

Institute for Public Policy Research



# OUR RESPONSIBILITY

A NEW MODEL OF  
INTERNATIONAL  
COOPERATION  
FOR THE ERA OF  
ENVIRONMENTAL  
BREAKDOWN

DISCUSSION PAPER 3

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# CONTENTS

<b>Summary</b> .....	<b>3</b>
<b>About this paper</b> .....	<b>3</b>
<b>Introduction</b> .....	<b>4</b>
<b>1. The need for greater international cooperation has never been greater</b> .....	<b>5</b>
<b>2. Political responses are undermining, not strengthening, international cooperation</b> .....	<b>6</b>
<b>3. The current system of international cooperation is inadequate</b> .....	<b>7</b>
<b>4. A new model of international cooperation under conditions of environmental breakdown</b> .....	<b>10</b>
A fair share of sustainability targets.....	13
Reforming global economic structures .....	14
<b>Conclusion</b> .....	<b>15</b>
<b>References</b> .....	<b>16</b>

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# SUMMARY

Environmental breakdown is accelerating and poses an unprecedented threat to international cooperation. This challenge comes at a time when the multilateral order is fracturing. A new positive-sum model of international cooperation is needed, which should seek to realise a more sustainable, just and prepared world. This necessarily requires communities and countries to better recognise their cumulative contribution to environmental breakdown, and their current capability to act. Wealthy nations and communities not only contribute most to the stock of environmental breakdown, they preside over and benefit from an economic development model founded on unsustainable environmental impacts and global power imbalance.

Accordingly, we develop proposals for a new model of international cooperation as a means of building a positive-sum system capable of better responding to environmental breakdown. Using the UK as a case study, we explore the role one nation can play now in helping build this system globally. Foundational to this model is the adoption of an explicit 'fair share' target for greenhouse gas emissions, through which nations contribute to a share of global emissions based on their cumulative contribution to climate breakdown and their current capability to act. We argue that a wealthy nation with a relatively large contribution to environmental breakdown like the UK should shoulder greater responsibility than it does at present. In calculating a fairer share for the UK, we recommend that the government commit to support less industrialised nations to reduce their collective greenhouse gas emissions by 4.4 per cent below their 2010 levels by 2030. This would constitute a contribution to global emissions reductions equivalent to around 200 per cent of UK emissions below 1990 levels, which is consistent with calculations of the UK's fair share based on its capacity and responsibility. Doing so could be achieved through a range of means, including by committing £20 billion to the Green Climate Fund up to 2030, as well as using the UK's international influence to support other countries and communities to reform economic structures that promote environmental breakdown and its unjust impacts. Doing so could realise a new role for the UK after Brexit and in the context of its presidency of the UN Climate Conference in 2020.

## ABOUT THIS PAPER

This is the third in a series of short discussion papers. This series seeks to inform debate over the relationship between policy and politics and environmental breakdown, supporting education in economic, social and political sciences. This paper explores the challenge to international cooperation from environmental breakdown. The UK is used as a case study to explore how an individual nation can contribute to developing a new model of international cooperation fit for the conditions of environmental breakdown. In doing so, it seeks to help advance environmental improvement, sustainable development, and to relieve poverty and disadvantage.

This discussion paper series is part of a major IPPR research programme —*Responding to Environmental Breakdown*— that seeks to understand how to realise a more sustainable, just and prepared society in response to environmental breakdown. The scope of this project is global but uses

the UK as a case study to explore the major issues and policy responses. *Responding to Environmental Breakdown* is part of IPPR's wider work on environmental issues, which includes the landmark *Environmental Justice Commission*, which will help develop the ideas and policies to bring about a rapid green transition that is fair and just.

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## INTRODUCTION

Mainstream political and policy debates have failed to recognise that human impacts on the environment have reached a critical stage and are eroding the conditions upon which socioeconomic stability is possible (Laybourn-Langton et al 2019). These impacts are not isolated to climate breakdown and encompass most other natural systems—including soil, biodiversity and the oceans—driving a complex, dynamic process of overall environmental breakdown that has reached dangerous levels. The consequences include growing economic instability, famine, large-scale involuntary migration, and conflict. In all, environmental breakdown impacts all areas of policy and politics and increases the chance of the collapse of social and economic systems at local, national and even global levels. The historical disregard of environmental considerations in most areas of policy has been a catastrophic mistake.

Within the UK and globally, the consequences of environmental breakdown fall hardest on communities and countries who are both least responsible for the problem and least prepared for its increasingly severe effects. In addition, environmental breakdown interacts with other inequalities, such as class, ethnicity and gender, making it a fundamental issue of justice (CEJ 2019). Environmental breakdown is a result of the structures and dynamics of social and economic systems, which drive unsustainable human impacts on the environment (Laybourn-Langton and Hill 2019). While providing high living standards for many people, these systems preside over large social and economic inequalities and fail to provide for all. By driving environmental breakdown, these systems are eroding the conditions upon which human needs can be met at all. Therefore, in response, two overall socioeconomic transformations are needed, to make societies more:

- **sustainable and just**, bringing human activity to within environmentally sustainable limits while tackling inequalities and improving quality of life
- **prepared**, increasing levels of resilience to the impacts of accelerating environmental breakdown.

This discussion paper explores the implications of environmental breakdown for cooperation between nations, international institutions, and the treaties and other mechanisms that bind these relationships. It argues that the domain of risk brought about by environmental breakdown poses an unprecedented threat to international cooperation, with the social and economic destabilisation wrought by environmental shocks being transmitted across borders, negatively impacting international relations. There is much that nations and international institutions need to do in order to be prepared for this situation, as well as to recognise and act on the systemic drivers of environmental breakdown and ameliorate the large injustices that result. This paper concludes by using the UK as a case study to explore how recognising the cumulative responsibility and contemporary capability of one nation can feed into the creation of a new model of international cooperation under conditions of environmental breakdown and discusses a number of major policies to achieve this.

## 1.

# THE NEED FOR GREATER INTERNATIONAL COOPERATION HAS NEVER BEEN GREATER

The consequences of environmental breakdown are systemic and uncontained by the boundaries of the nation state. Globalised political, social and economic systems transmit the impacts of local events across borders. For example, a fall in food production resulting from an extreme weather event or through the loss of soil fertility does not just affect those countries in which these events occur (FAO 2018, EIU 2018). Instead, its impacts, including food shortages and increased prices, are transmitted across supply chains and other components of regional and global food systems (GFS 2015). In turn, these consequences interact with existing social and economic trends, compounding and exacerbating them. For example, more than 75 per cent of people experiencing acute, life-threatening food insecurity in 2017 were also affected by extreme weather events and other shocks resulting from climate and other environmental change (FAO 2018). Overall, environmental breakdown acts as a ‘threat multiplier’, driving and amplifying social and economic disruption, with far-ranging consequences for stability (WEF 2018).

Over the coming decades, three compounding factors could amplify this process. Firstly, rates of environmental destruction are increasing, and the impacts of the resultant environmental breakdown are growing, from destructive storms to falling crop yields, threatening dangerous ‘tipping points’ after which the functioning of natural systems abruptly shift into highly destabilised states (IPCC 2018, IPBES 2019, Steffen et al 2018). Secondly, these impacts are growing at a time of existing instability and rapid socio-economic change, including high levels of inequality, the diffusion and transition of geopolitical relations, the accelerating spread and impact of digital technology and automation, and changes in demography and consumption habits (MOD 2018). Thirdly, the actions required to mitigate breakdown are structural, involving deep and rapid economic, social and political change across all areas of society and every nation over a matter of decades (IPBES 2019). In short, the increasing frequency and severity of environmental shocks will be transmitted across socio-economic systems, which are already experiencing acute stress, destabilising them over a period in which they must undergo rapid structural change. Such a state of affairs may present a challenge without precedent in human history.

