



O5 Country report – Contributions to the guidance note with case studies and good practices on implementing local adaptation strategies

**By:
University of Huddersfield, United Kingdom
December 2022**



Co-funded by the
Erasmus+ Programme
of the European Union

Disclaimer: The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Content

1	Top tips.	3
2	Instruments available to support local adaptation to climate change.	3
2.1	REGULATORY INSTRUMENTS (E.G. LAWS, ACTS...):	3
2.2	FINANCIAL INSTRUMENTS:	6
2.3	NATIONAL STRATEGIES AND PLANS:	6
2.4	AVAILABLE DATABASES:	9
2.5	AVAILABLE GUIDELINES:	10
2.6	SOFTWARE/HARDWARE/SCIENTIFIC FACILITIES:	11
2.7	OTHERS:	11
3	Selection of country-level most suitable case studies.	12
4	References	14
5	Acknowledgements	15

1 Top tips.

Insert here the validated list of top-tips according to partner country stakeholder inputs.

Please, highlight the modifications to the preliminary proposal of top tips (if any), suggested by the consulted stakeholders.

- a. Quantify current and future climate related risks in your area
- a. Design comprehensive climate change adaptation plans (matching the timescales of the climate change adaptation plans with the common program cycle)
- b. Apply an adaptive management approach
- c. Consider coastal complexities
- d. Capitalize on previous efforts and initiatives
- e. Work with local planning authorities and key agencies
- f. Involving the local community
- g. Exploring available funding for climate change adaptation

2 Instruments available to support local adaptation to climate change.

Based on stakeholder inputs, and literature review if necessary, please complete the following sub-sections. In total, this section should not be longer than 2 pages.

2.1 REGULATORY INSTRUMENTS (E.G. LAWS, ACTS...):

List (in bullets) the most relevant regulatory instruments in your country for climate change adaptation. Include a short description of each instrument (no longer than 2 lines per instrument).

- **Climate Change Act 2008**
 - ✓ The Climate Change Act 2008 is the basis for the UK's approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other greenhouse gases are reduced and that climate change risks are adapted to. The Act also establishes the framework to deliver on these requirements. The Act supports the UK's commitment to urgent international action to tackle climate change.
 - ✓ Department for Business, Energy and Industrial Strategy (BEIS) – leading on policy for reducing emissions (mitigation). BEIS is responsible for ensuring secure energy and promoting action on climate change in the UK and internationally.
 - ✓ Department for Environment and Rural Affairs (Defra) – leading on domestic adaptation policy (adaptation). Defra is responsible for developing the National Adaptation Programme to address the risks set out in the most recent UK Climate Change Risk Assessment.
- **Subsidy Control Act 2022**

The Act has a whole schedule (Schedule 2) on environmental principles for the issuance of subsidies. This schedule notably states that subsidies in the form of compensation for electricity-intensive users given in the event of an increase in electricity costs resulting from climate policy instruments shall be restricted to sectors at significant risk of carbon leakage due to the cost increase.

- **Environment Act 2021**
This act aims to improve air and water quality, tackle waste, increase recycling, halt the decline of species, and improve the country's natural environment to make it more resilient to climate shocks.
- **Budget 2021**
The 2021 Budget, announced by the UK Treasury in March 2021, contained a number of references to net zero targets. Through the budget, the UK's Net Zero target has been made part of the UK Government's "overall economic policy objective" and as a result is to be incorporated into the remit of the Bank of England. The budget also includes plans for a new National Infrastructure Bank with £22 billion of financing and for the issuance of the UK's first green government bond or gilt.
- **Energy Act 2016**
The Energy Act 2016 formally establishes the Oil and Gas Authority (OGA), sets its regulatory powers, and regulates onshore wind power. According to the new strategy the OGA has a new mandate to both "secure that the maximum value of economically recoverable petroleum is recovered from the strata beneath relevant UK waters" and, in doing so, "to take appropriate steps to assist the Secretary of State in meeting the net zero target."
- **Pension Schemes Act 2021**
Section 124 of the Pension Schemes Act 2021 amends the Pensions Act 1995 to allow for the creation of regulations that may impose climate change related requirements on the trustees or managers of an occupational pension scheme of a prescribed description. Requirements may relate to both climate risks and opportunities, and cover both physical risks and transition risks.
- **Agriculture Act 2020**
The Agriculture Act 2020 establishes a new system of agricultural subsidies, replacing the Common Agricultural Policy of the European Union following the UK's withdrawal from the European Union. Section 1(1) of the Act provides that financial assistance may be provided to those involved in agricultural, horticultural, or forestry activities for a number of purposes, including "managing land, water, or livestock in a way that mitigates or adapts to climate change."
The act also includes a number of provisions aimed at enhancing transparency in agri-food supply chains, including the potential creation of reporting schemes that would take "climatic risk" into account.
- **Climate Change Agreements**
Climate Change Agreements (CCAs) are voluntary agreements allow energy intensive business users to receive a discount from the Climate Change Levy of up to 90% of the Levy, in return for meeting energy efficiency or carbon saving targets.
- **Finance Act 2020**
The Finance Act 2020 makes several provisions for changes to the UK's existing carbon tax and carbon pricing regimes. The changes to the Climate Change Levy reflect the changes in the fuel mix used in electricity generation and the increase in rates seeks to recover tax revenues lost due to the closing of the Carbon Reduction Commitment (CRC) Energy Efficient Scheme.

