



Defining resilience

PRINCIPLES FOR CLIMATE
ADAPTATION IN PLACE

By Sandy Forsyth

About Localis

Who we are

We are a leading, independent think tank that was established in 2001. Our work promotes neo-localist ideas through research, events and commentary, covering a range of local and national domestic policy issues.

Neo-localism

Our research and policy programme is guided by the concept of neo-localism. Neo-localism is about giving places and people more control over the effects of globalisation. It is positive about promoting economic prosperity, but also enhancing other aspects of people's lives such as family and culture. It is not anti-globalisation, but wants to bend the mainstream of social and economic policy so that place is put at the centre of political thinking.

In particular our work is focused on four areas:

Decentralising political economy. Developing and differentiating regional economies and an accompanying devolution of democratic leadership.

Empowering local leadership. Elevating the role and responsibilities of local leaders in shaping and directing their place.

Extending local civil capacity. The mission of the strategic authority as a convener of civil society; from private to charity sector, household to community.

Reforming public services. Ideas to help save the public services and institutions upon which many in society depend.

What we do

We publish research throughout the year, from extensive reports to shorter pamphlets, on a diverse range of policy areas. We run a broad events programme, including roundtable discussions, panel events and an extensive party conference programme. We also run a membership network of local authorities and corporate fellows.

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Introduction

As climate shifts worldwide, councils across England are being hit by increasingly extreme weather patterns including violent storm surges, unbearable temperatures, and widespread flooding. Even under the most minimal of warming scenarios, infrastructure, public health, and GDP will all worsen due to the weighty pressure of extreme weather events. If action is not taken, the UK might see economic damage of up to 7.4 percent reduction of its potential GDP by the end of the century, alongside devastating shocks to its agricultural sector and to the health of its population. Yet with suitable upstream mitigation and preventative measures in place, that figure would drop to a predicted 2.4 percent.

Local authorities have the capability to enact necessary resilience measures for both the built and natural environment. Different areas are undergoing their own unique changes, and specialised adaptation is necessary. At the level of place, our local authorities are best situated to understand and to act upon individual resilience requirements from city to country to coast. However, the current funding landscape for local government to deliver resilient places is far too piecemeal and insufficient. Furthermore, the system is overwrought with complexity - the division of responsibilities between local, central government and industry are too fragmented and disconnected for this to be addressed as a whole place agenda.

The Local Resilience Act

To address these problems, Localis proposes a **Local Resilience Act**. The act would serve to:

- Ensure funding for place resilience to meet a statutory duty upon local authorities, as a core service line, to provide the best adaptation measures for the built and natural environments in the coming generations.
- Streamline existing legislation to allow the necessary changes to happen at the local level.
- Provide a workable and clearly defined conception of 'resilience' to be adopted in place.

The level of place is where climate change adaptation is most able to mitigate the risks of dangerous weather changes. Changes to transport, buildings, local businesses, land use and biodiversity are all required and can be enacted by local authorities. These changes, however, can only be affected at the level of place if the role of local government in directing resilience is consolidated, and if the necessary funding and revenue streams are provided.

This report

This report is the second in a series examining various dimensions of a Local Resilience Act, looking at how effective climate adaptation at the local level might be legislated for through the lens of defining resilience. A broad understanding of what the concept of 'climate resilience' means at the national level is crucial to building the kind of framework for local action that a Local Resilience Act would seek to establish. Naturally, the specifics of climate resilience will mean very different things in a built-up, inland urban area and a small, coastal rural village. Nevertheless, an inclusive definition of resilience can help all actors involved in climate adaptation coalesce around an overarching goal, establishing shared principles that form a golden thread running through action from the hyper-local to the multinational.

Establishing such a set of principles requires a broad survey of definitions and applications of resilience. This short report analyses how resilience is defined at various spatial scales and in a range of policy contexts; how UK legislation currently defines resilience, and what international precedent exists for climate adaptation legislation. Drawing from these sources, the report concludes with a list of six principles for a Local Resilience Act which could provide both a baseline and a guidance system for local authorities to shore up resilience to the impacts of climate change in place.

1. Defining resilience

This first section considers what a definition for climate resilience would need to entail, surveys a number of different institutional definitions and finally looks at the current working understanding of resilience at the central government level.