Overall, environmental breakdown is creating a new, complex ‘domain of risk’ facing decision-makers, which is systemic, compounding, and non-linear (Laybourn-Langton et al 2019). The impacts of environmental breakdown on migration provide an illustrative example of the dynamics of this risk domain. Climate breakdown, and wider environmental breakdown, are readily identified factors determining rates of forced migration by governments and multilateral institutions, both directly, as a result of environmental disasters and slow burn environmental stress, and indirectly, as a driver of conflict and multiplier of destabilisation (Estevens 2018, GCM 2018). In 2018 alone, more than 17 million people were estimated to have been displaced by extreme weather and other natural disasters (IDMC 2019). This is happening at a time when the number of people forcibly displaced is at the highest level since the second world war (UNHCR 2016). Into the future, the World Bank estimates that climate breakdown could force over 140 million people to migrate within countries in several regions by 2050 (Rigaud et al 2018), while the UN predicts that 135 million people could be displaced by desertification by 2045 (UN News 2019). Those who are forcibly displaced are exposed to a greater risk of ill health, suffering and conflict (Watts et al 2018, GCM 2018). Predominantly, this

occurs within the countries and surrounding areas where the vast majority of displaced people end up residing, driving regional destabilisation and requiring humanitarian and disaster relief interventions, which both increase the number of systems and countries impacted (UNFCCC 2018, MOD 2018).

In the extreme, environmental breakdown could trigger a catastrophic breakdown of human systems, driving a rapid process of ‘runaway collapse’ in which economic, social and political shocks cascade through the globally linked system – in much the same way as occurred in the wake of the global financial crisis of 2007/08 (Laybourn-Langton et al 2019, WEF 2018, USAWC 2019). For example, many central banks have warned of the potential for financial crises resulting from both the risks to investors of continued exposure to the falling value of carbon assets, which must occur if carbon budgets are to be met, as well as macroeconomic destabilisation associated with infrastructure damage, agricultural losses, and commodity price spikes resulting from environmental shocks (NEF 2017, Rudebusch 2019). For example, global economic losses from extreme weather are increasing and exceeded \$210 billion in 2018 alone, of which less than half were insured, with losses exacerbated by climate breakdown (Aon 2018, Lloyds 2014). In turn, the insurance industry is concerned that accelerating climate breakdown could “make it increasingly difficult to offer the affordable financial protection that people deserve, and that modern society requires to function properly” (Neslen 2019), as, in the words of Mark Carney, the governor of the Bank of England, “the tail risks of today” become “the catastrophic norms of the future” (Bank of England no date, Carney 2015).

Greater stress resulting from the increased severity and frequency of environmental shocks could erode the capacity of human systems to respond to and recover from instability, leading to failure or a new, sub-optimal level of function (WEF 2018). In the case of the financial crisis, while collapse of the global economic system was averted, the crisis caused numerous and sustained “economic, societal, political and geopolitical disruptions” (ibid).

## **2. POLITICAL RESPONSES ARE UNDERMINING, NOT STRENGTHENING, INTERNATIONAL COOPERATION**

The domain of risk imposed by environmental breakdown demands a stronger system of international cooperation. Yet international cooperation is currently being undermined. For example, as progressive international forces struggle to maintain the existing multilateral order, ethno-nationalist political forces—those propounding nationalist politics founded on ethnic identities—in powerful Western nations have been able to frame the recent increase in global forced migration as a serious, even existential threat to these countries (Ratkovic 2017, Davis and Deole 2017). These narratives defy the fact that relatively few displaced people seek refuge in Western nations and, overall, migration can provide economic and social benefits to countries in excess of the cost of accepting and hosting them (ISPI 2017, Vargas-Silva and Sumption 2019). Regressive political forces have exploited misconceptions, becoming a factor in the militarisation of borders in Western countries and growing hostility of migration policy, including the ‘externalisation’ policy of the EU, by which the responsibility for the management of flows of displaced is outsourced to non-EU countries (Arci 2019, Akkerman 2018).

The growth of ethno-nationalist politics could drive greater political and economic isolation and is often associated with denial of science or the delay of actions to slow environmental degradation (Schaller and Carius 2019), both of which could negatively impact international cooperation at this crucial time. Furthermore, environmental breakdown has the potential to push global and local economic, social and political systems into a state of enduring disruption. Under these conditions, zero-sum international relations strategies could become more attractive for nations and regional blocs. The consequences of resource constraints, increasing environmental impacts, and systemic instability could lead nations to discriminate against cooperation, favouring unilateral action to secure resources, supply chains and other economic interests and against security threats, real or perceived. In turn, these responses could focus on proximate events and not the root causes of destabilisation—namely, the loss of environmental stability resulting from global degradation of natural systems—crowding out internationally coordinated efforts to slow environmental breakdown itself.

Pressingly, such dynamics could exacerbate the acute injustices relating to environmental breakdown. The impacts of breakdown fall hardest on those who are least responsible and have the least capacity to protect themselves, with the UN concluding that the current trajectory of climate breakdown alone is expected to push tens of millions of people into poverty and “threatens to undo the last 50 years of progress in development, global health, and poverty reduction” (HRC 2019). Fracturing international cooperation could worsen this situation by diminishing efforts to slow environmental degradation and provide assistance to those experiencing its accelerating impacts, creating a world, in the words of the UN Special Rapporteur on extreme poverty and human rights, of “climate apartheid” in which the “wealthy pay to escape overheating, hunger, and conflict while the rest of the world is left to suffer” (ibid). The resulting destabilisation, including political extremism and social fragmentation, could further erode international cooperation. In the extreme, such dynamics could threaten a collapse in international cooperation as countries turn inward to the perceived security of the nation state in order to protect their populations and interests, or lash outward. Under conditions of accelerating environmental breakdown, a fracturing in international cooperation could prove to be a catastrophic outcome.

### 3. THE CURRENT SYSTEM OF INTERNATIONAL COOPERATION IS INADEQUATE

Under conditions of environmental breakdown, a positive-sum model of international cooperation is essential. Such a model should be underpinned by a shared commitment to create a world that is more:

- **sustainable**, through binding global agreements that commit countries to monitoring and rapidly reducing the full range of drivers of environmental breakdown, not just greenhouse gas emissions, and action to transform global economic structures and mobilise unprecedented financial and technological resources in service of doing so
- **just**, by ensuring actions are underpinned by recognition of past and present responsibility for environmental breakdown and seek to undo the role of global economic structures in facilitating the injustices associated with its impacts, ensuring rapid reductions in the maldistribution of power and resources as a means to empower countries and communities across the world

- **prepared**, by ensuring countries coordinate to alleviate the loss and damage<sup>1</sup> that will be and has been caused by environmental breakdown as well as manage largescale and multiple concurrent crises, ensuring positive-sum cooperation is maintained under conditions of acute systemic stress.

Some progress has been made toward realising a state of international cooperation that adheres to these commitments. These include the following.

