the Environment

was established in 2008 at the London School of Economics and Political Science. The Institute brings together international expertise on economics, as well as finance, geography, the environment, international development and political economy to establish a world-leading centre for policy-relevant research, teaching and training in climate change and the environment. It is funded by the Grantham Foundation for the Protection of the Environment, which also funds the Grantham Institute for Climate Change at Imperial College London. More information about the Grantham Research Institute can be found at: www.lse.ac.uk/grantham/

The core mission of the **Sabin Center** is to develop and promulgate legal techniques to address climate change, and to train the next generation of lawyers who will be leaders in the field. The Sabin Center is both a partner to and resource for public interest legal institutions engaged in climate change work. Further, the center addresses a critical need for the systematic development of legal techniques to fight climate change outside of the realm of judicial litigation, and the compilation and dissemination of information for lawyers in the public, private and NGO sectors. More information about the Sabin Center can be found at: <http://columbiaclimatelaw.com/>

The Inter-Parliamentary Union (IPU) is the world organisation of parliaments. Founded in 1889, it has become a global forum for parliamentary dialogue, cooperation and action. It advances democracy and assists parliaments and parliamentarians throughout the world to fulfil their mandates. It develops standards, disseminates information on good practices and helps build parliamentary capacity and efficacy. It defends the human rights of members of parliament, promotes respect for universal values, norms and principles, and supports gender equality and the participation of young people in political life. The IPU brings in a parliamentary dimension to the work of the United Nations and other multilateral institutions, including for the implementation of Agenda 2030 and the SDGs. More information can be found at: <http://www.ipu.org>

About the authors and acknowledgements

All of the authors work at the Grantham Research Institute on Climate Change and the Environment. Michal Nachmany is a research officer; Sam Fankhauser is co-director; Joana Setzer is a research officer; and Alina Averchenkova is principal research fellow, leading the research theme 'governance and legislation'.

The authors would like to like to thank Michael Burger, Michael Gerrard and Justin Gundlach for their thoughtful comments and Georgina Kyriacou for her efficient support in the production of this report. The authors also wish to thank the numerous parliamentarians and their staff from around the world who have supported this work. Most of them are members of GLOBE International and/or the Inter-Parliamentary Union, and the authors are grateful to both organisations.

The Grantham Research Institute is supported by the Grantham Foundation for the Protection of the Environment and the UK Economic and Social Research Council (ESRC), through its support of the Centre for Climate Change Economics and Policy (CCCEP). Further financial assistance was provided by the British Academy for the Humanities and Social Sciences, through its support for the project The Governance and Implementation of SDG 13 (Climate Change) and a Postdoctoral Fellowship granted to Joana Setzer.

This publication is intended to inform decision-makers in the public, private and third sectors. It has been reviewed internally and externally before publication. The views expressed in this publication represent those of the authors and do not necessarily represent those of the host institutions or funders.

© Grantham Research Institute on Climate Change and the Environment, May 2017

Contents

List of tables and figures	2
Foreword by the Secretary General of the Inter-Parliamentary Union	3
Foreword by the Executive Secretary of the United Nations Framework Convention on Climate Change	4
Summary of key messages	5
1. Purpose and scope of the report	6
Searchable online database	6
History of the report	7
Structure of the report	7
2. Trends in legislation	8
The global stock of climate legislation has grown to over 1,200 laws	8
The pace of law-making slowed to around 40 new laws in 2016	9
Three out of four countries have climate-specific regulation	10
Climate change gets integrated into other policies, particularly energy	12
Least developed countries (LDCs) are increasingly active on climate change	12
3. Trends in litigation	13
The number of climate litigation cases is rising	13
Climate litigation has many objectives, but most cases concern specific projects	14
Most court cases are brought by firms	15
Governments are the most frequent defendants	16
Two-thirds of court rulings strengthen or preserve existing climate regulations	17
4. Conclusions	19
References	20
Appendix 1. Methodology and scope	21
Legislation	21
Litigation	22
Appendix 2. List of countries included in the database	24

List of tables and figures

Figure 1. Legislative and executive acts up to 2016	8
Figure 2. Climate legislation in 164 countries in 1997	9
Figure 3. Climate legislation in 164 countries in 2017	9
Figure 4. Annual legislative action up to 2016 (number of new climate change laws per year)	10
Figure 5. Global laws and policies by focus areas, pre-1994–2016	11
Figure 6. Number of litigation cases in 25 jurisdictions, 1994–2016	13
Figure 7. Litigation cases in all countries for which data is available, 1994–2017	14
Figure 8. Number of cases by core objective	14
Figure 9. The proportion of litigation cases in the database, by plaintiff type	16
Figure 10. The growth in court cases and number of laws over time	17

Foreword

By the Secretary General of the Inter-Parliamentary Union

The Inter-Parliamentary Union is honoured to be associated with this study on global trends in climate change legislation and litigation. The study is another important milestone in the cooperation between the IPU and the Grantham Research Institute on Climate Change and the Environment. I am grateful to the Sabin Center on Climate Change Law at the Columbia Law School and to the British Academy for their support and contribution to this important knowledge resource.



This study comes at a critical time as policy-makers and practitioners seek to implement and put into practice the transformative Paris Agreement on climate change. Parliaments are at the heart of this response. They can, and should, make sure that the provisions of the Paris Agreement are translated into national legislation and that adequate budget allocations are made to support implementation of relevant laws and policies. Needless to say, parliamentary oversight of how governments respond to climate change challenges and holding them to account for their actions, or lack thereof, is crucial.

The IPU is pleased to see that there are now over 1,200 climate change or climate change-related laws worldwide and that low-income countries are increasingly engaged in the enforcement of climate change legislation, most notably on climate resilience. This demonstrates growing awareness among parliamentarians of the need to take concrete action that reduces global greenhouse gas emissions and to pursue efforts to curb the temperature increase.

The IPU is pleased to have contributed to this progress. In order to inspire further action, our 173 Member Parliaments have adopted the Parliamentary Action Plan on Climate Change. This Action Plan is intended to guide parliaments and ensure that the legislative response to climate change is appropriate and consistent with the aims of the United Nations Framework Convention on Climate Change.

I reiterate the IPU's readiness to step up climate action together with its Member Parliaments. We are also open to cooperation with a broad circle of partners on global climate advocacy, including international organisations, sub-national and local authorities, research institutions and civil society. Wide circulation of the findings and conclusions of this 2017 study is part and parcel of these efforts.

Martin Chungong, May 2017

Foreword

By the Executive Secretary of the United Nations Framework Convention on Climate Change



The Paris Climate Change Agreement of 2015 was adopted on a wave of optimism, enthusiasm and momentum built by over 20 years of intergovernmental negotiations, painstakingly researched scientific evidence and growing support from all sectors of society. Many ask today whether that momentum can be maintained: the answer is ‘yes’.

The Agreement entered into force less than 12 months after it was born and today well over 140 countries or Parties to the treaty have ratified it – a record-breaking achievement for a modern-day UN agreement.

There are many other indicators that the world has entered a game-changing period. Some, like the emergence of electric-powered vehicles on city streets or the growth of solar and wind on rooftops and along coastlines, are already highly visible. Trillions of dollars are now moving from high-carbon investments towards cleaner, greener ones because of decisions by investors including pension funds, banks and high net-worth citizens.

Governments, implementing their climate action plans or Nationally Determined Contributions (NDCs), are also being supported by cities, regions, states and territories setting ambitious emission reduction targets. Companies, including many household names like Unilever, Google, Walmart and Ikea, have also set targets to realise operations and in some cases supply chains that are 100 per cent powered by renewable energy, and to tread lightly on natural resources like forests. Other actions are perhaps less visible to the public eye but are without doubt essential for powering up this transition and embedding it across government policy-making and wider society, now and for decades to come.

This report shows that today there are now over 1,200 climate change or climate change-relevant laws in place worldwide: a twentyfold increase over 20 years when compared with 1997 when there were just 60 such laws in place. The rate at which new laws are being passed has slowed from over 100 per year in the period 2009–2013 to around 40 a year in 2016 – but this is more about the fact that existing laws cover much of the globe and speaks today to the issue of using and enforcing legislation rather than drafting new laws. Indeed, the report underlines that the future lies in strengthening existing laws and filling gaps rather than devising new frameworks like the Paris Agreement.

The report provides further evidence of momentum: it says that courts are increasingly complementing the actions of legislators with over 250 court cases brought in which climate change is a relevant factor.

The Paris Agreement and the Sustainable Development Goals are the vehicles chosen by the international community to deliver a safer, less risky and prosperous world for the many rather than the few. Societies and economies need to transform their development paths in line with these aims and ambitions over the short, medium and long term. Many factors will underpin success, from the way financial markets operate to behaviour change among citizens. Relevant legislation, carefully used, supported and backed by an informed judiciary, will also be crucial for realising our shared aspirations for shaping a resilient, low-carbon and truly sustainable future.