1.1 What do we mean when we talk about climate resilience?

There are several working definitions for resilience, utilised on levels from the individual to the global, but there are commonalities that run through every definition. At its most basic, resilience is the “ability to recover from or adjust easily to misfortune or change”¹. When applied to people, communities, and infrastructure – and the kinds of misfortunes that can impact us beyond our ability to respond as individuals – a more holistic definition is required. The Department for International Development (DFID) states that resilience is: “The ability of countries, communities and households to manage change by maintaining or transforming living standards in the face of shocks or stresses without compromising their long-term prospects.” The UN agrees that resilience is the work of a system, on whichever level from household to society, “to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner”². The OECD adds that resilience must involve positive adaptation and transformation, and USAID notes that resilience should reduce chronic vulnerability and facilitate inclusive growth³.

A suitable definition for resilience would seem to include the following:

- the different levels of system to which damage can occur;
- anticipating the long-term and short-term possibilities for risk;
- the possibility of change to the system;
- the multiple dimensions of future adaptation and development, including the importance of inclusivity.

1 Merriam-Webster (2023) - resilience

2 UNISDR, WMO (2012) – Disaster Risk and Resilience

3 Department For International Development (2016) – What is Resilience?

According to the Grantham Institute for Climate Change and the Environment, resilience is shock-absorbing, coping, evolving, adapting and transforming⁴. The recently published UK Government National Resilience Framework, although not providing a specific definition for resilience, claims that resilience in the UK should be based on three core principles⁵:

1. a developed and shared understanding of the civil contingencies risks we face;
2. prevention rather than cure wherever possible;
3. resilience as a 'whole of society' endeavour'.

The National Resilience Framework should, therefore, provide a strategy for the transformation of institutions and communities across the UK, hopefully holding open the door to evolution at every level.

Climate resilience, on the back of these definitions, would therefore be the ability for countries, communities, and households to recover from or adjust to climate-related change, reducing chronic vulnerability to climate risks and facilitating inclusive growth alongside the changing climate.

Climate change holds myriad risks to people, communities, and infrastructure. These risks can be both short- and long-term and thus require both short- and long-term adaptations. Furthermore, climate-related risks require equitable responses across countries and communities for those who are more vulnerable than others. Adaptation measures include the development of green infrastructure, to manage flooding and high urban temperatures, and the construction of water efficient buildings to enable resilience to drought.

Climate resilience is not just about adaptation⁶: for example, financial resilience is vital, as is the ability to 'build back better' in the aftermath of extreme climate

4 Grantham Research Institute on Climate Change and the Environment (2022) – What is the difference between climate change adaptation and resilience?

5 Cabinet Office (2022) – The UK Government Resilience Framework

6 Grantham Research Institute (2022) – What is the difference between climate change adaptation and resilience?

events⁷. At an intermediary level between the citizen and the national state with multiple governance responsibilities impacting on the built environment and land management, local authorities are ideally placed to not only affect the best possible adaptation to climate change at the level of place, but also to develop resilient communities with minimal vulnerabilities and flexible, prepared institutions and infrastructure.

1.2 How does institutional and policy context impact how resilience is defined?

As part of this research, 27 different organisational definitions of resilience were analysed. The table below provides a sample, showing the variety of definitions of resilience from institutions operating at different spatial scales within different policy contexts.

Organisation	Definition
Canadian International Development Agency	The ability of individuals, households, governments, regions, and systems to mitigate, resist, absorb, and recover from the effects of shocks and disasters in a timely, sustainable, and efficient manner.
UK Department for International Development	The ability of countries, communities and households to manage change by maintaining or transforming living standards in the face of shocks or stresses without compromising their long-term prospects.
European Commission	The ability of an individual, a household, a community, a country or a region to withstand, to adapt, and to quickly recover from stresses and shocks.

7 Overseas Development Institute (2015) – The triple dividend of resilience

<p>German Federal Ministry of Economic Cooperation and Development</p>	<p>The ability of people and institutions – be they individuals, households, communities or nations – to deal with acute shocks or chronic burdens (stress) caused by fragility, crises, violent conflicts and extreme natural events, adapting and recovering quickly without jeopardising their medium and long-term future.</p>
<p>Grantham Institute - Climate Change and Environment</p>	<p>The capacity or ability to anticipate and cope with shocks, and to recover from their impacts in a timely and efficient manner</p>
<p>Intergovernmental Panel on Climate Change</p>	<p>The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change.</p>
<p>International Federation of Red Cross and Red Crescent Societies</p>	<p>The ability of individuals, communities, organizations or countries exposed to disasters, crises and underlying vulnerabilities to anticipate, reduce the impact of, cope with and recover from the effects of adversity without compromising their long-term prospects.</p>
<p>London Resilience Partnership</p>	<p>An enabler which helps London to survive and prosper. It is the ability of institutions and communities to work together to prevent, handle then recover and learn from disruption, and adapt to change.</p>