- **Understanding of environmental breakdown.** International research institutions and networks, including the Intergovernmental Panel on Climate Change (IPCC), Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and those constituted through universities and NGOs, have enabled an increasingly sophisticated understanding of the holistic challenge of environmental breakdown. Many of these developments have been made possible by improvements in measurement, data collection and analysis and have been complemented by the (under-recognised) knowledge of indigenous groups and frontline communities across the world (UNESCO no date).
- **International policy frameworks, agreements and treaties.** These have provided mechanisms through which agreement has been mediated and action secured. The UN's sustainable development goals (SDGs) provide a framework for understanding the policy priorities of bringing human activity to within a safe and just space across natural systems (Raworth 2012). The UN climate change convention process led to the Paris Agreement which provides a basis for reducing global emissions. The UN Convention on Biological Diversity (CBD) introduced the Aichi biodiversity targets and is currently building a 'Paris Agreement for nature', setting measurable targets for biodiversity (SRC 2018, CBD no date). The 1987 Montreal Protocol has led to a reduction in ozone destruction (Strahan and Douglass 2018).
- **Role of sub- and non-state actors.** Rapid action on environmental breakdown is being directly taken by sub-state bodies, such as cities. Moreover, campaigners, civil society groups, indigenous communities and trades unions have always been leaders in understanding and acting on environmental breakdown. Recent high-profile examples include legal cases against governments and businesses over their reaction or contribution to climate breakdown and the global spread of the school strike movement (Sullivan 2019, Tollefson 2019, Laville 2019). Sustainable business and finance networks and corporate-NGO coalitions are also taking proactive steps (Grayson and Nelson 2017).
- **Resource transfers.** Global mechanisms for disbursing financial support to less industrialised nations in responding to environmental breakdown include the Green Climate Fund (GFC), established under the UN climate process as part of its recognition of the obligation of wealthier nations to provide finance, technology and capacity-building support, as well as a range of multilateral investment funds (GCF no date).
- **Recognition of justice dimensions.** Some recognition of justice is seen in the rhetoric and substance of international dialogue and agreements. The UN Framework Convention on Climate Change (UNFCCC) recognises different countries' responsibilities and capabilities to respond to climate breakdown (UNFCCC 1992). The Warsaw International Mechanism on Loss and Damage, established in 2013, seeks to enhance action and support, including finance and technology transfers (UNFCCC no date).

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<sup>1</sup> The term 'loss and damage' refers to the harm caused by environmental breakdown (Pidcock and Yeo 2017). *Loss* indicates effects that are permanent and irreversible, such as loss of human life and species loss. *Damage* indicates aspects that can be repaired, such as economic losses.

Overall, significant progress has been made over the last 30 years in developing and expanding international cooperation and capacity in responding to environmental breakdown. However, despite this progress, the current structures and dynamics of international cooperation are failing to engender an adequate response to environmental breakdown. The inadequacies of the current state of international cooperation include the following.

- **Failure to adequately understand and act.** Current commitments to act on climate breakdown under the Paris Agreement are inadequate, with projections estimating dangerous warming in excess of 3°C by 2100 (CAT 2019). In turn, the United States is seeking to withdraw from the agreement altogether and other nations, including Brazil under president Jair Bolsonaro, are implementing policies that accelerate environmental breakdown, eschewing international norms in the process (Tharoor 2019, EIU 2019). Beyond climate breakdown, there is little to no explicit recognition of or action against wider environmental breakdown through international institutions. For example, most of the Aichi targets for biodiversity are set to be missed by the 2020 deadline (Tsioumani 2019), and despite recent attention over fires on the Amazon, there has been a failure to act on systemic drivers of the fires, including global markets for meat and soy (Reed and Lee 2019).
- **Failure to be adequately prepared.** International systems could be unprepared for individual environmental shocks, whether isolated or multiple, much less systemic crises. The Global Commission on Adaptation has concluded that preparation for climate breakdown is “gravely insufficient”, putting tens of millions at risk of poverty and billions at risk of water shortages, and stressed the need for investment in early warning systems for environmental shocks (GCA 2019). There is widespread recognition that the world is not ready for another global financial crisis (King 2019) at a time when the chances environmental breakdown could drive macroeconomic destabilisation are increasing.
- **Failure to adequately address justice dimensions.** Wealthy countries have undertaken the joint commitment to contribute \$100 billion annually by 2020 to address the needs of less wealthy countries through the Green Climate Fund. However, these sums may be unlikely to meet the climate and wider ecological ‘debt’ accumulated by those nations who have disproportionately contributed to environmental breakdown (Climate Debt no date, CERP no date). Moreover, although it discusses loss and damage, the Paris Agreement is explicit that it “does not involve or provide a basis for any liability or compensation” (UNFCCC 2015, Pickering et al 2012). What’s more, international systems have further exacerbated unequal environmental impacts; for example, the IMF disbursed interest-bearing loans to Mozambique after devastating cyclones, even though the country was experiencing a debt crisis (Suffee 2019).

These problems are the result of several factors, including the following.

- **Power and influence of vested interests.** Elite groups use their power and wealth to influence international systems to further their interests, including in programmes of multilateral institutions and trade deals. For example, the Energy Charter Treaty allows private companies to bring cases against states that change their energy policy in private courts, potentially acting as a barrier to action to slow climate breakdown (Eberhardt et al 2019).
- **Destabilisation of multilateral order.** It is generally accepted that the prevailing system of multilateral relations is undergoing unprecedented change and destabilisation, including as a result of globalisation and the power of capital markets, unpredictable unilateral action by nations

and their leaders, and the flouting of international law and conventions (Charbonneau 2019). In 2018, the UN secretary general António Guterres remarked that “[m]ultilateralism is under fire precisely when we need it most” (UN 2018).

- **Global power imbalances.** Historical power imbalances are entrenched institutionally, with many countries underrepresented in key multilateral UN bodies such as the UN Security Council and through the decision-making arrangements of the IMF and World Bank (Brett 2019).

Overall, the global challenge of environmental breakdown requires an unprecedented level of international cooperation. Instead, multilateralism is fragmenting at precisely the wrong time and it is doubtful whether international institutions and arrangements are capable of responding to the compounding shocks imposed by accelerating environmental breakdown. We need a new model of international cooperation fit for the unprecedented challenge of environmental breakdown.

## 4. A NEW MODEL OF INTERNATIONAL COOPERATION UNDER CONDITIONS OF ENVIRONMENTAL BREAKDOWN

In this section we use the UK as a case study to better understand the contribution one nation could make to building a new model of international cooperation under conditions of environmental breakdown. While the unilateral environmental actions of one country are insufficient in the context of a global problem, there is much individual nations can and should do to build a new model of international cooperation that creates the conditions for building a more sustainable, just and prepared world, particularly those with the power and resources enjoyed by countries like the UK.