Patricia Espinosa, May 2017

Summary of key messages

- There are now over 1,200 climate change or climate change-relevant laws worldwide, a twentyfold increase over 20 years: in 1997 there were about 60 climate laws in place.
- The rate at which new laws are passed has decreased from over 100 new laws per year in 2009–13 to around 40 new laws in 2016. This reflects the large amount of ground that existing climate laws already cover.
- The challenge for the future lies in strengthening existing laws and filling gaps, rather than devising new frameworks. Most (but not all) countries have the legal basis on which further action can build.
- Low-income countries are progressively active on climate change legislation. Reflecting their circumstances, the focus of low-income countries is on climate resilience rather than emissions.
- Climate change needs to be integrated better into mainstream development strategies. Only four in 10 countries have factored climate change explicitly into their development plans.
- The courts are complementing the actions of legislators, ruling on the implementation of existing climate laws or providing a basis for the regulation of greenhouse gas emissions. Outside the United States, there have been over 250 court cases in which climate change is a relevant factor.
- Two-thirds of court cases have either strengthened or maintained climate change regulation. In one-third of cases, policies have been weakened. However, the evidence base on court cases is less complete than that on climate change legislation.

1. Purpose and scope of the report

This report summarises key trends in climate change legislation and litigation. It is the sixth stock-take in a series of global *Climate Legislation Studies* that dates back to 2010. The information is drawn from two major databases, *Climate Change Laws of the World* and *Climate Change Litigation of the World*, which are maintained jointly by the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science, and the Sabin Center on Climate Change Law at the Columbia Law School. The report is supported by the Inter-Parliamentary Union (IPU).

The 2017 edition of the report covers legislative activities in 164 countries, up from 99 countries in 2015. It includes the world's 50 largest greenhouse gas emitters and 93 of the top 100 emitters. Together they account for nearly 95 per cent of global greenhouse gas emissions.

For the first time, the 2017 report also includes analysis of climate change litigation. While the legislative and executive branches of governments have long been prominent domains for climate change action, the judiciary is beginning to play an increasingly important role in national climate policy. The report covers climate litigation cases across 25 jurisdictions.

The increased coverage in this report was possible by combining separate databases, which had been maintained by the Grantham Research Institute and the Sabin Center. The expanded joint data platform is the product of several years of data collection by both institutions, and it responds to a need to consolidate the fragmented knowledge base on climate legislation and governance (Bößner et al. 2017).

The 2017 report retains the broad definition of climate and climate-related laws of earlier editions, which reflects the relevance of climate policy in a wide range of areas, including energy, transport, land use and climate resilience. We maintain the focus on climate action at the national level, although the crucial importance of sub-national initiatives at the state, provincial and municipal levels is increasingly recognised, including under the Paris Agreement.

The 164 countries in the legislation database represent varying economic contexts and income levels: 42 countries are classified by the World Bank as high income, 44 as upper-middle income, 47 as lower-middle income, and 30 as low income (World Bank 2017). The list includes 22 of the 28 EU countries, as well as the EU as a legislative entity. The report also covers all of the 48 least developed countries (LDCs). The UN Framework Convention on Climate Change (UNFCCC) and the Paris Agreement explicitly recognise the particular vulnerability of LDCs and their limited capacity to respond to climate change (UNFCCC 2015).

Searchable online database

All the information contained in this report is available on the website of the Grantham Research Institute at www.lse.ac.uk/GranthamInstitute/Legislation. The website features a searchable database on climate change laws and court cases in the countries covered. This is complemented by country profiles and a few selected indicators.

The data are updated regularly. However, there is no claim to have identified every relevant law, policy or court case in the countries covered, and we invite readers to draw our attention to any entries we may have missed (contact email: gri.cgl@lse.ac.uk).

Further details on the methodology and country coverage can be found in Appendices 1 and 2 respectively.

History of the report

The Grantham Research Institute started tracking developments in climate change legislation in 2010. The first *Climate Legislation Study* was published in collaboration with GLOBE International, the Global Legislators Organisation, in the same year (later summarised in Townshend et al. 2011). The parliamentarians of Globe were interested in taking stock of legislative activity on climate change and identifying key legislative principles.

Over a series of annual updates the legislation study grew in scope and ambition. As part of the 2015 report (Nachmany et al. 2015) the material was transferred onto an online database covering 99 jurisdictions. In the same year the Inter-Parliamentary Union (IPU) became an official partner.

Collaboration with the Sabin Center, and again with IPU, allowed the extension of the database to 164 countries and the inclusion of climate litigation in this 2017 edition.

Structure of the report

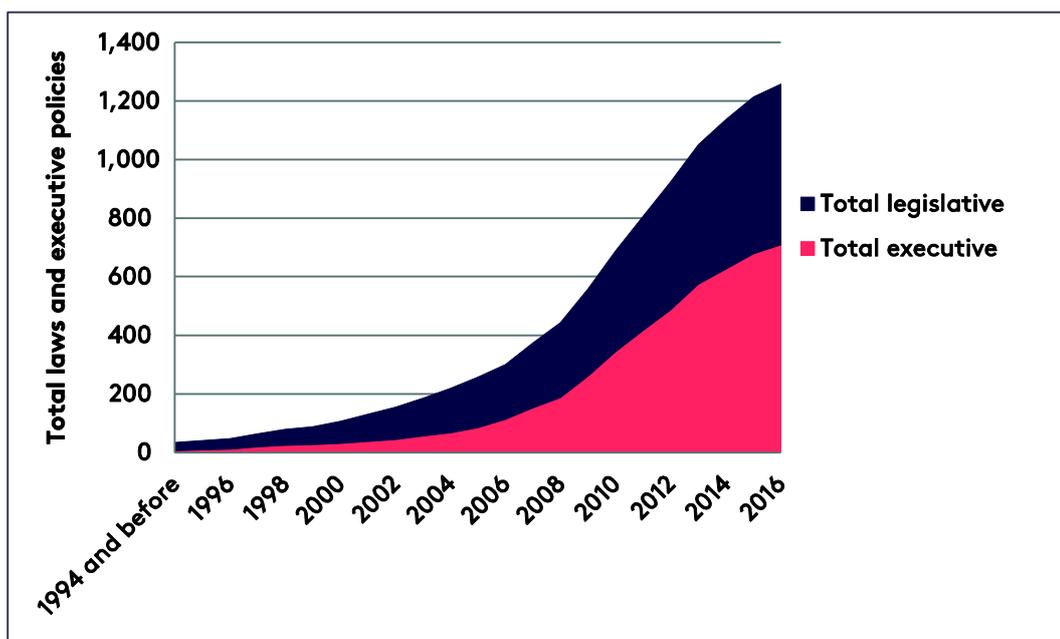
This report is composed of two parts. The first describes trends in legislation, highlighting the global stock of climate laws, the pace of law-making, the focus of legislation, and climate legislation in least developed countries (LDCs). The second part examines trends in litigation, describing the number of climate litigation cases in 25 jurisdictions, the objectives of the cases, who the plaintiffs and defendants were, and the outcomes of litigation so far.

2. Trends in legislation

The global stock of climate legislation has grown to over 1,200 laws

In early 2017, there were more than 1,200 laws and policies in the 164 countries represented in this report. This compares with around 60 climate laws in 1997. In the 20 years since the Kyoto Protocol was agreed, the number of climate change laws has increased by over a factor of 20. This translates into a doubling in the stock of climate laws globally every four to five years (Figure 1).

Figure 1. Legislative and executive acts up to 2016



Source: *Climate Change Laws of the World*

Figures 2 and 3 show how law-making on climate change has spread across the globe over the past two decades, from a very limited legislative response in the pre-Kyoto Protocol days, to a widespread, substantive body of legislation by the end of 2016. There are only a handful of countries (Comoros, Equatorial Guinea, Libya, Somalia and Sudan) that currently do not have any legislative instruments to directly address climate change.

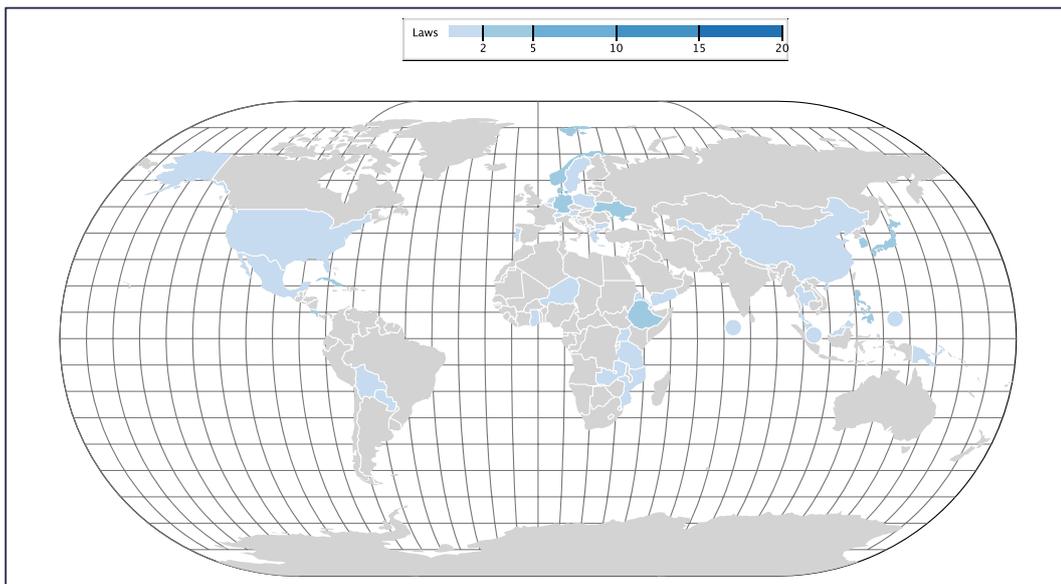
Countries use different routes to address climate change. In some countries the primary avenue is acts of parliament, that is, formal laws passed by the legislative branch. In other countries, it is executive policies (including, among others, executive orders, decrees, strategies and development plans), that sketch out the policy frameworks and the way forward. Overall, approximately 44 per cent of entries in the dataset are legislative acts of parliament, and the remaining 56 per cent are executive policies.