OECD	The ability of individuals, communities and states and their institutions to absorb and recover from shocks, while positively adapting and transforming their structures and means for living in the face of long-term changes and uncertainty.
Oxfam	The ability of women, men, and children to realise their rights and improve their well-being despite shocks, stresses, and uncertainty.
Stockholm Resilience Centre	Resilience is the capacity of a system, be it an individual, a forest, a city or an economy, to deal with change and continue to develop. It is about how humans and nature can use shocks and disturbances like a financial crisis or climate change to spur renewal and innovative thinking.
World Economic Forum	Resilience is the ability to deal with adversity, withstand shocks, and continuously adapt and accelerate as disruptions and crises arise.

Looking at the keywords unique to some of the institutional definitions reveals certain patterns. Beyond ideas that crop up consistently across definitions, such as **coping**, **structures**, and **adversity**, noting where the outliers fall can help produce a nuanced understanding of how certain institutions require different definitions of resilience from which to work and develop.

While many of the above definitions are concerned with potential vulnerabilities to adversity and risk across the board, it is the charitable institutions that provide a focus on the **rights** of individuals and communities, and the importance of defining **roles and responsibilities** when in positions of potential stress and current shocks. There is also an emphasis on the importance of **integration**. Alongside academic research institutions, charities tend to be concerned by

wellbeing as a factor in resilience and join with international institutions in pointing out the element of **uncertainty** that actors must be resilient against.

Turning to governmental institutions operating globally, there is evidently a focus on **efficiency** and, as for international institutions, on **positive adaptation**. The Canadian International Development Agency is the only of these institutions to figure **sustainability** into its definition, while the United States Agency for International Development is alone in emphasising **inclusive growth**.

Mitigation clearly appears at the forefront of resilience measures among government agencies, and this trend is mirrored – again – among international institutions. Perhaps an interesting consideration that appears both in the Scottish government’s preparation document, using a definition prepared by research from think tank Demos, and from the academic sector is that of **identity**, something not often considered in terms of resilience and yet understandably interlinked with themes of individuals, community, and states.

There are overlaps between international organisations and government agencies when it comes to defining resilience, with the focal points of **mitigation**, **positive adaptation**, and suitable **living standards** arising among them. Other international organisations turn their focus to **anticipation** of risk, and the need to **accelerate** in terms of adaptive capacity, while there is agreement within the research industry that **continuous** adaptation and development is needed, alongside a **social** approach and the maintenance of the capacity for **self-organisation**.

Agreement falls between research and international organisations regarding self-organisation and the ability to **negotiate**, alongside the importance of **continuous** development, and of having the right **resources** – including **social** and **cultural** resources – through which to be resilient. Like charities, research institutions recognise **wellbeing** as an element of resilience, and like government agencies stress the significance of **timely and efficient** responses to shocks and stresses and that **identity** must not be sacrificed in preparation for and response to risk. The idea of resilience or adaptation as an **enabler** appears significant to two British institutions focused on subregional action: the Local Government Association and the London Resilience Partnership.

1.3 How does the UK Government define resilience?

As already stated, the official line from central government on resilience provides no concrete definition of the word. The work of the National Resilience Framework is stated to be proposing “measures and investment to enable the UK’s resilience system to prevent risks manifesting or crises happening where possible,” and further “to improve response and preparation for risks and ensure that partners throughout the system are able to play their part fully”⁸. This focus on partners is fundamental to the framework’s intentions of laying out risk responsibility throughout the UK: the role of the framework in this sense is, essentially, to define what parts should be played.

Beyond that of the already-mentioned Department for International Development, there are many departments in central government that must have resilience at the core of their work, and as such there are myriad considerations across various reports, strategies, and frameworks of what resilience should be for the UK. The Cabinet Office’s policy paper entitled, “Global Britain in a Competitive Age: the Integrated Review of Security, Defence, Development and Foreign Policy” notes that “national resilience is the product of multiple factors, including effective and trusted governance, government capabilities, social cohesion, and individual and business resilience.”⁹ The Department for Digital, Culture, Media & Sport specifies cyber resilience as “the ability for organisations to prepare for, respond to and recover from cyber-attacks and security breaches”¹⁰.

