

FACING THE CRISIS

RETHINKING ECONOMICS FOR THE AGE OF ENVIRONMENTAL BREAKDOWN

DISCUSSION PAPER 1

**Laurie Laybourn-Langton
and Tom Hill**

July 2019

ABOUT IPPR

IPPR, the Institute for Public Policy Research, is the UK's leading progressive think tank. We are an independent charitable organisation with our main office in London. IPPR North, IPPR's dedicated think tank for the north of England, operates out of offices in Manchester and Newcastle, and IPPR Scotland, our dedicated think tank for Scotland, is based in Edinburgh.

Our primary purpose is to conduct and promote research into, and the education of the public in, the economic, social and political sciences, science and technology, the voluntary sector and social enterprise, public services, and industry and commerce. Other purposes include to advance physical and mental health, the efficiency of public services and environmental protection or improvement; and to relieve poverty, unemployment, or those in need by reason of youth, age, ill-health, disability, financial hardship, or other disadvantage.

IPPR
14 Buckingham Street
London
WC2N 6DF
T: +44 (0)20 7470 6100
E: info@ippr.org
www.ippr.org
Registered charity no: 800065 (England and Wales),
SC046557 (Scotland)

This paper was first published in July 2019. © IPPR 2019

The contents and opinions expressed in this paper are those of the authors only.

The progressive policy think tank

CONTENTS

Summary	3
About this paper	3
Introduction	4
The prevailing political-economic paradigm is driving environmental breakdown	6
2. The response to environmental breakdown is dangerously inadequate ..	8
3. Towards a sustainable, just and prepared paradigm	9
a. Understanding of the historical context.....	9
b. Recognition of key power structures.....	10
c. Underpinning analytical framework	11
d. Goals	11
e. Policy programme.....	11
f. Narratives	14
Conclusion	15
References	15

ABOUT THE AUTHORS

Laurie Laybourn-Langton is an associate fellow at IPPR.

Tom Hill is a senior research fellow at IPPR.

ACKNOWLEDGEMENTS

The authors would like to thank Luke Murphy, Tom Kibasi, Lesley Rankin and those who attended the research roundtables for this report, as well as all those campaigning to slow environmental breakdown and combat injustice, both past and present, at home and abroad.

Download

This document is available to download as a free PDF and in other formats at:

<http://www.ippr.org/research/publications/rethinking-economics-for-the-age-of-environmental-breakdown>

Citation

If you are using this document in your own writing, our preferred citation is:

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>

Permission to share

This document is published under a creative commons licence:

Attribution-NonCommercial-NoDerivs 2.0 UK

<http://creativecommons.org/licenses/by-nc-nd/2.0/uk/>

For commercial use, please contact info@ippr.org



SUMMARY

Damaging human impacts on the environment go beyond climate breakdown to encompass most other natural systems, from soil to biodiversity. This drives a complex process of overall environmental breakdown that has reached critical levels, threatening social and economic stability. The current economic model in countries around the world drives this breakdown, and many of its underpinning assumptions, policies and narratives act as barriers to change, from a focus on narrow measures of progress to continued investment in environmentally damaging activity. A new model is needed to rapidly create societies that are more sustainable, just and prepared: bringing human activity to within environmentally sustainable limits while narrowing inequality, improving quality of life, and becoming better prepared for the accelerating consequences of environmental breakdown.

We argue that a necessary precondition for this is to place a full sustainability constraint on economies in order to rapidly reduce damaging environmental activity. Using the UK as a case study, we recommend that the government does this by adopting a Sustainable Economy Act that mandates statutory targets for the rapid reduction of a full range of environmental impacts, including across biodiversity, soil fertility and air quality. Living within environmental means would necessarily require deeper changes to prevailing economic models, including a new conception of abundance and living standards, rapid increases in green investment, and a leading role for the state and local communities.

ABOUT THIS PAPER

This is the first in a series of six short discussion papers that seeks to inform debate about the relationship between policy, politics and environmental breakdown, supporting education in economic, social and political sciences. This paper explores the role of social and economic systems – and the ideas, policies and narratives that underpin them – in driving dangerous environmental change. It discusses how these systems should change in order to improve the response to environmental breakdown. In doing so, it seeks to help advance environmental protection and improvement, sustainable development, relieving poverty and other 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.

To learn more, visit www.ippr.org/research/topics/environment

INTRODUCTION

Mainstream political and policy debates have failed to recognise that human impacts on the environment have reached a critical stage, potentially 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. Overall, environmental breakdown is creating a new, highly complex and destabilised domain of risk, which increases the chance of the collapse of social and economic systems, at local, national and potentially even global levels. The historical disregard of environmental considerations in most areas of policy has been a catastrophic mistake.

In response, societies must rapidly bring human impacts on the environment to within sustainable limits while maintaining resilience against shocks resulting from past and future environmental degradation. This discussion paper explores how the current political-economic paradigm – the narratives, assumptions, policies and power structures that dominate contemporary political and economic thinking – drives environmental breakdown and acts as a barrier change. In response, it maps the contours of a paradigm capable of responding to environmental breakdown.

1. ENVIRONMENTAL BREAKDOWN NECESSITATES RAPID TRANSFORMATION OF ECONOMIC SYSTEMS

Environmental breakdown is driven by the structures and dynamics of socioeconomic systems. Prevailing models of economic development around the world are founded on unsustainable resource use, including the combustion of fossil fuels and overexploitation of soils. These dynamics are partly driven by investment processes that exclude environmental considerations and business strategies that promote the acquisition and consumption of goods and services in ever greater quantities (Hickel and Kallis 2019). These processes are both the cause and effect of a policy focus on narrow measures of socioeconomic progress. These measures have been dominated by a simple measure of national income – gross domestic product (GDP) – that fails to take into account either environmental degradation or human wellbeing. In turn, GDP growth is foundational to processes of investment and profit-making in economies and to the tax and spending policies of governments.

The window of opportunity to limit increasingly catastrophic impacts resulting from environmental breakdown is rapidly closing. In the case of climate breakdown alone, greenhouse gas (GHG) emissions must be roughly halved by 2030 in order to limit temperature rises to 1.5C, above which damaging impacts will become increasingly dangerous and unmanageable (IPCC 2018). Yet global emissions continue to rise (CAT 2018). As such, environmental breakdown – and its destabilising impacts – are set to accelerate into the future, increasing the chance that natural systems will undergo abrupt, rapid and catastrophic change, such as sea level rise resulting from the melting of ice sheets or the loss of pollinating insects impairing food production (Steffen et al 2018).