The variance reflects different regulatory traditions and different local contexts. For example, in China the executive branch, through the National Development and Reform Commission, is the dominant agency in climate policy development, coordinating all participating government agencies and guiding the relevant reforms. This is different to countries with strong parliamentary traditions, such as the UK, where the legislative branch takes the lead on policy development.

Less legislative and more executive activity may also reflect an early phase in climate policy development, when executive policies have not yet matured into formal legislation, or it may be that legislative capacities are insufficient. In the least developed countries, for example, only 23 per cent

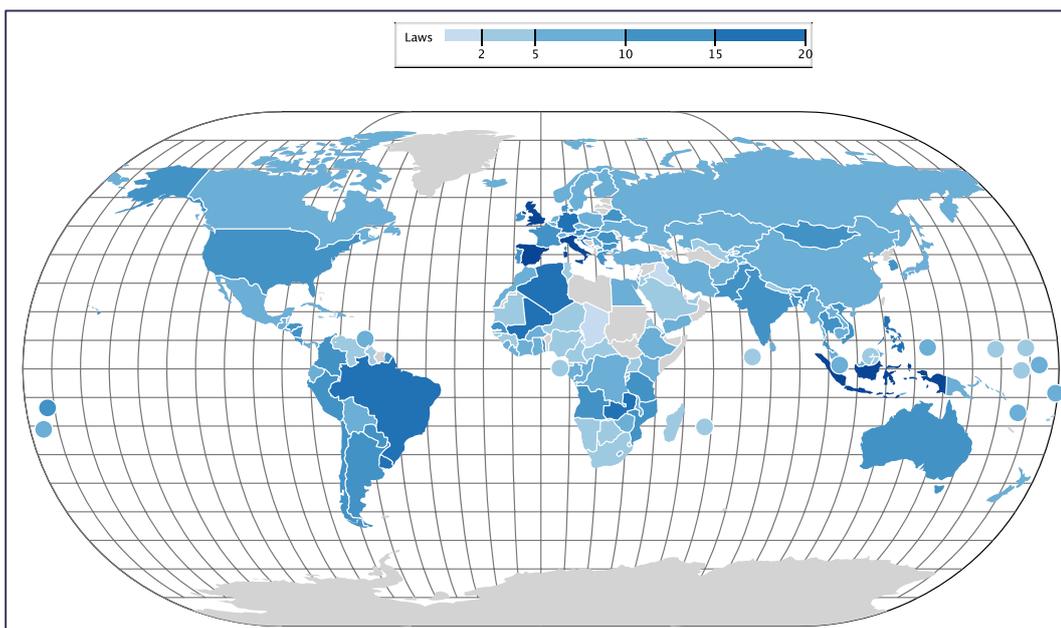
of interventions are legislative, whereas in G20 countries, over 60 per cent of interventions are legislative.

Figure 2. Climate legislation in 164 countries in 1997



Source: *Climate Change Laws of the World*

Figure 3. Climate legislation in 164 countries in 2017



Source: *Climate Change Laws of the World*

The pace of law-making slowed to around 40 new laws in 2016

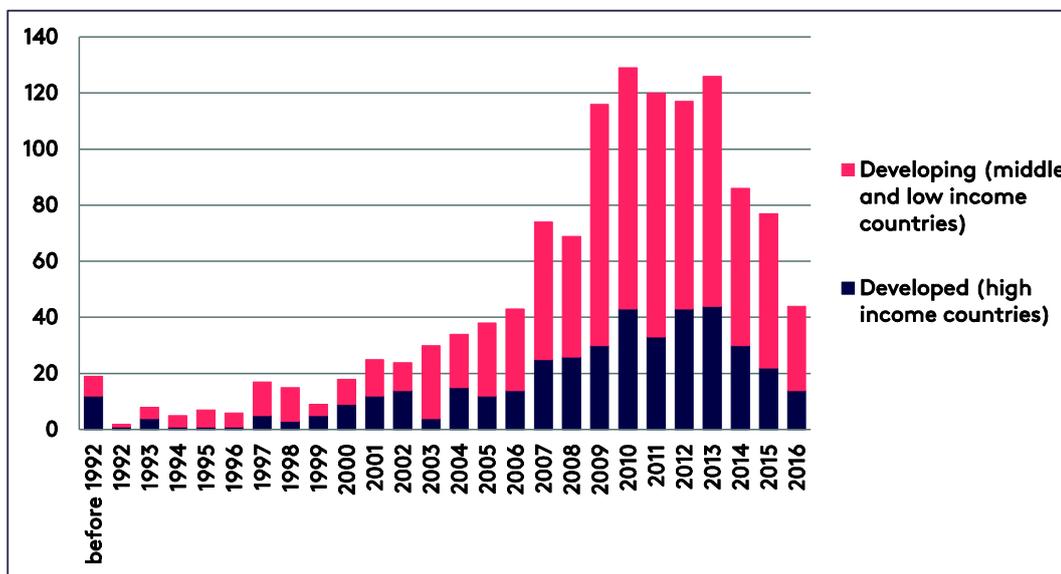
While there has been a steep and sustained increase in the amount of climate change legislation over the past 20 years, the pace of law-making has slowed since around 2014. From 2009 to 2013, a four-year period that encompassed the Copenhagen climate summit (COP 15 in December 2009), over 100 new climate change laws were passed each year. By 2016, that rate had fallen to around 40 new laws (Figure 4).

The slowdown should not be a big surprise. The stock of new laws passed previously covers a large amount of ground. Most countries have in place at least rudimentary, and in many cases fairly comprehensive, climate change frameworks, reducing the need for further legislation. It is also possible that countries were waiting for the outcomes of the COP 21 Paris summit of December 2015 before pursuing any significant efforts to ratchet up their national responses.

Given that the Paris Agreement created an obligation on countries to implement Nationally Determined Contributions and to ratchet up these commitments over time, the need for new laws and policies will again increase. Countries will have to adjust their laws to reflect their increased ambitions. There may, therefore, be a return to higher levels of legislative activity over the coming years.

However, it is a different legislative challenge from a few years ago. Most (though not all) countries have the legal basis on which further action can build. The main challenge will be to strengthen existing laws – increasing their ambition, making them more effective and filling gaps – rather than to devise new frameworks.

Figure 4. Annual legislative action up to 2016 (number of new climate change laws per year)



Source: *Climate Change Laws of the World*

Three out of four countries have climate-specific regulation

Climate change policy, both mitigation (reducing emissions) and adaptation (climate resilience), is interlinked with many other policy issues. The transition to a low-carbon, climate-resilient economy will require reforms across the entire economy. Climate change laws therefore cover action in a number of sectors and they interact with other policy priorities such as energy, transport, industrial policy, forestry and land use, air quality, poverty and food security.

Enacting climate change policy can be done either by formulating a specific climate change law that addresses some or all of these issues, or by embedding climate change considerations into multiple existing (or new) sectoral laws and policies. For example, the latter can include passing laws to promote renewable energy deployment, or adding greenhouse gases to regulated pollutant lists, thus embedding climate change considerations into general environmental laws.

These approaches are not mutually exclusive, and almost all countries have taken a combined approach. While 76 per cent of countries have at least one climate-specific regulation, these laws

represent only a quarter of the dataset. The remaining laws and policies address climate change and transitions to low-carbon economies through different prisms (see Table 1). Some adopt a narrower focus (for example, energy or forestry), while others incorporate climate change into wider frameworks, such as economic development strategies or green growth plans.