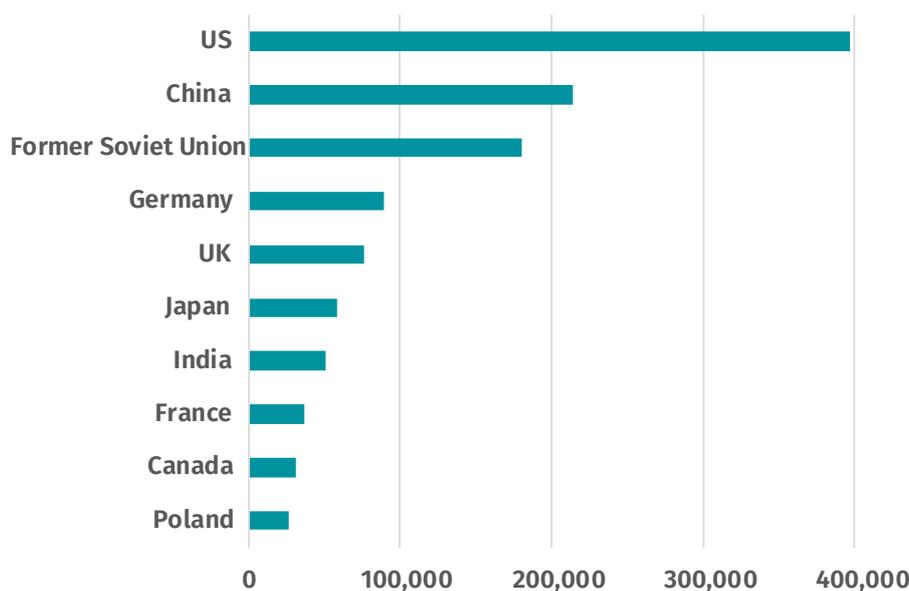
Domestically, political and policy debates over the UK’s international role often focus on its ‘world-leading’ domestic commitments and green economy, as well as its historical position as a leader in understanding and acting on climate and wider environmental breakdown. In many respects this is true. The 2008 Climate Change Act was the first legislation in the world to set legally binding greenhouse gas emissions targets and, in June 2019, the UK became the largest economy to enshrine a net-zero emissions reduction target in law. Globally, the Foreign and Commonwealth Office’s climate diplomacy operations have played a useful role in international negotiations (FCO 2019). The UK has also maintained its commitment to spending 0.7 per cent of gross national income (over £14 billion) on overseas development — one of the highest levels in the world. Between 2016 and 2020, £5.8 billion of this budget is set to be allocated to explicit UK International Climate Finance (ICF), providing financing to public and private sector projects to support ‘developing’ nations in responding to climate breakdown (IDC 2019). Moreover, the UK has committed to double its contribution to the Green Climate Fund, to £1.44 billion (GCF 2019). Furthermore, UK institutions provide expertise and assistance in understanding and responding to environmental breakdown, including public institutions and development and humanitarian agencies.

Yet, overall, the UK’s contribution to international efforts to responding to environmental breakdown is inadequate. Domestic contribution to action on climate breakdown is less impressive when considering ‘consumption-based’ emissions, those resulting from the production of goods and services imported from abroad (Defra 2019). Into the future, the UK’s official climate advisors have

warned that the government could miss its emissions reduction targets (CCC 2019). The UK is set to meet only five of the 19 targets for protecting nature set by the UN Convention on Biological Diversity (CBD) (UNHCR no date). Overall, the UK bears significant historical responsibility for environmental breakdown, contributing, for example, the fifth largest cumulative total of CO<sub>2</sub> emissions since 1750, as figure 1 shows. Today, the UK is still far exceeding its per capita share of global resources, as table 1 shows.<sup>2</sup>

**FIGURE 1: THE UK HAS MADE THE FIFTH LARGEST CONTRIBUTION TO CUMULATIVE CO<sub>2</sub> EMISSIONS**

**Cumulative CO<sub>2</sub> emissions (million tonnes), 1750–2018**



Source: Carbon Brief 2018

The UK government is also undertaking significant investments in unsustainable infrastructure abroad. For example, between 2013/14 and 2017/18, the UK government used UK Export Finance (UKEF) to invest £2.5 billion in fossil fuel energy, 96 per cent of its total investment in energy, with £2.4 billion of this invested in low- to middle-income countries (EAC 2019). In the main, the UK’s overseas development strategy is founded on a strong role for the private sector, including through outsourcing of development assistance to private companies and the use of public-private partnerships (PPPs), policies which have been criticised by development agencies, UN bodies, and civil society groups in nations receiving assistance as inefficient, environmentally damaging, and promoting the benefit of private interests over poverty alleviation and the promotion of human rights (EURODAD 2019, EURODAD 2018, UNGA 2018).

<sup>2</sup> The per capita boundaries assume a global population of 7 billion people and all seven indicators account for international trade. Straightforward per capita allocations omit considerations of justice. Other methods include differentiated environmental allocations, taking into account nations’ differing historical responsibility (contribution to the problem) and capacity (ability to pay) (Baer 2012), or allocations that promote active repairing of environmental damage (Raworth 2017).

**TABLE 1: THE UK IS EXCEEDING ITS PER CAPITA SHARE OF GLOBAL RESOURCES**

Biophysical indicator	Unit	UK	Per capita boundary	% use of allocation
CO <sub>2</sub> emissions	tonnes CO <sub>2</sub> per year	12.1	1.6	756%
Phosphorus	kilograms P per year mined and applied to erodible (agricultural) soils	5.2	0.9	578%
Nitrogen	kilograms N per year from industrial and intentional biological fixation	72.9	8.9	819%
Freshwater use	cubic metres H <sub>2</sub> O per year	240	574	42%
Embodied human appropriation of net primary production (eHANPP) <sup>3</sup>	tonnes C per year	2.4	2.6	92%
Ecological footprint <sup>4</sup>	global hectares (gha) per year	4.2	1.7	247%
Material footprint <sup>5</sup>	tonnes per year	24.3	7.2	338%

Source: O'Neill et al 2018

This approach is concomitant with the UK's support for global economic structures that promote environmentally unsustainable activity, negatively impact social and economic outcomes, and perpetuate power imbalances. These include legal structures, with upwards of 90 per cent of the publicly traded loans to governments in Africa made under English law; some of these loans may have pushed countries into debt crises (Christian Aid 2019). These have negatively affected countries like Mozambique, where, campaigners have pointed out, loans made by banks based in England are implicated in a debt crisis (JDC 2016), which occurred over the period when parts of the country were devastated by successive cyclones. Other structures include support for international treaties, such as the Energy Charter Treaty, that allow companies to sue countries in private courts over changes to energy policy (Eberhardt et al 2019). They also include global financial rules and markets associated with the City of London, which have allowed and contributed to the \$1.9 trillion of fossil fuel investments made since the Paris Agreement, including UK banks, such as Barclays, which has made investments in excess of \$85 billion (RAN et al 2019).

The UK's planned exit from the European Union has led the government to seek to develop a new international role for the UK (FAC 2018). These efforts are occurring within the context of the non-trivial impact Brexit is having and will have on the UK's international influence (Gifkins et al 2019) and the wider changes to the balance of global power (FAC 2018). However, as the House of Commons foreign affairs committee has concluded, while "government ministers have repeatedly used the phrase 'Global Britain' to indicate the UK's foreign policy ambitions" in this regard, the phrase "has not been precisely defined" nor have sufficient resources or direction been provided (ibid). In providing substance to its post-Brexit foreign policy, the government should seek a new international founded on a number of principles that explicitly seek to create a new model of international cooperation to promote a more sustainable, just and prepared world, including the following.