Within this context, environmental breakdown presents socioeconomic systems around the world – from food production, through financial markets, to political systems – with a range of major, interrelated challenges. These include the following.

- **Social progress has been achieved at the expense of the environment.** In the UK and countries around the world, there is a positive correlation between progress toward social goals and environmental breakdown, as figure 1 shows (O'Neill et al 2018). No country has demonstrated a capacity to realise high social outcomes without causing unsustainable environmental destruction. While some countries, including the UK, have measured progress in 'decoupling' domestic economic activity from greenhouse gas emissions, this trend is less pronounced when considering 'consumption-based' emissions – those resulting from the production of goods and services imported from abroad (Defra 2019). Moreover, policy debates often disregard other natural systems experiencing acute stress and some evidence suggests that it may not be possible to decouple economic growth, as currently measured, from environmental degradation in the time remaining or even at all (Hickel and Kallis 2019).
- **Headline measures of economic progress exclude environmental degradation.** Despite its use as a headline metric of economic progress around the world, there is widespread appreciation that GDP is an inadequate measure for considering socioeconomic progress and its interrelation with nature (Colebrook 2018). Furthermore, GDP ignores distributional concerns and is only weakly correlated with wellbeing, and so its continued use perpetuates the myth that economic growth necessarily means societal welfare.
- **Socioeconomic systems are already destabilised.** Destabilisation resulting from environmental breakdown is increasing at a time when economic systems are already experiencing high levels of stress. Inequality and wage stagnation have opened up large power imbalances and driven political and economic instability (Piketty 2018). In the UK, over 14 million people live in poverty, of which more than 4 million are children (JRF 2018), while hundreds of millions continue to live in extreme poverty and deprivation around the world (Roser and Ortiz-Ospina 2017). Environmental breakdown exacerbates these problems.
- **The impacts of environmental breakdown are unjust.** The consequences of environmental breakdown fall hardest on the poorest (Oxfam 2015), who are most vulnerable to its effects and least responsible for the problem, both within and across countries. In the case of climate breakdown, wealthy nations have made the greatest contribution to GHG emissions and are set to use a large proportion of the emissions that can now be released, raising significant problems for global equity (Alcaraz et al 2018). Environmental breakdown interacts with other inequalities, such as ethnicity and gender (IPPR CEJ 2019).
- **Mitigation measures can be self-defeating.** Efficiency improvements at the micro level are regularly cancelled out by increased production and consumption at the macro level – the 'rebound effect' (Berners-Lee and Clark 2013). For example, vehicle fuel efficiency gains can be offset by increases in production and distance travelled by users (Moshiri and Aliyev 2017).
- **Current patterns of economic activity are strongly path dependent.** Inertias inherent in systems with high environmental impact limit the capacity to make these systems sustainable. For example, it is estimated that the complete electrification of vehicles in the UK alone would require

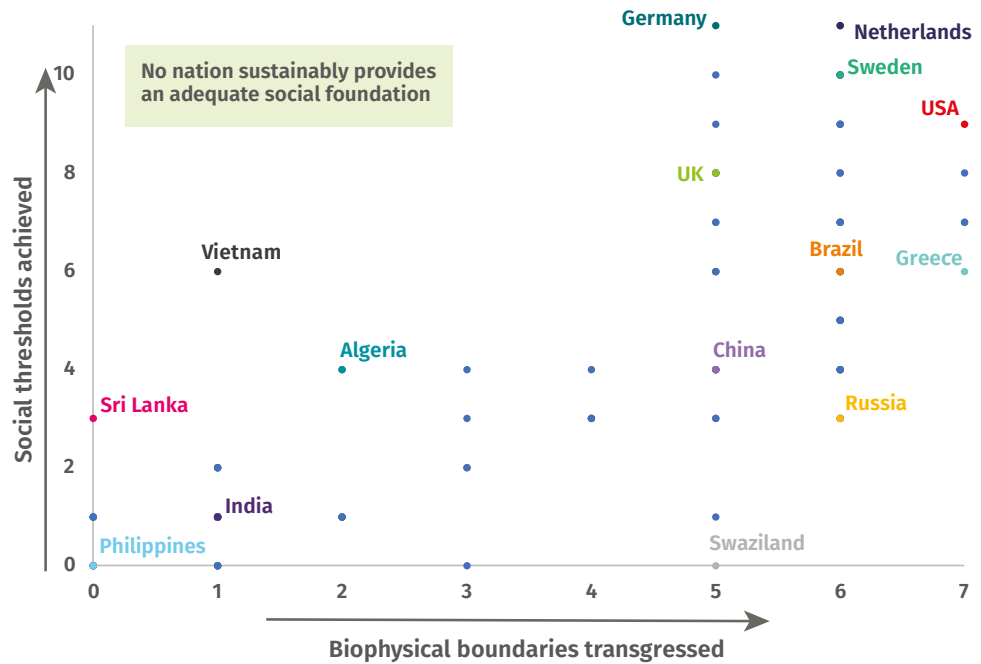
most of the current global production of precious metals, rely on large increases in energy use, and lead to negative consequences for other natural systems and societies in the Global South (Herrington et al 2019, Dominish et al 2019). Similarly, unsustainable infrastructure, such as fossil fuel plants with decades-long lifespans, 'lock in' the use of carbon thereby inhibiting future decarbonisation (Erikson et al 2015).

- **Societies are not prepared.** Environmental breakdown, and its negative consequences, will grow as a result of past and future degradation (University of Exeter 2017). In the UK, socioeconomic systems are inadequately prepared for these impacts (CCC 2019a), which include the growing risk of financial shocks resulting from damage caused by extreme weather (Rudebusch 2019).

Overall, prevailing socioeconomic systems are divisive and degenerative (Raworth 2017). They continue to drive critical levels of environmental breakdown without meeting human needs, have little recourse to the resultant injustices and are failing to adequately prepare for a destabilised future.