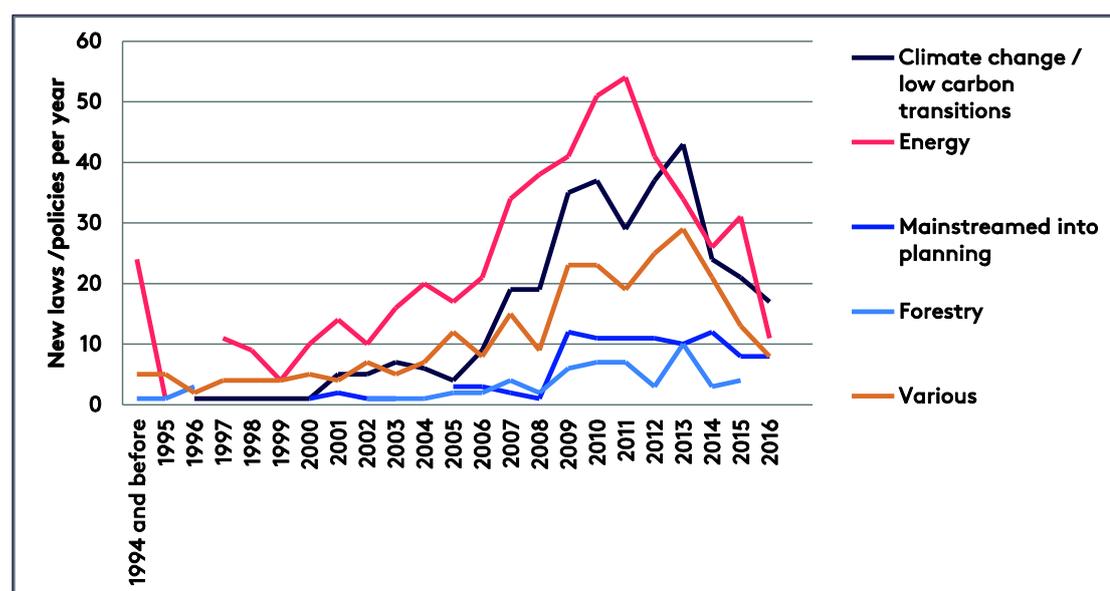
Table 1. Key focus areas for climate-related laws and policies

	Energy	Climate change / low-carbon transitions	General environment laws	Mainstreamed into development plans	Forestry	Green transport	Disaster risk reduction	Agriculture and food security	Other
No. of countries	145	125	92	71	47	18	15	12	38
% of countries	88.41	76.22	56.10	43.29	28.66	10.98	9.15	7.32	23.17
No. of laws	520	327	150	97	60	19	20	16	53
% of laws	41.24	25.93	11.90	7.69	4.76	1.51	1.59	1.27	4.20

Source: *Climate Change Laws of the World*

The peak in climate-centred legislation was between 2010 and 2013 when nearly 80 framework laws were passed. This coincided with an overall peak in climate legislation (Figure 5). Addressing climate change as a holistic issue, either in the framework of climate-specific legislation or in general development plans, has also become prominent in LDCs (see next page).

Figure 5. Global laws and policies by focus areas, pre-1994 to 2016



Source: *Climate Change Laws of the World*

Climate change gets integrated into other policies, particularly energy

The most prominent focus for sectoral laws is energy: in 88 per cent of countries there is at least some integration of climate concerns into energy policy. These laws and policies, concerned with electrification, energy efficiency and conservation, and renewable energy, represent over 41 per cent of the laws and policies in the dataset.

On a much smaller scale, climate change is also incorporated into general environmental regulation, as well as into forestry, transport and agriculture legislation and policies. Many of the contexts in which climate is framed are consistent with the UN's Sustainable Development Goals (SDGs), particularly with SDGs 1 and 2 (eradicating poverty and hunger respectively), SDG 7 (affordable and clean energy), SDG 11 (sustainable cities and communities), SDG 15 (on 'life and land', including managing forests and maintaining biodiversity), and of course, SDG 13 on combatting climate change.

Least developed countries (LDCs) are increasingly active on climate change

Under the Paris Agreement all countries, including the 48 countries currently categorised as least developed, have agreed to put in place measures to address climate change. LDCs are recognised as particularly vulnerable to the impacts of climate change and as therefore requiring added international assistance. Three composite criteria are the basis for officially categorising a country as an LDC: low Gross National Income per capita, low Human Assets Index score and high Economic Vulnerability Index score (see Nachmany et al. 2017). Many LDCs also suffer from a lack of political and economic stability. LDCs included in the database are identified in Appendix 2.

In formulating their Nationally Determined Contributions, LDCs were able to draw on existing legislative frameworks to varying degrees. Supported by the international community, there had been much policy and regulatory activity in the years before the Paris summit. The number of climate laws passed by LDCs had increased steadily over time, building up to a 2013 peak, with the same drop in new laws and policies after 2014 that was observed worldwide (Figure 4 above).

Reflecting the low carbon footprint of LDCs and their high vulnerability to climate change, the focus of most laws has been on adaptation, but also on building frameworks for promoting and enabling green growth. The most progressive LDCs have also started to build low-carbon, climate-resilient and sustainable development directly into their development strategies, reaping potential co-benefits in terms of green growth, air quality and ecosystem protection (Nachmany et al. 2017).

However, legislative gaps remain, and LDCs still have a long way to go. Only 42 per cent of them (20 countries) have factored climate change into their development plans. As a group, LDCs have fewer laws and policies than the global average (5.5 laws and policies per country, compared with the global average of 7.7), while four LDCs do not have any legislative and executive acts directly addressing climate change (Comoros, Equatorial Guinea, Somalia and Sudan).

The Paris Agreement will require LDCs, like all parties to the agreement, to analyse their existing policy and regulatory landscapes, identify gaps and put forward further policy and regulatory action. With support from the international community, LDCs have an opportunity to consolidate recent progress and ensure these developments mature into new policies, executive orders and legislative acts. In the long term, there is no trade-off between climate protection and sustainable economic development (Fankhauser and Stern 2017).

3. Trends in litigation

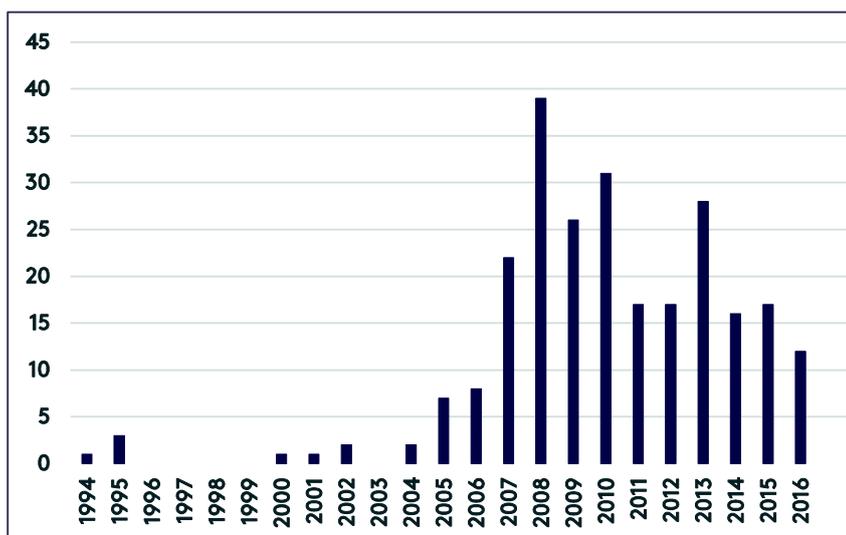
The number of climate litigation cases is rising

Fighting climate change and climate change laws or policies in the courts is increasingly seen as a viable strategy as more cases are being initiated.

The *Climate Change Litigation of the World* dataset includes over 250 court cases across 25 jurisdictions for which data exists. (The dataset excludes the United States and its more than 600 court cases, which are recorded in a separate database;¹ the jurisdictions are listed in Appendix 2.) The database includes information on case names, year, parties involved, jurisdiction, principal law, core object, decision or outcome, current status, and summary information. While the first case in the dataset is from 1994, cases are few and infrequent until the mid-2000s. Since then there have been at least 10 court cases per year in the jurisdictions covered.

Figure 6 shows the number of litigation cases over time, and Figure 7 shows the distribution of cases across countries.

Figure 6. Number of litigation cases in 25 jurisdictions, 1994–2016



Source: *Climate Change Litigation of the World*

Climate change is not central to all of these cases. In fact, in over three-quarters of the cases (77 per cent) climate change is only at the periphery of the argument. (See Box 1 for contrasting examples from Brazil.) On the one hand, this suggests that the majority of the cases classified as climate litigation today are not core climate change cases, but cases that acknowledge climate change as a relevant factor. On the other, even if climate change is a peripheral issue, the judiciary is increasingly exposed to climate change arguments in cases where, until recently, the environmental argument would not have been framed in those terms. For instance, challenges to fossil fuel-related projects have been brought for many years, but it is only in the last decade that climate change has been used as part of the argument or as a motivation for those cases.