In 2011, the Cabinet Office produced guidance on enhancing the resilience of communication documents, turning focus to internet resilience as both “the inherent physical resilience that is a consequence of the highly interconnected network of resources” and “the protocols, or sets of rules, which are used to communicate information across the networks”¹¹. The Forestry Commission understands that “Making choices about how we manage our woodland with

8 Cabinet Office (2022) – The UK Government Resilience Framework

9 Cabinet Office (2021) – Global Britain in a Competitive Age: the Integrated Review of Security, Defence, Development and Foreign Policy

10 Department for Science, Innovation and Technology (2023) – Cyber resilience

11 Cabinet Office (2011) – Resilient communications: documents

a view to a climate that will be very different to the one we currently have is essential for their future resilience"¹², and Defra's 2018 Tree Health Resilience Strategy develops a resilience circle outlining the three outcomes of "resistance, response and recovery, and adaptation" to "reduce the risk of the threat occurring, and strengthening of our natural resource to better withstand future threats"¹³.

An evidence review carried out by the Flood and Coastal Erosion Risk Management Research and Development Programme alongside Defra on the concept of flood resilience in 2020 produced a comprehensive definition based on a review of academic literature including the idea that resilience is "the ability or capacity to prepare for, respond to, and recover from damaging hazard events," alighting upon the idea that the "concept of capacities was a key one that emerged from the literature". Defra's Call for Evidence thus produced four concepts of resilience: resilience as resistance, as bounce-back, as adaptation, and as transformation¹⁴. This document is one of the more direct in its approach to defining resilience from those across government and given its context of providing a framework for flood management, it is unsurprising that the clarity is required. Perhaps, a holistic definition of resilience would not be remiss in a more centralised, national resilience strategy, or indeed in terms of a strategy for local resilience to the climate crisis.

12 Forestry Commission (2022) – Responding to the climate emergency with new trees and woodlands

13 Defra (2018) – Tree Health Resilience Strategy

14 Defra (2020) – Evidence Review of the Concept of Flood Resilience

2. Legislating for resilience

This section looks at how definitions of resilience can be operationalised in national legislation, covering international precedent, as well as academic analysis thereof, and then looking at how resilience currently exists in UK law.

2.1 International precedent

Legislative work on climate resilience is scarce on the international scale. While there are many countries that have developed executive powers concerned with ramping up adaptive capacity in the face of the climate emergency, actual legislative powers with a sole and comprehensive focus on adaptation are few and far between. The Grantham Institute has produced a list that outlines the international precedent in this area, with the following countries recorded as having legislation specifically concerned with resilience: the USA, Montenegro, Dominica, Paraguay, Argentina, Japan, and Sweden. Notably, many of these countries are some of those that are most vulnerable to the impacts of climate change, and so legislation dedicated to adaptation seems naturally linked to relative vulnerability. With vulnerabilities increasing in other countries – such as the UK – it is only sensible that we also turn to focussing on bolstering our adaptive capacities.

It should be noted that the database at present excludes information concerned with the response of sub-national governments to climate change¹⁵. There are, additionally, many countries that dedicate sections of various kinds of Climate Change Acts or other laws to adaptation, although like the UK's Climate Change Act of 2008, these documents tend to emphasise the reduction of emissions and the mitigation of climate change over adaptation.

The most far-reaching of the published acts regarding adaptation to climate change are those of Japan, Montenegro, and Dominica, perhaps not unsurprising given that these countries are all greatly vulnerable to the impacts of climate risks. The USA Infrastructure Investment and Jobs Act (2021) focuses on resilient infrastructure, and Paraguay's Law No 3001/06 has a greater focus

on adaptive ecosystems and biodiversity. Argentina's Law 27520 on Minimum Budgets for Adaptation and Mitigation to Global Climate Change does about what its title implies, with the additional creation of a National Cabinet of Climate Change whose various roles include the implementation of the National Plan for Adaptation and Mitigation to Climate Change¹⁶.

There is a good deal of international precedent for the creation of bodies specifically dedicated to the climate change response. Sweden's Government Proposition 2017/18:163 is not specifically dedicated to climate adaptation, but it does push the National Climate Strategy into existing legislation by adding two changes to the Planning and Building Act of 2010. These changes include the aim "of improving municipalities' preparedness for climate change... [involving] a requirement for municipalities to provide their views in their structure plans on the risk of damage to the built environment" due to climate-related risks, and "how such risks can be reduced or eliminated" and ensuring that municipalities account for ground permeability in the adoption of development plans¹⁷.