FIGURE 1: NO NATION IS SUSTAINABLY PROVIDING AN ADEQUATE SOCIAL AND ECONOMIC FOUNDATION

Social thresholds achieved versus biophysical boundaries transgressed



Source: A good life for all within planetary boundaries 2019¹

THE PREVAILING POLITICAL-ECONOMIC PARADIGM IS DRIVING ENVIRONMENTAL BREAKDOWN

Environmental breakdown is partly the result of the prevailing political-economic paradigm and the ideas and policies it perpetuates. We define a political-economic paradigm as the system of thought and practice that drives the behaviours of decision-makers and institutions, helping determine the structures and dynamics of the overall socioeconomic system (Laybourn-

1 For data see: <https://goodlife.leeds.ac.uk/countries/>

Langton and Jacobs 2018). Paradigms encompass various elements, including the interpretation of the historical context; the power structures and dynamics that bring it to prominence and sustain its dominance; a general analytical framework and set of assumptions for understanding how economies and societies operate; a set of goals and a range of principal socioeconomic policies that seek to realise these goals; and narratives and language that describe and justify the other elements of the paradigm.

Key elements of the current political-economic paradigm in nations around the world, particularly in the UK and other Western countries, are drivers of and/or barriers to acting on environmental breakdown. These elements include the following.

- **Historical narrative.** Conceptions of the historical origins of contemporary economic systems often disregard how the structures and dynamics of these systems have driven unsustainable environmental impacts for hundreds of years. They disregard that these impacts have occasionally led to the severe disruption or even collapse of societies, such as during the period of global cooling in the 1600s (Bonneuil and Fressoz 2016, Diamond 2005).
- **Power structures.** Elite interests in countries across the world – including industries whose business model depends on continued environmental degradation – use their power and wealth to influence political debates and policy decisions on environmental breakdown. There are many instances of such groups blocking or reversing progress, such as the large lobbying presence of fossil fuel interests in US politics (Brulle 2018, UCS 2012).
- **Analytical framework.** The prevailing analytical framework driving policy-making prioritises maximisation of flows of income over stocks of economic, social and environmental assets, arguably driving short-termist policy decisions (Pushpam 2016). For example, destruction of forests for timber produces a lucrative flow of revenue and profit but destroys a crucial natural stock on which a range of species depend to survive. The aggregate destruction of these stocks is precipitating the breakdown of global natural systems.
- **Economic goals.** The failures of the current analytical framework manifest acutely in the economic goals used by policy-makers. Overall economic progress is almost exclusively measured in terms of GDP, which does not incorporate measures of environmental degradation or a wider understanding of the factors that drive human progress.
- **Government policies.** Legal systems and regulatory policies in countries around the world have largely failed to internalise the costs of environmental breakdown into the decision-making processes of firms and governments. It is estimated that many leading industries would be unprofitable if environmental costs were fully integrated (Trucost 2013). This includes coal power generation and farming across large parts of the world, where the economic cost of environmental degradation driven by their operations exceeds the resultant revenue (ibid).
- **Overall narratives.** The current political-economic paradigm favours narratives of individual responsibility and consumer action to limit environmental breakdown, which may obscure the imperative for systemic change (Byskov 2019).

2. THE RESPONSE TO ENVIRONMENTAL BREAKDOWN IS DANGEROUSLY INADEQUATE

Two overall transformations to the structure of socioeconomic systems are needed in response to environmental breakdown (Laybourn-Langton et al 2019, Raworth 2012), to make societies:

- **sustainable and just:** A socioeconomic transformation to achieve a ‘safe and just space’ for human activity, bringing it to within environmentally sustainable limits while tackling inequalities and injustice and providing a high quality of life to all. Achieving environmental sustainability also requires restoration of natural systems
- **prepared:** Increased levels of societal resilience to the impacts of environmental breakdown, covering all areas of society, including infrastructure, markets, political processes, social cohesion and global cooperation.

These two transformations – to prevent and mitigate environmental breakdown while increasingly preparing for its impacts – are interrelated processes. For example, lower emissions from increased deployment of domestic renewable energy could improve energy system resilience by reducing foreign import and limiting exposure to fluctuations in fossil fuel markets (World Bank 2018).

Some progress toward both transformations is being made in many countries. In the UK, legislation has been passed that aims to limit some elements of environmental breakdown. Foremost is the Climate Change Act 2008, which placed a boundary constraint on the contribution of UK economic activity to climate breakdown (CCC 2019b). A large reduction in the GHG intensity of energy has been driven by improvements to energy efficiency and reductions in the use of coal (Le Quéré et al 2019). The UK government is ostensibly planning to undertake more explicit intervention in the economy as a means to tackle environmental challenges, through its Industrial and Clean Growth Strategies (BEIS 2017). Political rhetoric linking justice to the need for structural economic change is increasing in prevalence, particularly in the case of the concept of a ‘Green New Deal’ (Lawrence 2019). Notable examples of increased awareness and action on preparation include responses to financial system risks from central banks and through climate-related financial disclosures (BoE 2019a), and the continual adaptation processes mandated by the Climate Change Act (Fankhauser et al 2018).

Yet overall progress has been inadequate. The UK is set to miss its legally-binding GHG emission reduction targets due to insufficient progress across sectors (Evans 2019), while policy does not adequately focus on a full range of natural systems, with evidence showing accelerated breakdown in domestic natural systems (RSPB 2016). Policy programmes often fail to drive structural change. For example, the phase-out of leaded vehicle fuels did not occur alongside efforts to reduce vehicle use and realise the potential co-benefits of increases in public and other shared transport, such as improved health and greater socioeconomic opportunities (ITF 2016). Narrow measures of progress, such as GDP growth, are still dominant even while other nations adopt more varied indicators. There is little to no focus on issues of justice, such as the relationship between the UK’s large historical and contemporary contribution to environmental degradation, its role as a colonial power, and the disproportionate impact of environmental breakdown on countries in the Global South (Mahony and Endfield 2018, Bathiany et al 2018). Furthermore, it is inadequately prepared for a range of potential shocks and crises (IPPR CEJ 2019).