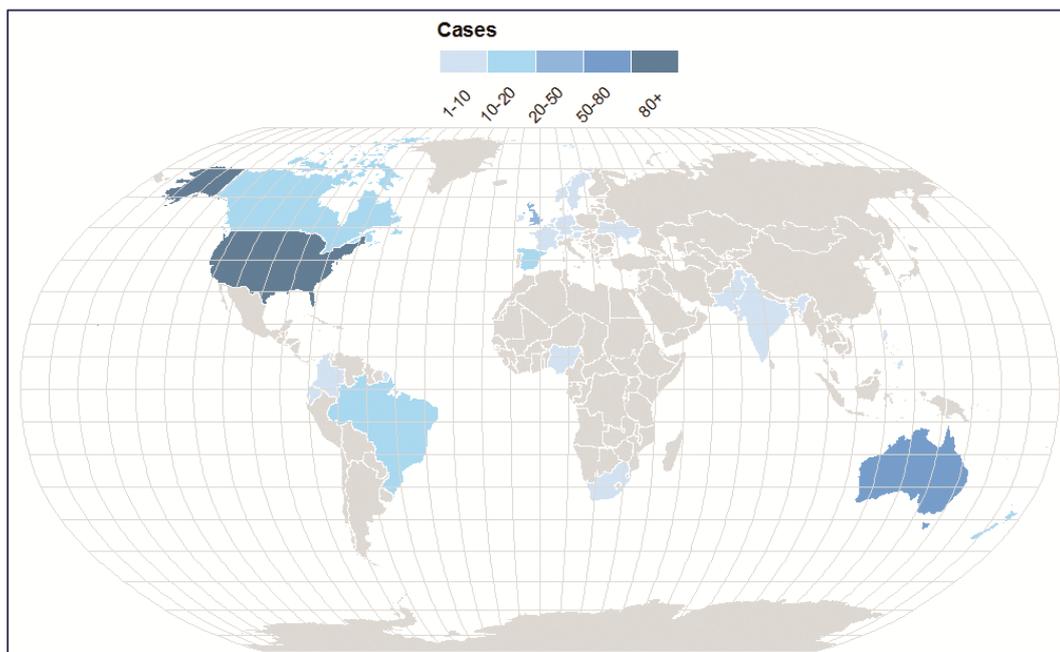
Box 1. Climate change on the edge... and at the centre of litigation

An example of a court case where climate change is at the *periphery* is a decision made by the Brazilian Superior Court of Justice to prohibit the use of fire as a harvesting method for sugar cane. The court considered, among other environmental impacts, the negative effects of carbon emissions.

A further example from Brazil, where climate change is *central* to the case, is a series of class actions brought by the Public Prosecutor Office against the airlines using São Paulo's international airport. The court was called to order the reforestation of lands around the airport to offset greenhouse gas emissions and other pollutants.

¹ See <http://wordpress2.ei.columbia.edu/climate-change-litigation/us-climate-change-litigation/>

Figure 7. Litigation cases in all countries for which data is available, 1994–2017

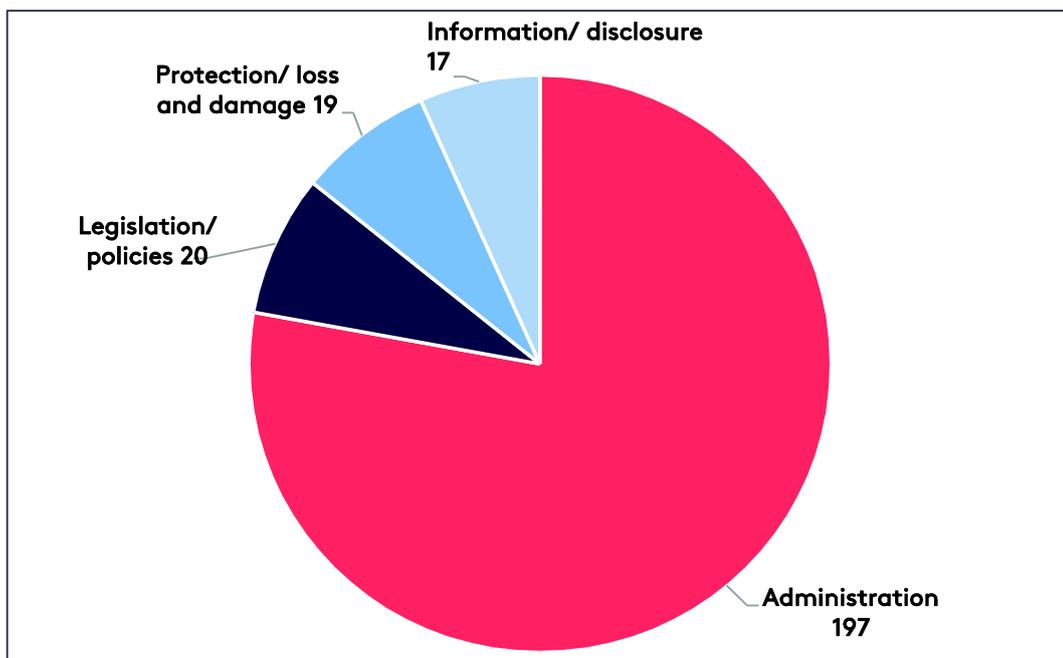


Source: US climate litigation database and Climate Change Litigation of the World

Climate litigation has many objectives, but most cases concern specific projects

To assess the rationale for climate-related litigation, it is useful to group court cases into different categories, depending on their core objective. Box 2 distinguishes cases concerning administration, information/disclosure, legislation/policies, and protection/loss and damage. Each court case may be motivated by one or several of these objectives, although the overwhelming majority were concerned with administrative issues in specific projects (Figure 8).

Figure 8. Number of cases by core objective



Source: Climate Change Litigation of the World. Note: The categorisation follows the literature on dominant litigation prototypes (Markell and Ruhl 2012; Wilensky 2015), with some adjustments.

Box 2. Climate litigation cases have different objectives

Administration: Litigation that challenges particular projects or activities. In project-based cases, plaintiffs might question the greenhouse gas emissions that result from the licensing of a particular activity or project; for example, this has happened in cases that have challenged emissions from coal-fired plants in Australia, New Zealand and the United Kingdom. The challenge can also involve the consideration of direct greenhouse gas emissions by Environmental Impact Assessments (EIA). Also within this category are included lawsuits challenging the allocation of allowances in the European Union Emissions Trading System (EU ETS). The majority of cases in the database fall into this category, consisting of 78 per cent of the total (n=197).

Information/disclosure: Cases in which the plaintiffs go to courts to require further information from governments or emitting sources. Cases can also involve climate risk disclosure, or claims for misleading or incomplete information. This includes cases such as the German Federation for the Environment and Nature Conservation (BUND) and Germanwatch versus Federal Republic of Germany (2006), in which two NGOs successfully invoked the German Access to Environmental Information Act to compel the government to release information on the climate change impacts of German export credits. This category accounts for 7 per cent (n=17) of the total, with trends generally consistent over time.

Legislation/policies: Litigation that calls for new laws and policies or halts to existing ones. These cases would typically be brought against governments in order to drive the course of climate change policies and regulation. A key example is the Urgenda case in the Netherlands (2015), in which the Hague District Court agreed with the claimant – environmental non-governmental organisation Urgenda – and the order that, by 2020, the Dutch government is to reduce the country's emissions by at least 25 per cent from 1990 levels, rather than its own projected 17 per cent reduction. This category also covers cases where lawsuits are used to interpret or enforce existing legislation. An example is the case of Ashgar Leghari versus Federation of Pakistan (2015), in which the national government was ruled as failing to carry out its climate policy. Lawsuits to enforce national commitments to international treaties such as the Kyoto Protocol or the Paris Agreement can be included in this category. This is the case, for example, for a lawsuit in Ukraine requiring mitigation action based on the government's commitments under the Kyoto Protocol. This category accounts for 8 per cent (n=20) of the total. All of these cases were filed after 2012.

Protection/loss and damage: Lawsuits dealing with personal property damage or injury caused by climate change-related events. This includes cases where plaintiffs argue that energy producers contribute substantially to climate change and are therefore responsible for climate change-related injuries suffered by them. For example, in the case of Saúl Luciano Lliuya versus RWE (2015), the former, a Peruvian farmer and mountain guide, brought a case against the German energy company as the largest emitter of CO₂ in Europe, for causing damaging impacts to his Andean home region. This category accounts for 8 per cent (n=19) of the total, with trends generally consistent over time.

Another interesting distinction can be made between cases concerned with climate change mitigation (reducing emissions) and cases about adaptation to climate change risks. For example, in the case Friends of the Earth versus the Governor in Council et al. (2008), Friends of the Earth sought a declaration from the court that the Canadian government had failed to meet the legal requirements of the Kyoto Protocol by missing deadlines and failing to publish regulations. This case was coded as mitigation. In the Ashgar Leghari versus Federation of Pakistan case, the Lahore High Court mandated the government to implement its climate adaptation plan.