3 The land use intensity anywhere on earth resulting from a nation's domestic biomass consumption

4 How much biologically productive land and sea area a population requires to produce the biotic resources it consumes and absorb the CO<sub>2</sub> emissions it generates

5 Raw material consumption, regardless of where the material is extracted

- **Recognising historical responsibility.** The UK should seek to form a new approach to foreign policy which recognises its historic and current responsibility (and that of similar nations) with regard to the promotion of an unsustainable economic model around the world, and takes into account its cumulative contribution to the global climate and environmental crises.
- **Obeying the rules.** Ensuring adherence to international law and sustainability and human rights commitments, such as the Sustainable Development Goals, both domestically and across all international institutions to which the UK is a party, including through the activities of the IMF, World Bank and multilateral funds.
- **Building alliances for justice.** Repositioning UK alliances to support the voices of global trades unions, civil society organisations and those representing communities on the frontline of environmental breakdown, as a means to promote excluded voices and efforts to realise greater global environmental and social justice.
- **Acting as a supporting partner.** Maintaining an ongoing commitment to act as a ‘supporting partner’ in providing financial and technological assistance and expertise to those nations most affected by environmental breakdown, redistributing power and resources. This should be done through, for example, ending the preference for public-private partnerships in development spending, including those favouring large, Western companies, and instead working to build the capacity of local institutions. This support should extend to non-state and sub-state actors and include upholding the rights and amplifying the expertise of indigenous communities, whose territories hold 80 per cent of the planet’s biodiversity (Sobrevila 2008).
- **Greening globally.** Ensuring domestic sustainability action is compatible with the highest environmental and social justice abroad so sustainability in one nation does not come at the cost of other communities and countries (Auciello 2019).

Overall, UK foreign policy should embody active solidarity, and a commitment to justice more broadly, recognising that environmental justice intersects with all global justice issues. Policies that could comprise a commensurate contribution from the UK to a new model of international cooperation under conditions of environmental breakdown could include the following.

### A FAIR SHARE OF SUSTAINABILITY TARGETS

Under conditions of environmental breakdown, international cooperation should be founded on explicit recognition of cumulative responsibility for the problem and capability to act. The UK is the fifth-largest contributor to the stock of greenhouse gas emissions released since the onset of industrialisation and its status as the world’s fifth-wealthiest economy is a function of this contribution. Relative to most countries, the UK is still making a larger contribution to climate breakdown. A similar situation is apparent for other wealthy countries. As such, a range of NGOs and campaign groups have suggested that the ‘fair’ contribution to reducing global emissions, pursuant with the IPCC’s budget for limiting dangerous warming to 1.5°C, should be in excess of domestic commitments (CSERG 2018).

In recognition of its cumulative contribution, the UK should make a contribution to reducing the remaining global greenhouse gas emissions in excess of reducing its own emissions. This could be achieved by simultaneously reducing domestic emissions to net-zero or net-negative in advance of 2050, thus limiting the overall amount of emissions ultimately contributed by the UK, and explicitly committing to enabling the reduction of emissions in other nations by a quantified amount. Accordingly, we recommend that **the UK government commit to support less**

**industrialised nations to reduce their collective greenhouse gas emissions by 4.4 per cent below their 2010 levels by 2030.**<sup>6</sup> In addition to domestic reductions in line with the fifth carbon budget, this would constitute a contribution to global emissions reductions equivalent to around 200 per cent of UK emissions below 1990 levels. This would bring UK efforts to respond to climate breakdown closer in line with its ‘fair share’, based on its cumulative contribution and current capability. However, it should be noted that a truly ‘fair share’ would require the UK to also strengthen its domestic ambition, reducing emissions by greater than the 57 per cent reduction on 1990 levels currently committed under the fifth carbon budget. Without doing so, the UK would be failing to make a sufficient domestic contribution, unduly deferring domestic action abroad through resource transfer. To realise a truly ‘fair share’ the UK should commit to more ambitious domestic emissions reductions (the calculation of which be explored in future IPPR reports).

There are a range of means by which the UK could support emissions reductions abroad, including the policies discussed below. One is providing financial support, as the UK already does. But this support is currently not linked to an explicit non-domestic emissions reductions pledge. In order to do so, we recommend that the **UK government commit £20 billion to the Green Climate Fund up to 2030 as a means of both realising the non-domestic emissions reduction target and supporting less industrialised nations to adapt to the changing climate on their own terms.** Other institutional facilities could act as the beneficiaries of this commitment, including the UK’s ICF and UKEF, as well as those within beneficiary countries themselves. Furthermore, the UK government should seek to understand how it can extend a ‘fair share’ approach to reducing other environmental impacts across the world, including supporting other countries in preparing and to compensate for the loss and damage experienced as a result of the impacts of climate breakdown.

## REFORMING GLOBAL ECONOMIC STRUCTURES

A new model of international cooperation fit for the era of environmental breakdown should extend throughout multilateral institutions and structures. Notwithstanding the impact of Brexit, the UK maintains influence in shaping the decisions of these institutions and has the ability to support the reform or creation of institutions and structures that realise a more sustainable, just and prepared world. As such, a key element of the UK’s post-Brexit role should be to act as a champion of structural reform across global economic systems. Mechanisms for doing so should encompass the following.

- **Reform of multilateral institutions:** applying conditions to UK contributions to the World Bank, IMF and other multilateral development agencies and funds that require these institutions to rapidly increase support for the response to environmental breakdown and adopt policy approaches that promote human rights and local capabilities, including supporting a moratorium on public private partnerships (PPP) as the preferred mechanism for financing infrastructure projects (EURODAD 2018).
- **New international institutions:** supporting the creation of institutions and decision-making mechanisms that empower less industrialised nations, including those necessary to combat climate and environmental breakdown.

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<sup>6</sup> Calculations assume the UK maintains its current emissions target of a 57 per cent below 1990 levels by 2030, that countries bear responsibility for their historical emissions back to 1850, that the costs of emissions reductions are progressively distributed, and that the UK’s fair contribution is equally balanced between responsibility for emissions and current capability to respond. Total fair share calculated through the Climate Equity Reference Calculator, <https://calculator.climateequityreference.org> (see Holz et al 2019). Please contact the authors of this IPPR paper if you wish to discuss these calculations. The UK’s non-domestic contribution would be lower if it were to take more ambitious domestic action; for example, if it were to reduce emissions to net zero in advance of 2050.

- **International agreements:** supporting the adoption of international agreements that facilitate a more sustainable, just and prepared world at all levels of governance. These should include: a binding global migration compact that provides legal protections to people displaced by the impact of environmental breakdown; a binding UN treaty on transnational corporations and human rights; and adding ‘ecocide’ — the serious loss, damage or destruction of ecosystems — to the list of international crimes at the International Criminal Court (Ecocide Law no date, GJN 2019).
- **Trading arrangements:** ensuring the UK’s trading arrangements incorporate high standards across environmental and social factors.
- **Limiting corporate power:** seeking the reform of or leaving trade agreements that are antithetical to justice and solidarity and that limit the response of states to environmental breakdown, including by seeking a moratorium on investor-state dispute settlements for fossil fuel companies under any investment treaty anywhere in the world.