Overall, the UK has failed to undertake the scale of transformation required to respond to environmental breakdown. The barriers to delivering this transformation are familiar: vested interests and power structures; entrenchment of existing paradigmatic thinking; the inherent complexities associated with delivering structural change and creating political movements; inertias in decision-making; and the marginalisation and exclusion of significant parts of society whose support is required to deliver change (Laybourn-Langton et al 2019). A similar state of affairs is apparent in most countries.

3. TOWARDS A SUSTAINABLE, JUST AND PREPARED PARADIGM

Dominant political-economic paradigms can lose legitimacy, often as a result of the perceived failure of prevailing ideas and practices to adequately conceive of and respond to crises (Stirling and Laybourn-Langton 2017). Under these circumstances, a new paradigm, seemingly offering stronger analysis and policies, gains the support of a critical mass of society and supplants the old paradigm. Using the UK as an example, we can identify two significant periods of breakdown and transition from one paradigm to another over the last 100 years, from economic liberalism to the post-second world war consensus and then to the ‘free market’ or ‘neoliberal’ paradigm, the central tenets of which remain dominant to the current day (ibid).

In each case, rapid transformation of economic structures displaced the old paradigm and entrenched the new: wartime government economic intervention paved the way for the socialisation of healthcare in the wake of WWII; deregulation of financial markets and the unprecedented sale of state assets created the conditions for enduring financialisation since the 1980s. Similarly, structural changes are needed to realise more sustainable, just and prepared societies (IPBES 2019). These must go beyond the focus on tax, regulation and subsidisation policies favoured in efforts to limit environmental degradation under the current paradigm in the UK and around the world.

Realising these transformations will require faster and more fundamental changes to economic structures than characterised previous shifts. The accelerating pace of environmental breakdown requires these changes to occur globally in a matter of years, over a period in which destabilising impacts will grow. The current and previous paradigms have shared a number of foundational elements, including the use of environmentally unsustainable technologies and the promotion and promise of high material consumption, and so a fundamental break from previous paradigms is required. We explore the main elements of a paradigm capable of responding to environmental breakdown below, drawing on elements that are relevant to the global context and countries around the world, and using the UK as a case study for domestic policy and other nation-specific elements.

A. UNDERSTANDING OF THE HISTORICAL CONTEXT

Successive waves of human development have driven environmental breakdown to the global scale over hundreds of years (Lewis and Maslin 2018). Three major elements of this history are of foundational importance for a paradigm capable of responding to environmental breakdown.

1. **Cumulative impact.** Differing paths of economic development have led some nations, predominantly those in Europe and North America, to inflict greater cumulative global environmental damage. For example, the UK has the fifth largest cumulative contribution to climate breakdown, resulting from early and sustained industrialisation (Carbon Brief 2019).
2. **Responsibility for injustice.** The past actions of Western nations have partly determined the unequal impacts of environmental breakdown. For example, the legacy of extractive imperialism has inhibited the development of former colonies which, in turn, heightens their vulnerability to environmental breakdown (Sealey-Huggins 2012).
3. **Economic dynamics have driven environmental breakdown for centuries.** Economic structures and dynamics are fundamental drivers of unsustainable human activity, including profit-making through investment that does not account for environmental impacts and compounding material growth. Therefore, global environmental breakdown can be traced back centuries, to the emergence of these structures and dynamics in the early modern period in Europe and their forced adoption across the world through colonial empires (Moore 2017).

It is precisely because environmental breakdown is an inter- and intra-generational problem that the contemporary efforts of nations must take responsibility for their historical actions, particularly those that have disproportionately contributed to both cumulative degradation and the creation of structures of inequality that determine its unjust impacts. In turn, this demands a response that fundamentally alters the underlying economic structures and dynamics that drive degradation and seeks to recognise and repair injustice.

B. RECOGNITION OF KEY POWER STRUCTURES

The recognition of and action on a number of dimensions of power should sit at the heart of a political-economic paradigm capable of responding to environmental breakdown, including the following.

1. **Market institutions.** Institutional arrangements underpinning market dynamics are some of the most powerful forces driving environmental breakdown. For example, around US\$1 trillion was invested in fossil fuels in 2017 (IEA 2018). This partly resulted from short-termist decision-making encouraged by company law and valuation methods that neglect the environmental impact of investments. These arrangements are determined by the actions of policymakers in government, central banks and across the legal system.
2. **Power of vested interests.** The ability of fossil fuel and other vested interests to influence political and policy debates are enabled by tenets of the current paradigm, including private funding of political campaigns, lobbying, and a 'revolving door' between government and industry (Cave and Rowell 2014, Brulle 2018).
3. **Political dynamics.** Accelerating socioeconomic destabilisation resulting from environmental breakdown could embolden regressive movements, with instances of mainstream political parties already espousing responses to environmental breakdown rooted in nationalist and anti-immigrant arguments (Mazoue 2019). Meanwhile, policies to slow breakdown have distributional impacts and can drive a political backlash if introduced without recourse to issues of fairness (Strauss 2018). Environmental breakdown is increasing at a time when trust in institutions remains highly polarised across the world. (Edelman 2019).
4. **Global power balances.** Those countries and communities most vulnerable to the impacts of environmental breakdown and least responsible for the

problem have less power and influence compared to those who are most responsible and capable of responding.

Therefore, a new paradigm should seek to share power and increase inclusivity, growing collective participation in efforts to reduce breakdown, counteract the influence of vested interests, and improve social cohesion in the face of environmental shocks. Methods to achieve this include democratic reform, economic democracy from shared ownership and strengthening worker rights.

C. UNDERPINNING ANALYTICAL FRAMEWORK

The current political-economic paradigm in many countries is founded on inadequate analyses that, among other areas, disregard the relationship between human and natural systems (Raworth 2017). A new paradigm should be underpinned by an understanding of the dynamic complexity of human and natural systems and their interrelation (Arthur 2013), recognising environmental breakdown as a complex and uncertain systemic problem. The maintenance of stocks, particularly essential ecosystems and biodiversity should be prioritised, alongside theories of public value that recognise the crucial role of the state and other elements of public sphere (Mazzucato 2018). This analytical framework should be interdisciplinary and include analyses often disregarded by the current paradigm, including power and oppression with respect to environmental breakdown and colonial history. It will necessarily draw on findings that run contrary to the current paradigm, including that human behaviour is social, cooperative, adaptable and often prioritises intrinsic over extrinsic values. This is evidenced by significant bodies of literature in and across disciplines such as neuroscience and anthropology, contradicting the prevailing model of human behaviour as selfish and rational (Raworth 2017). The widespread adoption of such a framework will require changes to how economics is taught.