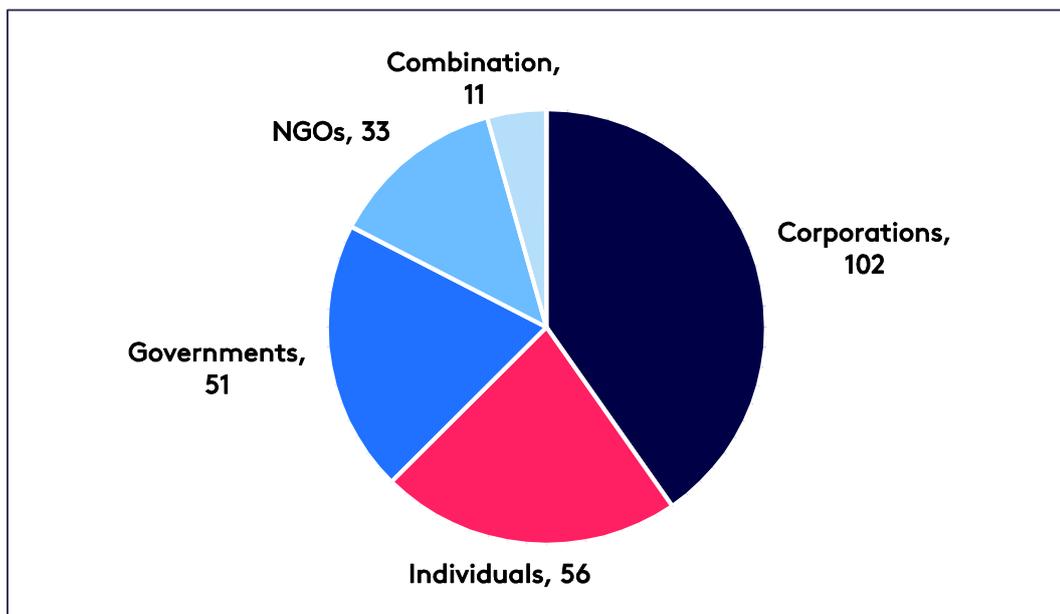
Mitigation was the primary motivation in 78 per cent of the cases reviewed. This also resonates with the finding that a majority of the cases are regulatory challenges. Most climate change regulations in this sample of countries concern emission reductions, although there are some, such as Australia, where there are notable regulatory policies on adaptation, mostly about coastal planning and risks from climatic hazards.

Most court cases are brought by firms

In terms of plaintiffs, the largest number of cases (n=102, representing 40 per cent of the sample) were brought by corporations (Figure 9). Claims brought by corporations are mostly filed against governments, and aim to overturn administrative decisions to not grant a licence (e.g. for coal-fired power plants, water extraction, housing developments) on the basis of climate change, climate variability, or challenge allocation of allowances under an emissions trading scheme or governmental scheme (e.g. for production of renewable energy).

This observation is consistent with the finding that most of the cases reviewed are challenges to particular projects or activities (categorised as ‘administration’). Governments (51 cases) and individuals (56) are the next most represented, each with about a fifth of the cases in the database. NGOs (33 cases) account for 13 per cent of the cases. Interestingly, the remaining 11 cases feature a combination of plaintiff types (for example, NGO and corporation, individual and NGO). For instance, a 2017 court case in Austria to prevent construction of a third runway at Vienna’s airport was brought by an NGO (Anti-Aircraft Noise Society) and individuals in combination.

Figure 9. The proportion of litigation cases in the database, by plaintiff type



Source: *Climate Change Litigation of the World*

Governments are the most frequent defendants

In terms of defendants, governments are being sought most of the time (79 per cent of the sample). This is consistent with the idea that corporations are taking governments to court regarding specific projects or challenging regulations. However, it is important to note that while a majority of the cases brought against governments are from corporations (86 cases, or 43 per cent of cases brought against governments), individuals (42 cases), other government agencies (22 cases), and NGOs (24 cases) also feature.

The second most prominent defendant type is corporations (at 13 per cent). For five cases, no defendant type could be identified since the case was an advisory opinion on a climate change-related issue rather than a litigation battle.

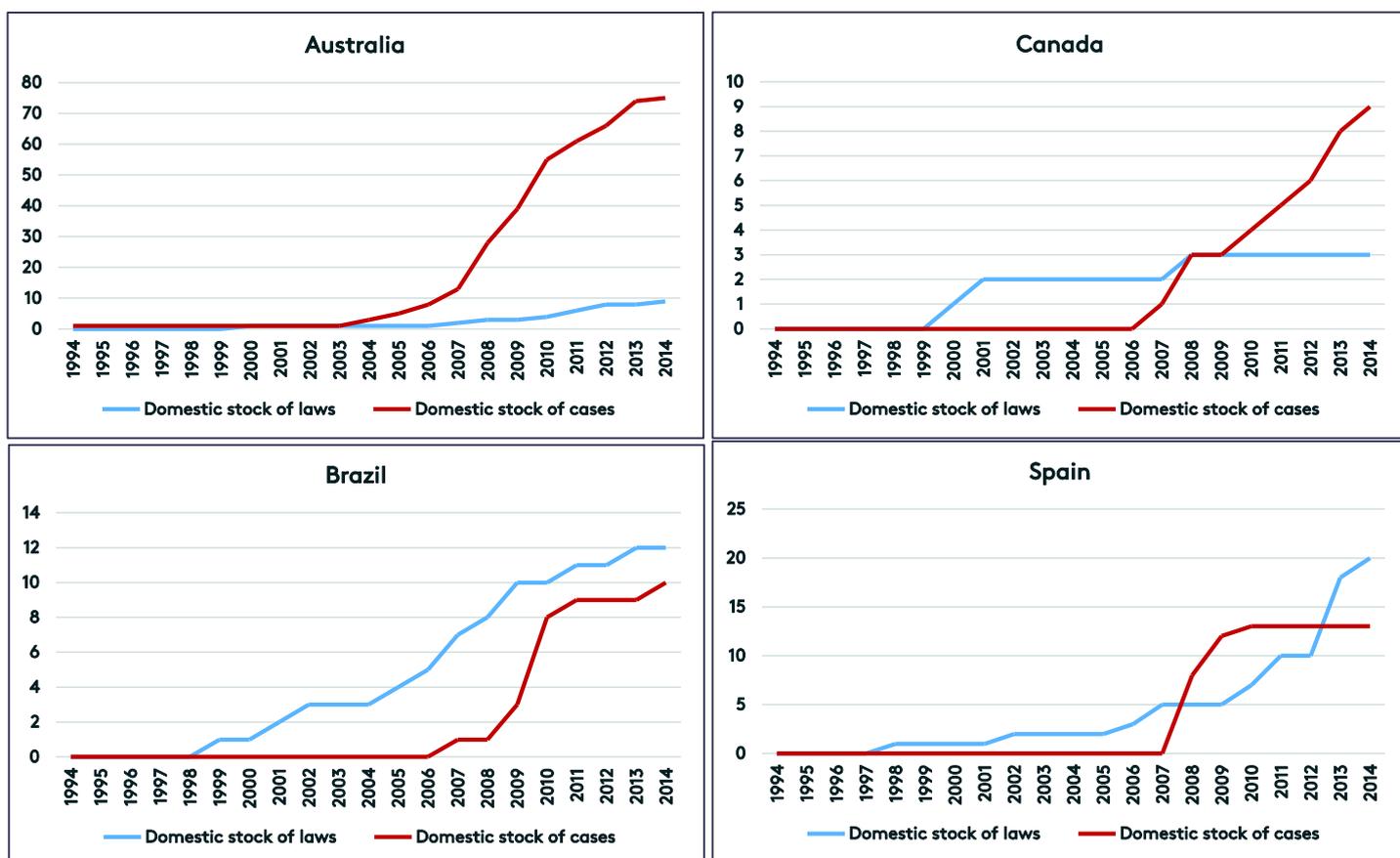
Two-thirds of court rulings strengthen or preserve existing climate regulations