In 2019, Montenegro published a Law on Protection from the Negative Impacts of Climate Change. This framework, similar to the UK's own Climate Change Act 2008, focuses much of its effort on emissions and a strategy for low-carbon development, while also bringing climate adaptation into the legislative structure of the country¹⁸. Fiji, similarly, in its Climate Change Act of 2021, sets out both mitigation and adaptation strategies, including the requirement that "relevant agencies... conduct risk assessments and... decide on new buildings and infrastructure approvals based on resilience estimates."¹⁹ Fiji thus joins the many countries whose climate change acts include specifications of climate resilience. The EU Commission has produced legislation concerned with primarily the

16 Global Regulation (2019) – Law On Minimum Budgets For Adaptation And Mitigation To Global Climate Change Provisions

17 Swedish National Knowledge Center for Climate Change Adaptation (2017) – National Strategy for Climate Change Adaptation

18 Food and Agriculture Organization of the UN (2019) – Montenegro: Law on the protection from negative impacts of climate change

19 Grantham Research Institute (2021) – Fiji: Climate Change Act 2021

regulation of emissions and the drive to net zero, however, the European Climate Law does make certain provisions for adaptation, making note of the Paris Agreement's aim of strengthening "the global response to the adverse impacts of climate change", set out in Article 7 of the Agreement²⁰, and emphasising that member states must improve their adaptive capacities²¹.

Dominica's 2018 Climate Resilience Act is substantial, coming about due to the destruction wrought by Hurricane Maria in 2017. This Act sets about its intention to "rebuild Dominica as a climate resilient nation"²² and as such establishes a Climate Resilience Execution Agency for Dominica (CREAD) with the function of preparing a Climate Resilience and Recovery Plan for the country. Mauritius also devotes part of its Climate Change Act (2020) to establishing bodies for preparedness to climate change. This Act calls for the creation of a Department of Climate Change, a Climate Change Committee, and an Inter-Ministerial Council on Climate Change, alongside the formulation of a National Climate Change Adaptation Strategy and Action Plan²³. The functions of these bodies are to ensure, according to the Act, that every relevant sector in Mauritius is suitably adapted to climate change, and particularly the Department of Climate Change is intended to develop policies of climate risk mitigation and adaptation, to the extent even of taking charge of climate change database monitoring and reporting, implementing research into climate change and vulnerabilities to climate change, and the dissemination of information about climate change.

Japan appears to be leading the pack in terms of specific climate adaptation legislation, having set out a Climate Change Adaptation Act in 2018 that adopted and updated the 2015 Climate Change Adaptation Plan within the country's legislation. Article 4 of the Act specifies the responsibilities of local governments, and Article 12 mandates the creation of local climate change adaptation plans. Significantly, the Act notes that these local plans have the role of setting out climate change adaptation "in accordance with the natural,

20 United Nations (2015) – Paris Agreement

21 EUR-Lex (2021) – 'European Climate Law'

22 Grantham Research Institute (2018) – Dominica: Climate Resilience Act, 2018

23 Government of Mauritius (2020) – The Climate Change Act 2020

economic and social circumstances of their local area"²⁴: emphasising the capacity that local authorities have for place-based adaptation. The Act also sets out the creation of Local Climate Change Adaptation Centres and Regional Councils on Climate Change Adaptation to further establish this ideal of place-based resilience, alongside acknowledging the importance of information being made available to the general public. Additionally, New Zealand has a Climate Change Adaptation Act on the way, with focus being on a policy of "managed retreat" from areas most effected by climate change. The role of local authorities in the implementation of this Act remains as yet unclear.²⁵

Countries such as the US are similar to the UK in the disconnected nature of legislation when it comes to adaptation, with various policies and acts working together to provide resilience without one streamlined, legal approach, and while increasingly many have adopted climate change acts – for example, Nigeria, Colombia, Denmark, and Brazil – there is very much still a wider emphasis on emissions and mitigation than upon adaptation.

2.2 Academic analysis of resilience legislation

There is a limited albeit comprehensive body of academic work surrounding the implementation of adaptation policies through legislation. As is often the case, the volume of work on resilience pales in comparison to that devoted to emissions and mitigation. Furthermore, the focus on local decision-making is not always brought to the fore in questions of legislation. Where this focus does take front-and-centre stage, however, the necessity of providing legislation that accounts for local actors becomes highly evident²⁶.