D. GOALS

A new political-economic paradigm should recognise that responding to environmental breakdown is an unprecedented challenge that is strongly related to a wide variety of socioeconomic challenges, including poverty and inequality (Islam and Winkel 2017). Moreover, environmental breakdown cannot be 'solved' but must be more effectively managed; past and any future environmental degradation will continue to destabilise natural systems long into the future. So, stronger responses to environmental breakdown should become one of the central goals of a new paradigm, underpinning a range of subsidiary goals that drive rapid and transformative action to ensure societies become more sustainable, just and prepared by design. Governments should measure progress through a broader range of indicators including wellbeing and sustainability, with budgetary decision making determined in reference to improvements in these areas, as is increasingly the case in some countries, such as New Zealand (APPGWE 2019, New Zealand Treasury 2019).

E. POLICY PROGRAMME

The policy response to environmental breakdown should aim to bring environmentally damaging activity to within sustainable limits while driving the restoration of damaged ecosystems, improving socioeconomic outcomes and increasing levels of preparedness for shocks. Here, we use the UK as a case study to explore the main elements of a domestic policy response to environmental breakdown.

One of the foremost tasks of policy under conditions of environmental breakdown is to rapidly reduce damaging environmental impacts. The IPPR

Commission on Economic Justice's proposal to bring the entire UK economy to within sustainable limits through a **Sustainable Economy Act** is now urgent. This would mandate statutory targets for the rapid reduction of a full range of environmental impacts, including across biodiversity, soil fertility and air quality, effectively placing a full sustainability constraint on all UK economic activity (IPPR CEJ 2018). In this way, the Sustainable Economy Act (SEA) should be modelled on the Climate Change Act (CCA) and the UK target of net-zero decarbonisation by 2050, which effectively places a greenhouse gas constraint on the economy; it is vital that this constraint is extended to cover all elements of environmental breakdown. The CCA requires governments to reduce emissions in line with five-year 'carbon budgets' and the SEA should adopt the same approach, mandating governments to reduce environmental impacts in line with legally-binding targets or other means of measuring the health of natural systems. Crucially, these targets should encompass the environmental impact of goods and services imported to the UK and resultant plans to reach these targets should seek to restore as well as conserve natural systems.² The government's environment bill, which is crucial to maintaining the protection for the environment post-Brexit, could be the vehicle for introducing the content proposed in the SEA. However, as many environmental organisations have pointed out (EAC 2019b), the bill as currently drafted fails to introduce the necessary framework, legally binding targets and interim milestones necessary 'to drive real-world environmental improvements' (National Trust 2019).

The SEA should be overseen by two independent bodies: one to advise and another to enforce. The advisory body – potentially called the Committee on Sustainability – should be an independent, expert public body, modelled on the Committee on Climate Change. It should advise the government on environmental breakdown, its causes and extent, long-term goals and targets, give policy advice on how to achieve these objectives, and assess potential and planned policies, including the impact of domestic sustainability action on ecosystems and societies around the world.

The enforcement body should be independent from the Committee on Sustainability and have powers to hold the whole of government to account on meeting the legally-binding targets of the SEA, taking action to enforce any breaches. The Office of Environmental Protection, proposed by the government as part of the environment bill, could play this role but, as yet, the Office is set to have inadequate enforcement powers (EAC 2019b). Overall, the SEA would protect and enhance environmental protection post-Brexit and go beyond the limited measures offered by the environment bill, providing a model for countries around the world, in the same way as Climate Change Act in 2008.

By requiring the UK economy to exist within environmental limits, the SEA would necessitate a new model of improving social and economic outcomes while reducing environmental impacts. Such an approach would mark a decisive break from the current political-economic paradigm. Structural, economy-wide changes would be required to achieve the SEA's goals while also tackling inequalities and the legacy of injustice, providing a high quality of life to all that breaks from the current, damaging model, and increasing preparedness to the growing impacts of environmental breakdown. We briefly explore three thematic areas that could

² While developing GHG 'budgets' is relatively easy, quantifying those for other natural systems is highly challenging. Furthermore, methods of doing so, including pricing a range of 'natural services', may be unsuitable as, in some instances, they inappropriately attempt to place a monetary value on non-market concepts, such as the aesthetic value of landscapes. IPPR will continue to explore appropriate methods for measuring environmental impact.

realise these changes, continuing to use the UK as a case study, though these ideas are relevant to many other countries around the world.³

The new abundance

The current model for furthering social outcomes in the UK is unsustainable and, irrespective of environmental breakdown, is failing to provide widely shared prosperity throughout the country (IPPR CEJ 2018). Policy should seek to develop a new, sustainable model of abundance that furthers social outcomes and realises the co-benefits of a more sustainable and just society, instead of simply greening the current model (Jackson 2009). Key means of doing so could include the sustainable, ‘universal’ provision of essential services, including social care and transport, that guarantee minimum standards of material safety (Quilter-Pinner and Hochlaf 2019, Portes et al 2017). Expanded services should be complemented by measures which could include jobs guarantees, reductions in working hours and explicit recognition of care and other unwaged work, all of which could potentially improve social outcomes while reducing environmental impacts (Autonomy 2019, Rooney et al 2018, Roberts et al 2019). Such measures would likely require explicit action to reduce the drivers of certain consumption behaviours, as high consumption lifestyles drive environmental breakdown without necessarily improving social outcomes (Ivanova et al 2015). These actions could include changes to advertising standards (Hochlaf et al 2019), pricing of carbon and other resources to counter consumption increases resulting from the rebound effect, wider policies to limit or ban the highest impact consumption, and investment in public goods that encourage more sustainable, fulfilling lifestyles.