## CONCLUSION

In November 2020, the UK will host the UN Climate Conference. It should be doing so in the midst of a golden era of international cooperation. Instead, the multilateral order is destabilising and the persistent failure to slow environmental breakdown threatens international stability. The world is becoming a far more dangerous place and it is those who contributed least and who are most vulnerable who suffer the most. This injustice is facilitated by global economic structures and the very construction of the multilateral system. In response, it is imperative that the world’s communities and countries urgently realise a new, positive-sum model of international cooperation that enables all to accelerate progress toward a more sustainable, just and prepared world. The UK’s role in helping this come to pass is unique. It is where industrialisation began, and it still enjoys the privileges and advantages this brought. It is also, in many respects, a world leader in understanding and acting on environmental breakdown and, as a wealthy nation, has a particular responsibility to act in solidarity. Within this context, the 2020 UN Climate Conference provides the UK with an unprecedented opportunity to prosecute a genuinely new model of international cooperation fit for responding to the era of environmental breakdown, acting as a supporting partner. In doing so, it should commit to contributing an explicit ‘fair share’ of global emissions reductions in excess of its domestic contribution and provide the means by which less wealthy countries can best realise these reductions on their own terms. Responding to environmental breakdown means facing our responsibilities, both past and present.

## REFERENCES

- Akkerman M (2018) *Expanding the fortress: The policies, the profiteers and the people shaped by EU's border externalisation programme*, Transnational Institute. <https://www.tni.org/en/publication/expanding-the-fortress>
- Aon (2018) *Weather, climate & catastrophe insight*. <http://thoughtleadership.aonbenfield.com/Documents/20190122-ab-if-annual-weather-climate-report-2018.pdf>
- Arci (2019) *Security and migration: Economic interests and violations of basic rights. The cases of Libya, Niger and Egypt*. <https://www.arci.it/app/uploads/2019/05/report-2019-inglese-normal.pdf>
- Auciello BH (2019) *A just transition is a post-extractive transition*, War on Want and London Mining Network. <https://waronwant.org/media/war-want-and-london-mining-network-launch-joint-report-exposing-greenwashing-mining-industry>
- Baer P (2012) 'The greenhouse development rights framework for global burden sharing: reflection on principles and prospects', *WIREs Climate Change*. <https://doi.org/10.1002/wcc.201>
- Bank of England (no date) 'Climate change: what are the risks to financial stability?', webpage. <https://www.bankofengland.co.uk/knowledgebank/climate-change-what-are-the-risks-to-financial-stability>
- Brett M (2019) *Reforming the Bretton Woods institutions to support a global green new deal*, Common Wealth. <https://common-wealth.co.uk/reforming-the-bretton-woods-institutions.html>
- Civil Society Equity Review Group [CSERG] (2018) *After Paris: Inequality, fair shares, and the climate emergency*. [http://civilsocietyreview.org/files/COP24\\_CS0\\_Equity\\_Review\\_Report.pdf](http://civilsocietyreview.org/files/COP24_CS0_Equity_Review_Report.pdf)
- Carbon Brief (2018) 'Animation: The countries with the largest cumulative CO2 emissions since 1750' 23 April 2019, tweet. <https://twitter.com/carbonbrief/status/1120715988532629506?lang=en>
- Carney M (2015) 'Breaking the tragedy of the horizon – climate change and financial stability', 29 September 2015, speech. <https://www.bis.org/review/r151009a.pdf>
- Charbonneau L (2019) 'Multilateralism under threat'. <https://www.sustainablegoals.org.uk/multilateralism-under-threat/>
- Christian Aid (2019) *The new global debt crisis*. [https://www.christianaid.org.uk/sites/default/files/2019-05/The-new-global-debt-crisis-report-May2019\\_1.pdf](https://www.christianaid.org.uk/sites/default/files/2019-05/The-new-global-debt-crisis-report-May2019_1.pdf)
- Climate Action Tracker [CAT] (2019) 'Temperatures: addressing global warming'. <https://climateactiontracker.org/global/temperatures/>
- Climate Debt (no date) 'Climate debt', webpage. <http://climate-debt.org/climate-debt/>
- The Climate Equity Reference Project [CERP] (no date) 'Climate equity reference calculator'. <https://calculator.climateequityreference.org/>
- Committee on Climate Change [CCC] (2019) *Reducing UK emissions – 2019 Progress Report to Parliament*. <https://www.theccc.org.uk/publication/reducing-uk-emissions-2019-progress-report-to-parliament/>
- Convention on Biological Diversity [CBD] (no date) 'Preparations for the Post-2020 Biodiversity Framework'. <https://www.cbd.int/conferences/post2020>
- Davis L and Deole SS (2017) *Immigration and the rise of far-right parties in Europe*, ifo DICE Report. <https://www.ifo.de/DocDL/dice-report-2017-4-davis-deole-december.pdf>
- Department for Environment, Food & Rural Affairs [Defra] (2019) *UK's carbon footprint 1997–2016*. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/794557/Consumption\\_emissions\\_April19.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794557/Consumption_emissions_April19.pdf)

- Eberhardt P et al (2019) *One treaty to rule them all: The ever-expanding Energy Charter Treaty and the power it gives corporations to halt the energy transition*, Corporate Europe Observatory and the Transnational Institute. <https://corporateeurope.org/en/international-trade/2018/06/one-treaty-rule-them-all>
- Ecocide Law (no date) 'Ecocide law: why & how', webpage. <https://ecocidelaw.com/missing-law/>
- The Economist Intelligence Unit [EIU] (2018) *The Global Food Security Index 2018*. <https://foodsecurityindex.eiu.com>
- The Economist Intelligence Unit [EIU] (2019) 'Bolsonaro weakens environmental policies', 27 August 2019, *The Economist*. <http://country.eiu.com/article.aspx?articleid=308370414&country=Brazil&topic=Economy&subtopic=Current+policy>
- Environmental Audit Committee [EAC] (2019) *UK Export Finance: Nineteenth report of session 2017-19*, House of Commons. <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1804/1804.pdf>
- Estevens J (2018) 'Migration crisis in the EU: Developing a framework for analysis of national security and defence strategies', *Comparative Migration Studies*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6182341/>
- European Network on Debt and Development [EURODAD] (2018) 'Civil society organisations' open letter to World Bank executive directors on the Bank's approach to public-private partnerships (PPPs)'. <https://eurodad.org/ED-open-letter-PPPs>
- European Network on Debt and Development [EURODAD] (2019) *History repeated: How public private partnerships are failing*. <https://eurodad.org/history-repeated-press>
- Food and Agriculture Organization of the United Nations [FAO] (2018) 'Food security & nutrition around the world', webpage. <http://www.fao.org/state-of-food-security-nutrition/en/>
- Foreign Affairs Committee [FAC] (2018) *Global Britain*. <https://publications.parliament.uk/pa/cm201719/cmselect/cmfaaff/780/780.pdf>
- Foreign and Commonwealth Office [FCO] (2019) *#FCO2 – FCO sustainability: FCO sustainability report 2018/19*. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/820793/FCO\\_Sustainability\\_Report201819.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820793/FCO_Sustainability_Report201819.pdf)
- Gifkins J et al (2019) *Global Britain in the United Nations*, United Nations Association - UK. <https://www.una.org.uk/global-britain-united-nations>
- Global Commission on Adaptation [GCA] (2019) *Adapt now: A global call for leadership on climate resilience*. [https://cdn.gca.org/assets/2019-09/GlobalCommission\\_Report\\_FINAL.pdf](https://cdn.gca.org/assets/2019-09/GlobalCommission_Report_FINAL.pdf)
- Global Compact for Migration [GCM] (2018) *Global Compact For Safe, Orderly And Regular Migration*. [https://refugeesmigrants.un.org/sites/default/files/180713\\_agreed\\_outcome\\_global\\_compact\\_for\\_migration.pdf](https://refugeesmigrants.un.org/sites/default/files/180713_agreed_outcome_global_compact_for_migration.pdf)
- Global Food Security [GFS] (2015) *Extreme weather and resilience of the global food system: Final project report from the UK-US taskforce on extreme weather and global food system resilience*. [www.foodsecurity.ac.uk/assets/pdfs/extreme-weather-resilience-of-global-food-system.pdf](http://www.foodsecurity.ac.uk/assets/pdfs/extreme-weather-resilience-of-global-food-system.pdf)
- Global Justice Now [GJN] (2019) 'Ending corporate impunity: The struggle to bring about a binding UN treaty on transnational corporations and human rights', briefing paper. [https://www.globaljustice.org.uk/sites/default/files/files/resources/binding\\_treaty\\_briefing\\_july\\_2018\\_web.pdf](https://www.globaljustice.org.uk/sites/default/files/files/resources/binding_treaty_briefing_july_2018_web.pdf)
- Grayson D and Nelson J (2017) *Corporate responsibility coalitions: The past, present, and future of alliances for sustainable capitalism*, Routledge
- Green Climate Fund [GCF] (no date) 'About the fund'. <https://www.greenclimate.fund/who-we-are/about-the-fund>
- Green Climate Fund [GCF] (2019) 'United Kingdom pledges to double contribution to Green Climate Fund'. <https://www.greenclimate.fund/news/united-kingdom-pledges-to-double-contribution-to-green-climate-fund>
- Holz C, Kemp-Benedict E, Athanasiou T and Kartha S (2019) 'The Climate Equity Reference Calculator', *Journal of Open Source Software*, 4(35), 1273. doi: 10.21105/joss.01273