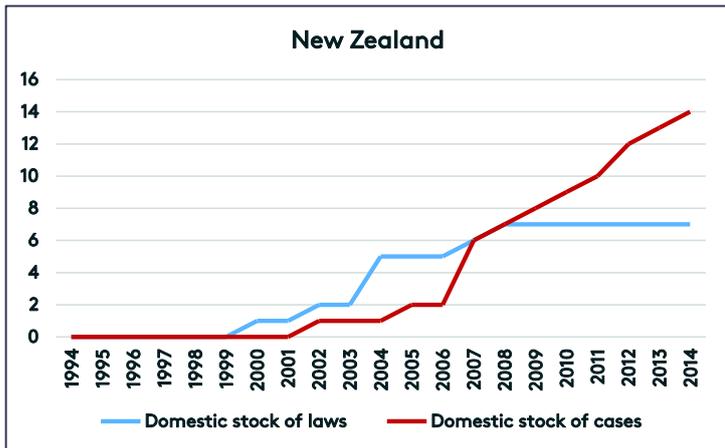
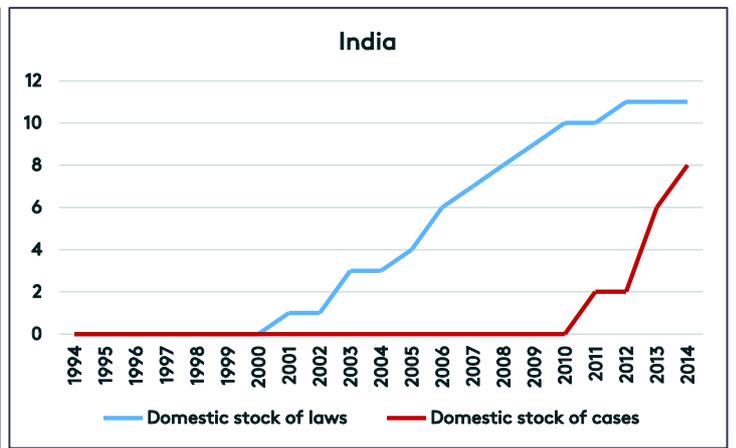
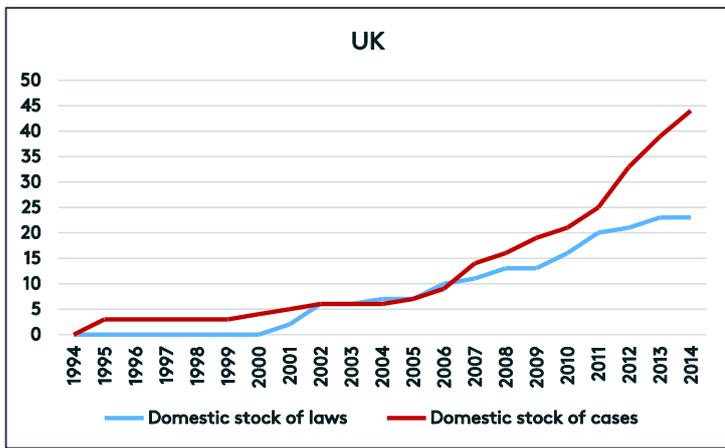
Climate litigation is a double-edged sword. On the one hand, it can be used to facilitate climate regulation and hold policymakers to account, by driving, enforcing and clarifying climate policies and legislation – or in some cases substituting for absent or insufficient national legislation. On the other, litigation can be used to oppose or weaken climate regulation. For example, corporations can use the courts to question what they consider to be excessively stringent standards or requirements. Rather than being static, climate legislation and policies then become dynamic instruments, with challenges in the court shaping their evolution.

An assessment of existing court cases suggests that on balance courts have so far tended to enhance, rather than hinder, climate regulation (Setzer and Bangalore 2017). Out of a total of 241 court cases analysed, 132 cases (55 per cent) were categorised as enhancing climate regulation and 24 cases (10 per cent) were judged as neutral; 85 cases (35 per cent) were judged as hindering tighter climate policies. (The remaining 12 cases in the database are ongoing.) This suggests that so far climate litigation has had a constructive influence on regulation in general, including on climate regulation.

We have yet to understand which factors influence these outcomes and how this influence varies across countries. There is also no clear pattern between the number of climate laws adopted in a country and the number of court cases. In Canada, New Zealand and Australia litigation is increasing whereas legislative activity has plateaued. In Spain the situation is the other way round. In the UK, Brazil and India legislation and litigation are both growing (Figure 10).

Figure 10. The growth in court cases and number of laws over time





Note: The analysis was limited to the seven countries in the database with at least 10 court cases.

Source: Authors, based on Climate Change Litigation of the World

4. Conclusions

Opponents of climate change legislation often ask why their country should be the only one taking action. It is now overwhelmingly clear that this argument is misguided. The databases on which this report is based contain more than 1,200 climate laws and over 250 relevant court cases. No country is acting alone.

However, countries differ in their approach to climate policy. Some rely on legislated acts of parliament (e.g. Mexico, the UK), while others depend on executive orders (e.g. Indonesia, Russia) or strategic policy documents (e.g. South Africa). Acknowledging and understanding these variations is crucial. It helps to develop a sense of good practice in climate legislation, but more importantly it engenders mutual trust in the individual efforts that each country makes.

In time, this will enable the ratcheting up of the Nationally Determined Contributions that countries have pledged to make. The science is clear that the pledges made to date are insufficient to keep the rise in global mean temperature well below 2°C (Rogelj et al. 2016). There are similar gaps with respect to our preparedness for a 2°C world (Fankhauser and McDermott 2016).

The policy prescriptions to address these gaps are clear. We still need to learn more about different policies and institutional designs and how they work in different circumstances. Increasingly, climate change policy also involves the courts and policy-makers at the sub-national level.

The real difficulty is in the politics of enacting the required measures and maintaining that commitment through the political cycle. Understanding the public acceptability of different policy solutions is therefore as important as knowing how they work technically.

References

- Bößner, S. H. van Asselt, G.J. Clochard, E. Alberola, A. Türk, N.A. Spyridakis, N. Fujiwara, and W. van der Gaast (2017). *Report on climate change mitigation policy mapping and interaction*. CARISMA Project Deliverable 5.1. Brussels: European Commission.
- Fankhauser, S. and T. McDermott, eds. (2016). *The Economics of Climate-Resilient Development*. Cheltenham: Edward Elgar.
- Fankhauser, S. and N. Stern (2017). 'Climate Change, Development, Poverty and Economics', in: K. Basu, D. Rosenblatt and C. Sepulveda, eds., *The State of Economics, the State of the World*, Cambridge, MA: MIT Press, forthcoming.
- Markell, D.L. and Ruhl, J.B. (2012). 'An Empirical Assessment of Climate Change In The Courts: A New Jurisprudence Or Business As Usual?', *Florida Law Review*, 64(1), 15-86.
- Nachmany, M., Fankhauser, S., Davidová, J., Kingsmill, N., Landesman, T., Roppongi, H., ... & Townshend, T. (2015). *The 2015 Global Climate Legislation Study - A Review of Climate Change Legislation in 99 Countries*. London: Grantham Research Institute on Climate Change, London School of Economics.
- Nachmany, M., A. Abeysingh, S. Barakat (2017). 'Climate legislation in Least Developed Countries.' In: Averchenkova, A., Fankhauser, S., Nachmany, M. (eds.). 2017. *Trends in Climate Change Legislation*, London: Edward Elgar, forthcoming.
- Rogelj, J., Den Elzen, M., Höhne, N., Fransen, T., Fekete, H., Winkler, H., Schaeffer, R., Sha, F., Riahi, K. and Meinshausen, M., (2016). Paris Agreement climate proposals need a boost to keep warming well below 2 C. *Nature*, 534(7609), 631-639.
- Setzer, J. and M. Bangalore (2017). 'Regulating climate change in the courts.' In: Averchenkova, A., Fankhauser, S., Nachmany, M. (eds.). 2017. *Trends in Climate Change Legislation*, London: Edward Elgar, forthcoming.
- Townshend, T., Fankhauser, S., Matthews, A., Feger, C., Liu, J., and Narciso, T. (2011). 'Legislating Climate Change at the National Level.' *Environment*, 53(5), pp. 5-16.
- UNFCCC (2015). *Adoption of the Paris Agreement, 21st Conference of the Parties*. Paris: United Nations.
- Wilensky, M. (2015). 'Climate Change in the Courts: An assessment of Non-U.S. Climate Litigation', *Duke Environmental Law & Policy Forum*, Vol. XXVI, 131-179.
- World Bank (2017). World Bank Country and Lending Groups. Accessed March 2017: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>

Appendix 1. Methodology and scope

This report builds on two databases:

- Climate change laws of the world
- Climate change litigation of the world

The databases have been put together by the Grantham Research Institute on Climate Change and the Environment at the London School of Economics and Political Science and the Sabin Center on Climate Change Law at the Columbia Law School, New York. The full datasets are available on the website of the Grantham Research Institute (www.lse.ac.uk/GranthamInstitute/legislation).

The searchable database is complemented by detailed country profiles for 99 countries (including a summary of each country's policy approach to climate change, a factsheet with relevant indicators, and a list of laws, policies and litigation cases), and partial country profiles for another 65 (including indicators and the list of law, policies and litigation cases).

The database builds on several years of data collection by both the Grantham Research Institute and the Sabin Center, including the collaboration of Grantham with GLOBE International, the Global Legislators Organisation, on a series of *Climate Legislation Studies*. These can all be accessed via the Grantham Research Institute's website, as detailed above.

Invitation to contribute

We aim for the datasets to be as comprehensive and accurate as possible. However, there is no claim to have identified every relevant law, policy or court case in the countries covered.

We invite the readers of this report to draw our attention to any entries we may have missed. Please send your comments (attaching supporting documents if possible) to: gri.cgl@lse.ac.uk.

Legislation

As of March 2017, the climate legislation database consists of 1,261 climate change laws or policies of similar relevance in 164 jurisdictions (163 countries and the European Union as a bloc). The climate change legislation data are maintained and updated regularly by a team at the Grantham Research Institute.

The database is limited to laws and policies at the national level, and excludes action at regional and local levels of government. These levels are particularly significant in countries with federal structures (such as Australia, Brazil, India and the United States).

The European Union is surveyed as a single policy area, but some member states are also considered individually. EU directives are not repeated in individual member states' data unless that country has implemented legislation that goes significantly beyond the scope of the directive. For example, the French *Farming Policy Framework* goes beyond the EU *Biofuels Directive*.