Investing for the future

Financial markets are failing to translate the material risks of environmental breakdown into valuation models and investment decisions. Unsustainable investments should be rapidly reduced and replaced by investments to realise more sustainable, just and prepared societies. By way of context, achieving the Sustainable Development Goals may require US\$1.4 trillion to be invested in low- to middle-income countries per year (Schmidt-Traub 2015). Key mechanisms to finance this investment could include greater engagement with new fiduciary standards for pension funds that encourage trustees to take better account of members’ views in relation to environmental, social and governance (ESG) risks and opportunities (DWP 2018), potentially opening up mechanisms to better investment outcomes. Green investment could also be rapidly increased and coordinated through the creation of a public investment bank and a network of regional development banks (GBN 2018, IPPR CEJ 2018). Meanwhile central banks have a major role to play in managing the risks associated with environmental shocks and the transition to a more sustainable economy (BoE 2019b). While the Bank of England is taking measures to disclose how financial risks are managed across its operations, it could go further by factoring in risks associated with environmental breakdown into day-to-day monetary activities and deploying macroprudential policy that rapidly reduces investment flows to damaging activity (Van Lerven 2018). Furthermore, action is also needed to limit the UK’s significant investments in unsustainable infrastructure abroad; 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 2019a).

³ Policy responses will be explored in more detail through IPPR’s ongoing work on environmental justice, both within this project and the IPPR Environmental Justice Commission, building on the work of the IPPR Commission on Economic Justice.

Collective action

Environmental breakdown is a collective action problem. It therefore requires government to lead and coordinate the response. This demands a fundamental reimagining of the state with a decisive break from the idea that the role of government is limited to the correction of ‘market failure’. Elements of a new model include a larger role for the state in directing and coordinating economic activity to meet environmental targets, through significant increases in public investment, including research and development and support to workers and communities affected by the loss of environmentally unsustainable industries (IPPR CEJ 2018). These measures should also be complemented by regulation to ban activities that drive environmental damage and the application of ‘polluter pays’ penalties. As environmental breakdown is partly driven by concentrated power and wealth, broader ownership and increased economic inclusion are necessary elements of a new paradigm. Means of doing so include empowerment of local communities through ‘community wealth-building’ strategies, comprising shared ownership of local economic assets and the commons, community financing initiatives, and public sector procurement aimed at improving local outcomes (CLES 2018). These strategies can provide a mechanism to challenge the inequalities magnified by environmental breakdown, including of class, race, gender and between generations.

F. NARRATIVES

Narratives and language are essential components of a political-economic paradigm, helping describe and justify its worldview and actions. Key narrative elements of the current paradigm include justification for selfishness, purposeless accumulation of wealth, and the growth of monopoly. It elevates private wealth over the commons and public assets and emphasises individual responsibility and responses rather than collective and systemic change (Gofas and Hay 2010). A new paradigm should employ language that better reflects the nature of human behaviour and the actions needed to respond to environmental breakdown.

Many emergent narratives associated with actions to rapidly address climate breakdown draw on war analogies, invoking the mobilisation for the second world war. These analogies are inappropriate, potentially reinforcing the idea that a ‘silver bullet’ exists for solving environmental breakdown, masking the complex and difficult challenge of transformation. Moreover, the effects of environmental breakdown will become increasingly severe over the time in which societies will have to undergo unprecedented structural change. Under such conditions, unfulfilled promises could embolden regressive movements, which are already empowered by the current paradigm’s failed promises. As such, analogies relating to care and justice are arguably more appropriate, forming the basis of a realistic expectation that the future can be better if known actions are taken in the present. At its heart should be a positive-sum narrative in which a great collective effort is founded on cooperation over competition in service of rising to an unprecedented problem. In doing so, it should move beyond the current paradigm’s narrative focus on unsustainable material consumption to promote a new model of wellbeing that realises the co-benefits of actions to respond to environmental breakdown.

CONCLUSION

Environmental breakdown is an unprecedented challenge. It requires rapid, structural change to social and economic systems of a scale and pace unseen in human history. The current political-economic paradigm of assumptions, policies and narratives in countries around the world acts as a major barrier to realising these changes. Time is running out. A new paradigm is needed that realises more sustainable, just and prepared societies, and will have to be founded on deeper structural changes than seen in previous instances of rapid change in economic systems. Our future depends on it.

REFERENCES

- Alcaraz O, Caballero P B, Escribano B and Sureda B (2018) 'Distributing the global carbon budget with climate justice criteria', *Climate Change* DOI: 10.1007/s10584-018-2224-0. https://www.researchgate.net/publication/325410341_Distributing_the_Global_Carbon_Budget_with_climate_justice_criteria
- All Party Parliamentary Group on Wellbeing Economics [APPGWE] (2019) *A spending review to increase wellbeing*, The What Works Centre for Wellbeing. <https://wellbeingeconomics.co.uk/wp-content/uploads/2019/05/Spending-review-to-increase-wellbeing-APPG-2019.pdf>
- Arthur WB (2013) *Complexity economics*, Oxford University Press
- Autonomy (2019) *The shorter working week: A radical and pragmatic proposal*. <http://autonomy.work/wp-content/uploads/2019/03/Shorter-working-week-docV6.pdf>
- Bank of England [BoE] (2019a) 'Climate change', web page. <https://www.bankofengland.co.uk/climate-change>
- Bank of England [BoE] (2019b) *Climate change: What are the risks to financial stability?* <https://www.bankofengland.co.uk/knowledgebank/climate-change-what-are-the-risks-to-financial-stability>
- Bathiany S, Dakos V, Scheffer M and Lenton TM (2018). 'Climate models predict increasing temperature variability in poor countries', *Science Advances*, 4(5), eaar5809 DOI: 10.1126/sciadv.aar5809. <https://advances.sciencemag.org/content/4/5/eaar5809.full>
- Berners-Lee M and Clark M (2013) *The burning question: We can't burn half the world's oil, coal and gas. So how do we quit?*, Profile Books
- Bonneuil C and Fressoz J (2016) *The shock of the Anthropocene: The earth, history and us*, Verso Books
- Brulle R J (2018) 'The climate lobby: A sectoral analysis of lobbying spending on climate change in the United States – 2000 to 2016', *Climatic Change* DOI: 10.1007/s10584-018-2241-z
- Byskov M F (2019) 'Climate change: Focusing on how individuals can help is very convenient for corporations', The Conversation, blog. <https://theconversation.com/climate-change-focusing-on-how-individuals-can-help-is-very-convenient-for-corporations-108546>
- Carbon Brief (2019) 'The countries with the largest CO2 emissions since 1750', Tweet. <https://twitter.com/CarbonBrief/status/1120715988532629506>
- Cave T and Rowell A (2014) *A quiet word: Lobbying, crony capitalism and broken politics in Britain*, Random House
- CLES (2018) *Wealth for all: Building new local economies*. https://cles.org.uk/wp-content/uploads/2018/10/Wealth-for-all_Building-new-local-economies_Neil-McInroy_November-2018.pdf