- Human Rights Council [HRC] (2019) Climate change and poverty: *Report of the Special Rapporteur on extreme poverty and human rights*. [https://www.ohchr.org/Documents/Issues/Poverty/A\\_HRC\\_41\\_39.pdf](https://www.ohchr.org/Documents/Issues/Poverty/A_HRC_41_39.pdf)
- International Development Committee [IDC] (2019) *UK aid for combating climate change*. <https://publications.parliament.uk/pa/cm201719/cmselect/cmintdev/1432/1432.pdf>
- IPPR Centre for Economic Justice [CEJ] (2019) *The UK in the global economy*, IPPR. <http://www.ippr.org/research/publications/uk-in-the-global-economy>
- Intergovernmental Panel on Climate Change [IPCC] (2018) 'Summary for Policymakers', In: *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, Masson-Delmotte V et al (eds). [https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15\\_SPM\\_High\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/SR15_SPM_High_Res.pdf)
- Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES] (2019) *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. [https://www.ipbes.net/sites/default/files/downloads/spm\\_unedited\\_advance\\_for\\_posting\\_htn.pdf](https://www.ipbes.net/sites/default/files/downloads/spm_unedited_advance_for_posting_htn.pdf)
- Internal Displacement Monitoring Centre [IDMC] (2019) *Global Report on Internal Displacement 2019*. <http://www.internal-displacement.org/global-report/grid2019/>
- Instituto per gli Studi di Politica Internazionale [ISPI] (2017) *Out of Africa: Why people migrate*. [https://www.ispionline.it/sites/default/files/pubblicazioni/out\\_of\\_africa\\_web.pdf](https://www.ispionline.it/sites/default/files/pubblicazioni/out_of_africa_web.pdf)
- Jubilee Debt Campaign [JDC] (2016) 'Campaigners in Mozambique call for non-payment of hidden debts', press release, 13 June 2016. <https://jubileedebt.org.uk/press-release/campaigners-in-mozambique-call-for-non-payment-of-hidden-debts>
- King M (2019) 'Per Jacobsson Lecture: The World Turned Upside Down: Economic Policy in Turbulent Times', speech. <https://meetings.imf.org/en/2019/Annual/Schedule/2019/10/19/imf-seminar-per-jacobsson>
- Laville S (2019) 'Governments and firms in 28 countries sued over climate crisis – report', 04 July 2019, *The Guardian*. <https://www.theguardian.com/environment/2019/jul/04/governments-and-firms-28-countries-sued-climate-crisis-report>
- Laybourn-Langton L and Hill T (2019) *Facing the crisis: Rethinking economics for the age of environmental breakdown*, IPPR. <http://www.ippr.org/research/publications/rethinking-economics-for-the-age-of-environmental-breakdown>
- Laybourn-Langton L, Rankin L and Baxter D (2019) *This is a crisis: Facing up to the age of environmental breakdown*, IPPR. <https://www.ippr.org/research/publications/age-of-environmental-breakdown>
- Lloyds (2014) *Catastrophe modelling & climate change*. <https://www.lloyds.com/news-and-risk-insight/news/emerging-risk/emerging-risk-2014/keying-climate-change-into-catastrophe-models>
- Ministry of Defence [MOD] (2018) *Global Strategic Trends: The future starts today*, Development, Concepts and Doctrine Centre, sixth edition. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/771309/Global\\_Strategic\\_Trends\\_-\\_The\\_Future\\_Starts\\_Today.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/771309/Global_Strategic_Trends_-_The_Future_Starts_Today.pdf)
- Neslen A (2019) 'Climate change could make insurance too expensive for most people – report', *The Guardian*. <https://www.theguardian.com/environment/2019/mar/21/climate-change-could-make-insurance-too-expensive-for-ordinary-people-report>
- New Economics Foundation [NEF] (2017) 'Central banks, climate change and the transition to a low carbon economy: A policy briefing'. [https://neweconomics.org/uploads/files/NEF\\_BRIEFING\\_CENTRAL-BANKS-CLIMATE\\_E.pdf](https://neweconomics.org/uploads/files/NEF_BRIEFING_CENTRAL-BANKS-CLIMATE_E.pdf)
- O'Neill D et al (2018) 'A good life for all within planetary boundaries', *Nature Sustainability*. <https://www.nature.com/articles/s41893-018-0021-4>
- Pickering J et al (2012) "'If equity's in, we're out": Scope for fairness in the next global climate agreement', *Ethics & International Affairs*. <https://www.cambridge.org/core/journals/ethics-and-international-affairs/article/if-equitys-in-were-out-scope-for-fairness-in-the-next-global-climate-agreement/B7A42B64196F30E6F8B7D6195F0E304B>