Scholarship agrees that resilience legislation must be, primarily, adaptable²⁷. The nature of climate change means that the challenges and risks involved are

24 Japanese Law Translation (2018) – Climate Change Adaptation Act

25 New Zealand Law Society (2021) – The Proposed Managed Retreat and Climate Change Act & Local Authorities

26 Mia Landauer et al. (2018) – The role of scale in integrating climate change adaptation and mitigation in cities

27 Jan McDonald and Phillipa C. McCormack (2021) – Rethinking the role of law in adapting to climate change

constantly evolving, and so any legal approach must allow for similar evolution as new research is developed and new risks are realised. Goals, adaptation objectives, and management of natural resources must remain flexible²⁸, and legislation tailored to local conditions²⁹. Upon implementation, beyond the necessity of a monitoring and evaluation process^{30,31}, strategies should have the capacity for modification³². Flexibility will come from attention to new research, monitoring, study, and innovative thinking, which should all be supported by legislation^{33,34}. For example, the creation and use of alternative and pioneering policy instruments that go beyond the use of traditional “command-and-control” regulatory instruments – a range of which will still be required for policy to be comprehensive^{35,36} - will be vital to the work of the law in ensuring resilience. It seems clear, given the above discussion, that contemporary analysis sees potential resilience legislation as concerned with goal setting, implementation, evaluation, and subsequent modification.

Because resilience responds to often unpredictable events, and risk assessment can only go so far in terms of accuracy, legislation needs to reflect the inherent uncertainty of risk³⁷. Therefore, legislation that removes itself from the focus of trying to project or prophesise the future direction of climate change, deemphasising the “front-end focus” of current approaches to resilience and,

28 Robin Kundis Craig (2010) – Stationarity is Dead – Long Live Transformation: Five Principles for Climate Change Adaptation Law

29 Jan McDonald (2011) – The role of law in adapting to climate change

30 Jan McDonald and Megan C. Styles (2014) – Legal Strategies for Adaptive Management under Climate Change

31 Peter P.J. Driessen and Helena F.M.W. van Rijswijk (2011) – Normative aspects of climate adaptation policies

32 Jan McDonald and Megan C. Styles (2014) – Legal Strategies for Adaptive Management under Climate Change

33 Jan McDonald and Phillipa C. McCormack (2021) – Rethinking the role of law in adapting to climate change

34 Jan McDonald and Megan C. Styles (2014) – Legal Strategies for Adaptive Management under Climate Change

35 Jan McDonald (2011) – The role of law in adapting to climate change

36 Peter P.J. Driessen and Helena F.M.W. van Rijswijk (2011) – Normative aspects of climate adaptation policies

37 Victor B. Flatt (2012) – Adapting Laws for a Changing World: A Systemic Approach to Climate Change Adaptation

instead, taking control of follow-up mechanisms, might promote effective adaptation³⁸.

Furthermore, social justice, or the “equity dimensions” of adaptation³⁹, must remain central to all discussions and implementation processes, and these discussions must be informed by diverse voices⁴⁰. A just distribution of both the benefits and the costs of resilience will be required across all stakeholders⁴¹. Collaboration is a necessity in the formulation, the implementation, and in the later evaluation and modification of policy objectives and strategies, particularly regarding the distribution of responsibilities between government, media, sectors, and citizens^{42,43}. Long term planning can be realised via coordination of these groups, and experts have noted that local actors – as vital as they are to the adaptive process – will require external support⁴⁴. Through appropriate coordination, therefore, all levels of actors must be involved by legislation, but those at the local level will have the most on-the-ground capacity to both interact with immediate stakeholders and react to localised climate risks and projections⁴⁵.

Interlinked with this idea of collaboration, there is general agreement among experts that transparency must be ensured at every step of the process. Various researchers call for transparent processes⁴⁶, liability regimes, and/or other procedural guarantees such as equal access to information and public

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- 38 J.B. Ruhl (2011) – General Design Principles for Resilience and Adaptive Capacity in Legal Systems – With Applications to Climate Change Adaptation
- 39 Jan McDonald and Phillipa C. McCormack (2021) – Rethinking the role of law in adapting to climate change
- 40 Jan McDonald (2011) – The role of law in adapting to climate change
- 41 Peter P.J. Driessen and Helena F.M.W. van Rijswijk (2011) – Normative aspects of climate adaptation policies
- 42 J.B. Ruhl (2011) – General Design Principles for Resilience and Adaptive Capacity in Legal Systems – With Applications to Climate Change Adaptation
- 43 Peter P.J. Driessen and Helena F.M.W. van Rijswijk (2011) – Normative aspects of climate adaptation policies
- 44 Robin Kundis Craig (2010) – Stationarity is Dead – Long Live Transformation: Five Principles for Climate Change Adaptation Law
- 45 Victor B. Flatt (2012) – Adapting Laws for a Changing World: A Systemic Approach to Climate Change Adaptation
- 46 Jan McDonald and Phillipa C. McCormack (2021) – Rethinking the role of law in adapting to climate change

participation⁴⁷. The importance of an “efficient and effective compliance system” is additionally stressed for a suitably adaptive management system⁴⁸.