- Climate Action Tracker [CAT] (2018) *Warming projections global update*. https://climateactiontracker.org/documents/507/CAT_2018-12-11_Briefing_WarmingProjectionsGlobalUpdate_Dec2018.pdf
- Colebrook C (2018) *Measuring What matters: Improving the indicators of economic performance*, IPPR. <http://www.ippr.org/research/publications/measuring-what-matters>
- Committee on Climate Change [CCC] (2019a) *Progress in Preparing for Climate Change: 2019 progress report to parliament*. <https://www.theccc.org.uk/publication/progress-in-preparing-for-climate-change-2019-progress-report-to-parliament/>
- Committee on Climate Change [CCC] (2019b) *UK regulations: The Climate Change Act*. <https://www.theccc.org.uk/tackling-climate-change/the-legal-landscape/the-climate-change-act/>
- 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
- Department for Work and Pensions [DWP] (2018) *Pension trustees: Clarifying and strengthening investment duties*. <https://www.gov.uk/government/consultations/pension-trustees-clarifying-and-strengthening-investment-duties>
- Department of Business, Energy and Industrial Strategy [BEIS] (2017) *The clean growth strategy: Leading the way to a low carbon future*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf
- Diamond J (2005) *Collapse: How societies choose to fail or succeed*, Penguin
- 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
- Dominish E, Florin N and Teske S (2019) *Responsible minerals sourcing for renewable energy*, University of Technology Sydney. <https://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures/our-research/resource-futures/responsible-minerals-for-renewable-energy>
- Edelman (2019) *2019 Edelman Trust Barometer*. <https://www.edelman.com/trust-barometer>
- Environmental Audit Committee [EAC] (2019a) *UK Export Finance: Nineteenth report of session 2017–19*, House of Commons. <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1804/1804.pdf>
- Environmental Audit Committee (2019b) *Scrutiny of the Draft Environment (Principles and Governance) Bill: Eighteenth report of session 2017–19*, House of Commons. <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/1951/1951.pdf>
- Erickson P, Kartha S, Lazarus M and Tempest K (2015) 'Assessing carbon lock-in'. *Environmental Research Letters*. 10(8). <https://iopscience.iop.org/article/10.1088/1748-9326/10/8/084023>
- Evans S (2019) 'In-depth Q&A: The UK becomes first major economy to set net-zero climate goal', *Carbon Brief*. <https://www.carbonbrief.org/in-depth-qa-the-uk-becomes-first-major-economy-to-set-net-zero-climate-goal>
- Fankhauser S, Averchenkova A and Finnegan J (2018) *10 years of the UK Climate Change Act*, LSE and GRI. http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2018/03/10-Years-of-the-UK-Climate-Change-Act_Fankhauser-et-al.pdf
- Gofas A and Hay C (2010) 'Narratives of neoliberalism: The role of everyday media practices and the reproduction of dominant ideas', *The Role of Ideas in Political Analysis* (pp 111-131), Routledge
- Green Bank Network (2018) 'What is a green bank?', webpage. <https://greenbanknetwork.org/what-is-a-green-bank-2/>
- Herrington R et al (2019) 'Leading scientists set out resource challenge of meeting net zero emissions in the UK by 2050', press release, Natural History Museum. <https://www.nhm.ac.uk/press-office/press-releases/leading-scientists-set-out-resource-challenge-of-meeting-net-zero.html>

- Hickel J and Kallis G (2019) 'Is green growth possible?', *New Political Economy*, pp 1–18. <https://www.tandfonline.com/doi/full/10.1080/13563467.2019.1598964>
- Hochlaf D, Quilter-Pinner H and Kibasi T (2019) *Ending the blame game: The case new approach to public health and prevention*, IPPR. <http://www.ippr.org/research/publications/ending-the-blame-game>
- International Energy Agency [IEA] (2018) *World Energy Investment 2018*, OECD/IEA. <https://webstore.iea.org/world-energy-investment-2018>
- Institute for Global Prosperity [IGP] (2019) *Universal Basic Services: Theory and practice: A literature review*. https://ubshub.files.wordpress.com/2019/05/ubs_report_online.pdf
- International Transport Forum [ITF] (2016) *Shared mobility: Innovation for liveable cities, corporate partnership board report*. <https://www.itf-oecd.org/shared-mobility-innovation-liveable-cities>
- IPCC (2018) *Special report: Global warming of 1.5oC: Summary for policymakers*. <https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>
- IPPR Commission on Economic Justice [CEJ] (2018) *Prosperity and Justice*, IPPR. <https://www.ippr.org/research/publications/prosperity-and-justice>
- 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>
- Islam S N and Winkel J (2017) *Climate change and social inequality*, Department of Economic and Social Affairs, United Nations. https://www.un.org/esa/desa/papers/2017/wp152_2017.pdf
- Ivanova D et al (2015) 'Environmental impact assessment of household consumption', DOI: 10.1111/jiec.12371. <https://onlinelibrary.wiley.com/doi/abs/10.1111/jiec.12371>
- Jackson T (2009) *Prosperity Without Growth: Economics for a finite planet*, Routledge
- Joseph Rowntree Foundation [JRF] (2018) *UK poverty 2018*. <https://www.jrf.org.uk/report/uk-poverty-2018>
- Lawrence M (2019) *Road map to a green new deal: From extraction to stewardship*, Common Wealth. <https://common-wealth.co.uk/Road-Map-to-a-Green-New-Deal-From-Extraction-to-Stewardship.html>
- Laybourn-Langton L and Jacobs M (2018) 'Paradigm shifts in economic theory and policy'. *Intereconomics*, DOI: 10.1007/s10272-018-0737-4
- 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>
- Lewis S L and Maslin M A (2018) *Human planet: How we created the Anthropocene*, Yale University Press
- Mahony M and Endfield G (2018) 'Climate and colonialism', *Wiley Interdisciplinary Reviews: Climate Change*, 9(2), p e510. <https://onlinelibrary.wiley.com/doi/abs/10.1002/wcc.510>
- Mazoue A (2019) 'Le Pen's National Rally goes green in bid for European election votes', *France 24*. <https://www.france24.com/en/20190420-le-pen-national-rally-front-environment-european-elections-france>
- Mazzucato M (2018) *The value of everything: Making and taking in the global economy*, Hachette UK
- Moore JW (2017) 'The Capitalocene, Part I: On the nature and origins of our ecological crisis', *The Journal of Peasant Studies*, 44(3), pp 594-630. <https://www.tandfonline.com/doi/abs/10.1080/03066150.2016.1235036>
- Moshiri S and Aliyev K (2017) 'Rebound effect of efficiency improvement in passenger cars on gasoline consumption in Canada', *Ecological Economics*, 131, pp.330-341. <https://www.sciencedirect.com/science/article/pii/S0921800915303438>
- O'Neill D W, Fanning A L, Lamb W F and Steinberger J K (2018) 'A good life for all within planetary boundaries', *Nature Sustainability*, 1, pp 88-95. <https://www.nature.com/articles/s41893-018-0021-4>