The definition of 'climate change legislation' is not clear-cut. The database includes legislation and regulation that refers specifically to climate change or that relates to reducing energy demand, promoting low carbon energy supply, tackling deforestation, promoting sustainable land use, sustainable transport, or adaptation to climate impacts. This definition is applied with flexibility on a

country-by-country basis to ensure the best reflection of the overall legislative and regulatory response to climate change in the study countries. However, general environmental laws and policies, including water, biodiversity or desertification-related policies, are not included unless they are explicitly climate change-focused.

For laws dealing with climate change adaptation, issues of delineation are particularly prominent. Many adaptation policies are embedded in policies in the realms of development, general planning, risk-reduction and disaster management, water and health, which makes them difficult to identify. The database does not capture these policies unless they are explicitly climate change-related.

Laws and policies addressing forests and land use are included as long as they explicitly support climate change mitigation through activities that reduce emissions and increase carbon removals. Typically (but not exclusively), these would be under the REDD+ framework.² General forest laws that regulate forest or timber management are not included, even if they have implicit consequences for climate change mitigation.

A distinction is made between laws that are legislative in origin (passed by parliaments) and executive in origin (enacted by governments). The understanding of framework laws – the overarching laws that create a unifying basis for climate policy in many countries – has been refined and additional information about emissions targets and climate policies included.

In the case where both legislative and executive instruments exist, prominence is generally given to legislative over executive instruments. Therefore, in cases where a legislative act (law) has been enacted to fully implement an executive instrument (such as a policy or plan) any reference to the latter has been removed, leaving a reference to the legislative instrument only. However, where a legislative act covers only part of an executive instrument (for example, a law addressing emission reductions from transport, whereas a policy exists to address emission reductions from multiple sectors), references to both have been retained.

Litigation

As of March 2017, the litigation dataset consists of 253 climate-related court cases in 25 jurisdictions for which data exists (excluding the United States; see below for explanation of this exclusion).

Documented climate change cases are collected on a regular basis by the Sabin Center with the help of lawyers and law professors around the world, and are assessed against the criteria described below by attorneys with experience in energy, environmental and climate change-related law. Those attorneys draft case summaries and categorise cases for entry into the database. Volunteer peer reviewers review those summaries for accuracy and to ensure that they contextualise the case correctly.

The litigation cases included in the database meet several criteria: they have been brought before an administrative, judicial or other investigatory body; they raise issues of law or fact regarding the science of climate change and/or climate change mitigation and adaptation policies or efforts; most but not all contain keywords, such as climate change, global warming, global change, greenhouse gas/GHG, sea level rise. Cases that make only passing reference to the fact of climate change, its causes or its effects are excluded if they do not address in direct or meaningful fashion the laws, policies or actions that compel, support or facilitate climate mitigation or adaptation. Cases that seek incidentally to accomplish (or prevent) climate change policy goals without reference to climate change issues are not included. Thus, for example, this database does not include cases in which the

² Mitigation measures related to 'Reducing Emissions from Deforestation and forest Degradation (REDD)' that also include conservation, sustainable management of forests and enhancement of forest carbon stocks, hence REDD+.

parties seek to limit air pollution from coal-fired power plants but do not directly raise issues of fact or law pertaining to climate change.

While this dataset is the largest of its kind to date and is broadly representative, it is also quite possibly incomplete. The case list relies heavily on the voluntary efforts of individuals and on media reports. To our knowledge, jurisdictions from which no climate change cases are reported to us have not seen any. However, it is possible that this absence is the result of our lack of access to judicial opinions in one or more jurisdiction rather than because such opinions have not been issued. Thus, that the database is highly uneven, with the majority of the cases attributable to only a few jurisdictions (Australia, the EU, New Zealand and the UK), likely owes to the laws and litigiousness of those jurisdictions, but it may also be due in part to information collection gaps.

Why is the United States not included?

It is important to note that the litigation dataset does not include the United States. That information is contained in a parallel database, with over 700 entries, maintained by the Sabin Center and Arnold and Porter Kaye Scholer, available at: <http://wordpress2.ei.columbia.edu/climate-change-litigation/us-climate-change-litigation/>.

Notwithstanding the importance of litigation in the US, our analysis aims to highlight jurisdictions that have not been studied in detail previously. Moreover, the high number of lawsuits in the US alone makes a comparison with other jurisdictions impracticable.

Appendix 2. List of countries included in the database

Legislation (countries and number of laws per country)

Afghanistan*	8	Egypt	6	Libya	0	Senegal*	11
Algeria	15	El Salvador	7	Liechtenstein	7	Serbia	5
Andorra	8	Equatorial Guinea*	0	FYR Macedonia	5	Seychelles	6
Angola*	11	Eritrea*	2	Madagascar*	3	Sierra Leone*	8
Argentina	10	Ethiopia*	9	Malawi*	7	Singapore	9
Australia	12	European Union	24	Malaysia	6	Slovakia	17
Austria	10	Fiji	3	Maldives	4	Slovenia	4
Bangladesh*	10	Finland	8	Mali*	16	Solomon Islands*	6
Belarus	12	France	10	Marshall Islands	2	Somalia*	0
Belgium	9	Gabon	7	Mauritania*	4	South Africa	4
Belize	2	Gambia*	6	Mauritius	4	South Korea	12
Benin*	2	Germany	17	Mexico	8	South Sudan*	2
Bhutan*	5	Ghana	7	Micronesia	3	Spain	22
Bolivia	6	Greece	12	Mongolia	10	Sri Lanka	8
Botswana	2	Grenada	6	Morocco	7	Sudan*	0
Brazil	15	Guatemala	7	Mozambique*	11	Swaziland	4
Brunei Darussalam	4	Guinea*	2	Myanmar*	7	Sweden	9
Bulgaria	10	Guinea-Bissau*	2	Namibia	4	Switzerland	8
Burkina Faso*	8	Guyana	2	Nauru	4	Tajikistan	7
Burundi*	4	Haiti*	1	Nepal*	3	Tanzania*	10
Cabo Verde	9	Honduras	13	Netherlands	9	Thailand	11
Cambodia*	6	Hungary	7	New Zealand	7	Timor Leste*	6
Cameroon	4	Iceland	6	Nicaragua	11	Togo*	13
Canada	8	India	11	Niger*	4	Tonga	6
Central African Rep*	2	Indonesia	22	Nigeria	4	Trinidad and Tobago	6
Chad*	1	Iran	8	Norway	9	Tunisia	4
Chile	11	Iraq	1	Pakistan	10	Turkey	7
China	8	Ireland	13	Palau	8	Tuvalu*	7
Colombia	11	Israel	12	Panama	9	Uganda*	4
Comoros*	0	Italy	22	Papua New Guinea	7	Ukraine	8
Congo	7	Jamaica	4	Paraguay	12	United Arab Emirates	4
Costa Rica	11	Japan	9	Peru	14	United Kingdom	23
Côte d'Ivoire	9	Jordan	3	Philippines	15	USA	14
Croatia	17	Kazakhstan	7	Poland	9	Uruguay	18
Cuba	7	Kenya	6	Portugal	10	Uzbekistan	4
Czech Republic	6	Kiribati*	4	Romania	13	Vanuatu*	6
DR Congo*	5	Kuwait	2	Russia	9	Venezuela	3
Denmark	11	Kyrgyzstan	8	Rwanda*	7	Vietnam	14
Djibouti*	5	Lao PDR*	5	Samoa	10	Yemen*	6
Dominican Republic	6	Lesotho*	5	S. Tome & Principe*	2	Zambia*	15
Ecuador	9	Liberia*	5	Saudi Arabia	3	Zimbabwe	6

* starred countries are classified as least developed countries (LDCs) (see <http://unohrrls.org/about-lDCs/>)

Litigation (countries and number of cases per country)

Australia	77	Ecuador	1	Netherlands	2	Sweden	1
Austria	1	European Union	42	Nigeria	1	Switzerland	1
Belgium	1	France	4	Norway	1	Ukraine	2
Brazil	11	Germany	3	Pakistan	2	United Kingdom	49
Canada	12	India	9	Philippines	1		
Colombia	1	Ireland	1	South Africa	1		
Czech Republic	1	New Zealand	16	Spain	13		

This report is the sixth stock-take in a series of global Climate Legislation Studies that dates back to 2010. The 2017 edition covers over 1,200 climate laws in 164 countries – including the world’s 50 largest greenhouse gas emitters and 93 of the top 100 – up from 99 countries in 2015. For the first time it also includes analysis of climate change litigation, covering a dataset of 253 cases across 25 jurisdictions.

The report summarises trends in the pace of law-making, the focus of legislation, laws in Least Developed Countries, the number of litigation cases and their different objectives, plaintiffs and outcomes.

The insights are drawn from the *Climate Change Legislation and Litigation of the World* online platform. Compiled jointly by the Grantham Research Institute on Climate Change and the Environment and the Sabin Center on Climate Change Law at the Columbia Law School, the platform is hosted at www.lse.ac.uk/GranthamInstitute/Legislation. It features a searchable database, expanded for 2017, on climate change laws and court cases in the countries covered, complemented by country profiles.