At present, many policy recommendations and forms of guidance that focus on adaptation come alongside measures of mitigation, sustainability, and other objectives such as public health, environmental protection, or infrastructure development. These overlaps are expected, and useful, and future legislation concerned with resilience will likely remain interlinked with various different sectors, and so must ensure that co-benefits are maximised⁴⁹. Significantly, it has been observed that whereas legislation concerned particularly with the mitigation of climate change – i.e., with net zero, emissions strategies, and other forms of legislation particularly stemming from such international agreements as the Kyoto Protocol and the Paris Agreement – is both highly binding and highly precise, adaptation has seen low legalisation and low precision, leading to ambiguity in how states consider their obligations to ensuring climate resilience⁵⁰. Tying into the idea of flexible obligations and the evaluation of strategic processes, the most influential kind of legislation will be quantifiable and have the capacity for precise evaluation via clear indicators of success⁵¹.

Resilience to climate change will be difficult to achieve and not without certain sacrifices⁵², but appropriate legislation will ensure that actors at every level understand their obligations to achieving resilience and also that local authorities have the capacity and resources to enact some of the most effective approaches to climate change adaptation. Legislation will need to ensure collaboration and transparency while setting out clear and quantifiable goals that can be evaluated

47 Peter P.J. Driessen and Helena F.M.W. van Rijswijk (2011) – Normative aspects of climate adaptation policies

48 Jan McDonald and Megan C. Styles (2014) – Legal Strategies for Adaptive Management under Climate Change

49 Jan McDonald and Phillipa C. McCormack (2021) – Rethinking the role of law in adapting to climate change

50 Nina Hall and Åsa Persson (2017) – Global climate adaptation governance: Why is it not legally binding?

51 Jan McDonald and Megan C. Styles (2014) – Legal Strategies for Adaptive Management under Climate Change

52 Robin Kundis Craig (2010) – Stationarity is Dead – Long Live Transformation: Five Principles for Climate Change Adaptation Law

and modified over time, and a localised approach will provide some of the most necessary actions to combat and be resilient to climate change.

2.3 Current UK legislation

Although the Climate Change Act of 2008 has provided a world-leading example of legislation to ensure a low carbon and net zero future, there is room for more streamlined legislation that ensures that every level of government can work collaboratively towards adaptation at a localised level. While legislation concerned with mitigation has been, rightfully, very precise, multidimensional, and consistently outlines quantifiable obligations that legally bind actors into working towards low emissions and sustainability, the same cannot be said for adaptation governance. Climate adaptation lacks an overarching, widely enabling piece of legislation equivalent to the Climate Change Act's bold steps towards decarbonisation.

Current UK legislation which has relevance to local climate adaptation spreads across five main categories, which could potentially be brought together at the local level. These categories, and some examples of legislation, are listed overleaf.

Policy area	Relevance to local resilience
Decarbonisation and energy	<p>The Climate Change Act 2008 is the comprehensive statutory basis for the UK's decarbonisation, it also considers the necessity of changing behaviours and approaches over time in its establishment of the Climate Change Committee to "make provisions about adaptation to climate change". The Planning and Energy Act 2008 set out the requirement for local authorities to source renewable or low-carbon energy in new development and gave councils the power to set energy efficiency standards exceeding building regulations.</p>
Planning and land use	<p>The much-amended Town and Country Planning Act is the historic statutory undergird for the planning system, with acts such as the Planning and Compulsory Purchase Act 2004, the Planning Act 2008 and the Housing and Planning Act 2016 – to name a few – further fleshing out the role of local government in ensuring a sustainable local environment. These documents are consolidated and streamlined into the National Planning Policy Framework, which has been criticised for a lack of prioritisation and specificity where climate change is concerned⁵³.</p>
Flooding, water and drought	<p>The Flood and Water Management Act 2010 is one of the most prominent pieces of legislation which currently produces tangible consideration of climate resilience in local governance of land management and the built environment. As well as establishing Lead Local Flood Authorities among upper-tier councils, the act makes these authorities statutory consultees on development in flood-risk areas and required that they keep flood risk registers for their areas.</p>