- National Trust (2019) Written evidence submitted by the National Trust (DEB0018) to the Environmental Audit Committee Draft Environment (Principles and Governance) Bill inquiry. <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environment-food-and-rural-affairs-committee/prelegislative-scrutiny-of-the-draft-environment-principles-and-governance-bill/written/95616.html>
- New Zealand Treasury (2019) *The Wellbeing Budget*. <https://treasury.govt.nz/sites/default/files/2019-05/b19-wellbeing-budget.pdf>
- Oxfam (2015) 'Extreme carbon inequality: Why the Paris climate deal must put the poorest, lowest emitting and most vulnerable people first', media briefing. https://d1tn3vj7xz9fdh.cloudfront.net/s3fs-public/file_attachments/mb-extreme-carbon-inequality-021215-en.pdf
- Piketty T (2018) *Brahmin left vs merchant right: Rising inequality and the changing structure of political conflict (Evidence from France, Britain and the US, 1948–2017)*, World Inequality Lab. <http://piketty.pse.ens.fr/files/Piketty2018.pdf>
- Portes J, Reed H and Percy A (2017) *Social prosperity for the future: A proposal for Universal Basic Services*, Institute for Global Prosperity. https://www.ucl.ac.uk/bartlett/igp/sites/bartlett/files/universal_basic_services_-_the_institute_for_global_prosperity_.pdf
- Pushpam K (2016) 'We need to measure natural capital wealth, not income alone', news story, United Nations Environment Programme. <https://www.unenvironment.org/news-and-stories/story/we-need-measure-natural-capital-wealth-not-income-alone>
- Le Quéré C et al (2019) 'Drivers of declining CO2 emissions in 18 developed economies', *Nature Climate Change*, 9 pp 213–217. <https://www.nature.com/articles/s41558-019-0419-7#Sec8>
- Quilter-Pinner H and Hochlaf D (2019) *Social care: Free at the point of need: The case for free personal care in England*, IPPR. <http://www.ippr.org/research/publications/social-care-free-at-the-point-of-need>
- 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
- Raworth K (2017) *Doughnut economics: Seven ways to think like a 21st-century economist*, Random House
- Roberts C, Parkes H, Statham R and Rankin L (2019) *The future is ours: Women, automation and equality in the digital age*, IPPR. <https://www.ippr.org/research/publications/women-automation-and-equality>
- Rooney M, Burke J, Taylor M and Lightfoot W (2018) *The future of carbon pricing*, Policy Exchange. <https://policyexchange.org.uk/wp-content/uploads/2018/07/The-Future-of-Carbon-Pricing.pdf>
- Roser M and Ortiz-Ospina E (2017) *Global extreme poverty*, Our World in Data. <https://ourworldindata.org/extreme-poverty>
- RSPB (2016) *State of nature 2016*. <https://www.rspb.org.uk/globalassets/downloads/documents/conservation-projects/state-of-nature/state-of-nature-uk-report-2016.pdf>
- Rudebusch G D (2019) *Economic letter: 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/>
- Schmidt-Traub G (2015) *Investment needs to achieve the Sustainable Development Goals: Understanding the billions and trillions*, SDSN. <http://unsdsn.org/wp-content/uploads/2015/09/151112-SDG-Financing-Needs.pdf>
- Sealey-Huggins L (2017) '1.5° C to stay alive': Climate change, imperialism and justice for the Caribbean', *Third World Quarterly*, 38(11), pp 2444–2463
- Steffen W et al (2018a) '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>
- Stirling A and Laybourn-Langton L (2017) 'Time for a new paradigm? Past and present transitions in economic policy', *The Political Quarterly*, 88(4), pp 558–569. <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-923X.12415>
- Strauss D (2018) 'French 'gilets jaunes' show pain of Macron's tax policy', *The Financial Times*. <https://www.ft.com/content/b6297b3a-f4bd-11e8-9623-d7f9881e729f>

- Trucost Plc (2013) *Natural capital at risk: The top 100 externalities of business*, Trucost. <http://naturalcapitalcoalition.org/wp-content/uploads/2016/07/Trucost-Nat-Cap-at-Risk-Final-Report-web.pdf>
- Union of Concerned Scientists (2012) *A climate of corporate control: How corporations have influenced the US, dialogue on climate science and policy*, UCS. https://www.ucsusa.org/sites/default/files/legacy/assets/documents/scientific_integrity/a-climate-of-corporate-control-report.pdf
- University of Exeter (2017) 'Climate change impacts already locked in, but the worst can still be avoided', *ScienceDaily*, 16. <https://www.sciencedaily.com/releases/2017/11/171116105020.htm>
- Van Lerven F (2018) *The Bank of England and a 1.5°C green transition: Reshaping finance*, New Economics Foundation. <https://neweconomics.org/uploads/files/reshaping-finance.pdf>
- World Bank (2018) 'New projects to boost renewable energy and improve climate resilience in Marshall Islands', press release. <https://www.worldbank.org/en/news/press-release/2018/06/06/new-projects-to-boost-renewable-energy-and-improve-climate-resilience-in-marshall-islands>