- Pidcock R and Yeo S (2017) 'Explainer: Dealing with the 'loss and damage' caused by climate change', 09 May 2017, *Carbon Brief*. <https://www.carbonbrief.org/explainer-dealing-with-the-loss-and-damage-caused-by-climate-change>
- Rainforest Action Network [RAN] et al (2019) *Banking on climate change: Fossil fuel finance report card 2019*. [https://www.ran.org/wp-content/uploads/2019/03/Banking\\_on\\_Climate\\_Change\\_2019\\_vFINAL1.pdf](https://www.ran.org/wp-content/uploads/2019/03/Banking_on_Climate_Change_2019_vFINAL1.pdf)
- Ratkovic M (2017) *Migrant crisis and strengthening of the right wing in the European Union*, Megatrend Review. [https://www.researchgate.net/publication/322312085\\_Migrant\\_crisis\\_and\\_strengthening\\_of\\_the\\_right\\_wing\\_in\\_the\\_European\\_Union](https://www.researchgate.net/publication/322312085_Migrant_crisis_and_strengthening_of_the_right_wing_in_the_European_Union)
- Raworth K (2012) 'A safe and just space for humanity: Can we live within the doughnut?', Oxfam. [https://d1tn3vj7xz9fdh.cloudfront.net/s3fs-public/file\\_attachments/dp-a-safe-and-just-space-for-humanity-130212-en\\_5.pdf](https://d1tn3vj7xz9fdh.cloudfront.net/s3fs-public/file_attachments/dp-a-safe-and-just-space-for-humanity-130212-en_5.pdf)
- Raworth K (2017) *Doughnut economics: Seven ways to think like a 21st-century economist*, Random House
- Reed J and Lee J (2019) 'UK fast food 'linked to Brazilian forest fires'', 09 October 2019, *BBC News*. <https://www.bbc.co.uk/news/uk-49973997>
- Rigaud KK et al (2018) *Groundswell : Preparing for internal climate migration*, World Bank. <https://openknowledge.worldbank.org/handle/10986/29461>
- Rudebusch GD (2019) 'Climate change and the Federal Reserve', Federal Reserve Bank of San Francisco. <https://www.frbsf.org/economic-research/publications/economic-letter/2019/march/climate-change-and-federal-reserve/>
- Schaller S and Carius A (2019) *Convenient Truths: Mapping climate agendas of right-wing populist parties in Europe*, Adelphi. <https://www.adelphi.de/de/system/files/mediathek/bilder/Convenient%20Truths%20-%20Mapping%20climate%20agendas%20of%20right-wing%20populist%20parties%20in%20Europe%20-%20adelphi.pdf>
- Sobrevila C (2008) *The role of indigenous peoples in biodiversity conservation: The natural but often forgotten partners*, World Bank. <https://siteresources.worldbank.org/INTBIODIVERSITY/Resources/RoleofIndigenousPeoplesinBiodiversityConservation.pdf>
- Steffen W et al (2018) 'Trajectories of the Earth System in the Anthropocene', *Proceedings of the National Academy of Sciences*, 115(33), 8252-8259. <https://www.pnas.org/content/115/33/8252.short>
- Stockholm Resilience Centre [SRC] (2018) 'Time for a 'Paris Agreement for nature''. <https://www.stockholmresilience.org/research/research-news/2018-09-14-time-for-a-paris-agreement-for-nature.html>
- Strahan SE and Douglass AR (2018) *Decline in Antarctic ozone depletion and lower stratospheric chlorine determined from Aura microwave limb sounder observations*, research letter, *Geophysical Research Letters*. <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1002/2017GL074830>
- Suffee Z (2019) 'IMF loan to Mozambique following Cyclone Idai "shocking indictment" of international community', press release, 23 April 2019, *Jubilee Debt Campaign*. <https://jubileedebt.org.uk/press-release/imf-loan-to-mozambique-following-cyclone-idai-shocking-indictment-of-international-community>
- Sullivan K (2019) 'In Italy, activists rally support for upcoming climate lawsuit', 06 June 2019, *Climate Liability News*. <https://www.climateliabilitynews.org/2019/06/06/italy-climate-change-lawsuit/>
- Tharoor I (2019) 'Bolsonaro, Trump and the nationalists ignoring climate disaster', 23 August 2019, *The Washington Post*. <https://www.washingtonpost.com/world/2019/08/23/bolsonaro-trump-nationalists-ignoring-climate-disaster/>
- Tollefson J (2019) 'Canadian kids sue government over climate change', *Nature*. <https://www.nature.com/articles/d41586-019-03253-5>
- Tsioumani E (2019) 'On the road to the 2020 UN biodiversity conference: Imagining the post-2020 global biodiversity framework'. <http://sdg.iisd.org/commentary/policy-briefs/on-the-road-to-the-2020-un-biodiversity-conference-imagining-the-post-2020-global-biodiversity-framework/>
- UN News (2019) '24 billion tons of fertile land lost every year, warns UN chief on World Day to Combat Desertification'. <https://news.un.org/en/story/2019/06/1040561>

- United Nations [UN] (2018) 'Secretary-General calls for renewed commitment to rules-based order, reformed, reinvigorated, strengthened multilateral system, as general debate opens', meeting coverage. <https://www.un.org/press/en/2018/ga12062.doc.htm>
- United Nations Educational, Scientific and Cultural Organization [UNESCO] (no date) 'Indigenous knowledge and climate change', webpage. <https://en.unesco.org/links/climatechange>
- United Nations Framework Convention on Climate Change [UNFCCC] (no date) 'Approaches to address loss and damage associated with climate change impacts in developing countries', webpage. <https://unfccc.int/topics/adaptation-and-resilience/workstreams/approaches-to-address-loss-and-damage-associated-with-climate-change-impacts-in-developing-countries>
- United Nations Framework Convention on Climate Change [UNFCCC] (1992) *United nations framework convention on climate change*. [https://unfccc.int/files/essential\\_background/background\\_publications\\_htmlpdf/application/pdf/conveng.pdf](https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf)
- United Nations Framework Convention on Climate Change [UNFCCC] (2015) *The Paris outcome on loss and damage*. [https://unfccc.int/files/adaptation/groups\\_committees/loss\\_and\\_damage\\_executive\\_committee/application/pdf/ref\\_8\\_decision\\_xcp.21.pdf](https://unfccc.int/files/adaptation/groups_committees/loss_and_damage_executive_committee/application/pdf/ref_8_decision_xcp.21.pdf)
- United Nations Framework Convention on Climate Change [UNFCCC] (2018) 'Migration and climate change need to be tackled together'. <https://unfccc.int/news/migration-and-climate-change-need-to-be-tackled-together>
- United Nations General Assembly [UNGA] (2018) *Report of the Special Rapporteur on extreme poverty and human rights*. <https://undocs.org/A/73/396>
- United Nations High Commissioner for Refugees [UNHCR] (no date) 'Figures at a glance', webpage. <https://www.unhcr.org/uk/figures-at-a-glance.html>
- United Nations High Commissioner for Refugees [UNHCR] (2016) *Global trends: Forced displacement in 2015*. <https://www.unhcr.org/uk/news/latest/2016/6/5763b65a4/global-forced-displacement-hits-record-high.html>
- United States Army War College [USAWC] (2019) *Implications of climate change for the U.S. army*. [https://climateandsecurity.files.wordpress.com/2019/07/implications-of-climate-change-for-us-army\\_army-war-college\\_2019.pdf](https://climateandsecurity.files.wordpress.com/2019/07/implications-of-climate-change-for-us-army_army-war-college_2019.pdf)
- Vargas-Silva C and Sumption M (2019) 'The fiscal impact of immigration in the UK', *The Migration Observatory*. <https://migrationobservatory.ox.ac.uk/resources/briefings/the-fiscal-impact-of-immigration-in-the-uk/>
- Watts N et al (2018) 'The Lancet Countdown on health and climate change: from 25 years of inaction to a global transformation for public health', *The Lancet*. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32464-9/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32464-9/fulltext)
- Wearing D (2019) 'Beyond the petrodollar', *Common Wealth*. <https://common-wealth.co.uk/beyond-the-petrodollar.html>
- World Economic Forum [WEF] (2018) *The Global Risks Report 2018 - 13th Edition*. [http://www3.weforum.org/docs/WEF\\_GRR18\\_Report.pdf](http://www3.weforum.org/docs/WEF_GRR18_Report.pdf)