53 For further information on the role of planning policy in resilience, see Climate Resilience in Local Plans

<p>Conservation of the environment</p>	<p>The Environment Act 2021 has implications for local development. The proposed formation of the Office for Environmental Protection – as a watchdog for waste efficiency, air quality, water, biodiversity and conversation – could have major implications for how resilience is factored into local governance. The Office for Environmental Protection is in its infancy, however, and how its powers to investigate and challenge public authorities will be used in practice remains to be seen. The duty for local authorities to protect the environment and safeguard biodiversity has been stressed many times, for example as a general rule for public bodies in the Natural Environment and Rural Communities Act 2006.</p>
<p>Emergency response</p>	<p>The Civil Contingencies Act 2004 set important precedent for understanding resilience as a concept which requires a localised, whole-society approach. As well as establishing local authorities as “category one responders” charged with preparing and planning for emergencies, the Act establishes Local Resilience Forums bringing together the public sector within a subregional geography to share information and collaborate across silos.</p>

The above is not intended to provide a comprehensive accounting of the statutory basis for resilience and adaptation – rather, it illustrates the broad array of legislation currently dealing with the topic at local level and provides an indicative map of the complex policy landscape which must be navigated to streamline the role of councils in climate adaptation. The overlapping and potentially incomplete nature of the current statutory framework is illustrated in criticisms of the National Planning Policy Framework as it currently stands for failing to properly embed climate adaptation in the planning system⁵⁴. The case for a Local Resilience Act is of a similar vein, positing that the role of local authorities in enabling whole-society climate resilience should similarly be consolidated, streamlined and centred.

3. Principles for a local resilience framework

This final section draws together the conclusions from sections two and three to extrapolate some guiding principles for a local resilience framework.

3.1 A broad definition

Local councils play a unique and extremely multifaceted role in society. Councils provide the basic services which undergird day to day life, as well as governing the built environment and holding mandates for skills provision and local economic development. Beyond this, councils are providers of care, at a direct and statutory level but also in less obvious forms such as providing advice and support services across a broad range of policy areas. They are also often a nexus for community groups in their interactions with government policy, and as such play an important connecting role.

Looking across various institutional definitions of resilience, some overarching themes are visible depending on the type of institution and policy area. The unique and complex role of local government in civic life means that its approach to climate resilience must take on elements of all these definitions.

- Governments stress:
 - a focus on **efficiency**.
 - **positive adaptation**.
 - the need to navigate **sustainability and growth**.
 - **acceleration** of resilience as a key factor.
 - a **whole society** approach with capacity for self-organisation.
- Charities stress:
 - the **rights** of individuals and communities.
 - the importance of defining **roles and responsibilities**.
 - the importance of **integration** in adaptation.
 - **wellbeing** as a factor in resilience.

- Research organisations and INGOs stress:
 - self-organisation and the ability to **negotiate**.
 - having the right **resources** – including **social** and **cultural** resources – through which to be resilient.
 - the principle that **identity** must not be sacrificed in preparation for and response to risk.
 - resilience as an **enabler** for action.

3.2 An enabling framework

The need for a broad definition, combined with the differing circumstances faced by authorities across the country, points towards a Local Resilience Act which establishes an enabling framework for locally-led climate adaptation. Building on the literature analysing resilience legislation reviewed in section two and taking these definitions into account, six principles can be identified for a local resilience framework.

A local resilience framework must be:

- **Adaptable.** Given the inherent uncertainty and multiple intangibles involved in climate adaptation, the local resilience framework must be able to quickly respond to changing circumstances.
- **Localised.** The creation of a framework with a baseline for adaptation must not mean a multiplicity of hard and fast rules which may be more applicable in some areas than others.
- **Equitable.** The challenge of both planning and financing climate adaptation will vary considerably for different parts of the country, this reality must be factored into the framework for local resilience.
- **Transparent.** There must be a clear distribution of responsibilities in shoring up climate resilience between central government, councils, sectors of the economy and citizens.
- **Accountable.** A compliance system ensuring that different actors and institutions will be held accountable if their responsibilities are not upheld should be built into the framework to ensure credibility.

- **Quantifiable.** The presence of easily applied tests and mapping to cross-check decisions was shown both in literature reviewed for this paper and in the previous Local Resilience Act short report, *Climate Resilience in Local Plans*, to be an enabler of effective adaptation.

A Local Resilience Act which put in place a framework for adaptation abiding by these principles could help to create a clear baseline and overarching guidance for local authorities to prepare for the impacts of climate change in place, without taking emphasis away from the need to decarbonise as a national priority. Ultimately, however, capacity constraints at the local level would also need to be addressed in the event of a new duty being placed upon councils. Further research as part of the Local Resilience Act campaign will focus on how such funding could be arrived at and distributed.

Localis
Vox Studios, V.311
1-45 Durham St
London, SE11 5JH
info@localis.org.uk

localis.org.uk