- **Climate Change Levy**

The Levy applies to electricity, gas, solid fuel and liquefied gases used for lighting, heating and power in the business and public sectors. The Levy was designed to be broadly revenue neutral in concept: at the time of introduction it formed part of a 'Levy Package' where the revenue collected is recycled back to business through a 0.3% reduction in National Insurance Contributions and also a system of enhanced capital allowances for investments in energy saving technologies.

- **Carbon Budget Order 2016**

The Carbon Budget Order 2016 sets the carbon budget for the 2028-2032 budgetary period as 1,725,000,000 tonnes of carbon dioxide equivalent (including emissions from international shipping). The budget limits annual emissions to an average 57 per cent below 1990 levels.

- **Infrastructure Act 2015**

This act makes provisions for a range of infrastructure projects and strategies across the country. It notably makes provisions to enable building regulations to provide for off-site carbon abatement measures.

Finance Act 2011

The primary legislation for the introduction of a Carbon Price Floor (CPF). Supplies of coal, gas and liquefied petroleum gas (LPG) used in most forms of electricity generation become liable to newly created Carbon Price Support (CPS) rates of climate change levy (CCL), which are different from the main CCL rates levied on consumers' use of these commodities (and electricity). The amount of fuel duty reclaimable on oil used in electricity generation is adjusted to establish new CPS rates of fuel duty.

- **UK Flood and Water Management Act - 2010**

This Act makes provision about water, including provision about the management of risks in connection with flooding and coastal erosion. Article 7.2 specifies that the Environment Agency must specify the current and predicted impact of climate change on flood and coastal erosion risk management when coming up with a national flood and coastal erosion risk management strategy for England.

- **Climate Change and Sustainable Energy Act**

The Act contains several measures to monitor and promote energy efficiency and establishes a scheme to promote national targets for micro-generation. It provides for a green certificate scheme for electricity from renewable sources and for reporting on the energy efficiency of residential accommodation. The Act placed an obligation on Defra to report to parliament on GHG emissions and on action taken by the government to reduce these emissions. The first report was put to the UK parliament in 2007.

- **Company Car Tax Reform**

In 2002, the UK Company Car Tax system was revised to be carbon-based. All company cars first registered after January 1998 are taxed on a percentage of their list price according to CO2 emission bands, measured in grams per kilometre (g/km). The reform was intended to remove the perverse incentive in the existing system to reduce the tax due by driving unnecessary extra business miles and to provide a significant incentive to company cars drivers to choose more fuel-efficient vehicles.

2.2 FINANCIAL INSTRUMENTS:

List (in bullets) the most relevant financial instruments to implement CCA measures in your country. Include a short description of each instrument (no longer than 2 lines per instrument).

- **Green Finance Strategy**
This document aims to set out a comprehensive approach to greening financial systems, mobilizing finance for clean and resilient growth, and capturing the resulting opportunities for UK firms.
- **Energy Savings Opportunity Scheme**
In 2014, the UK Government established the Energy Savings Opportunity Scheme in order to comply with E.U. Energy Efficiency Directive (Directive 2012/27/E.U.).
- **Bio-energy Capital Grants Scheme**
Supports biomass-fuelled heat, and CHP projects in the industrial, commercial and community sectors in England. Six rounds of funding have been provided since the Scheme was launched in 2002.
- **Feed-in Tariffs for renewable electricity**
Offers feed-in tariffs (FITs) for small-scale low-carbon electricity installed by householders, businesses and communities, even if the electricity is consumed on-site. Additional payment is provided for electricity fed into the grid.
- **Water Act 2014 (creation of Flood Re scheme)**
Flood Re is a hybrid public private reinsurance scheme introduced by the UK Government under Part 4 of the Water Act 2014. It was designed in partnership with insurers aimed at making the flood cover part of household insurance policies more affordable. Every insurer that offers home insurance in the UK is required to pay into the Flood Re Scheme. Funds from this levy are then used to cover the flood risks in home insurance policies.
- **Preferential Tax Regimes for Biofuels**
A reduced excise duty rate was introduced for biodiesel in July 2002 and bio-ethanol in 2005. Producers of bio-blend and bio-ethanol blend will also benefit from the reduced rate of excise duty, as the proportion of biodiesel or bio-ethanol in the blend bears the lower rate of excise duty.

2.3 NATIONAL STRATEGIES AND PLANS:

List (in bullets) the most relevant CCA national strategies or plans, if possible, focused on coastal regions and built environment. Include a short description of each strategy/plan (no longer than 2 lines per bullet).

- **UK Climate Change Risk Assessment (CCRA)**
The Climate Change Act requires the UK Government to produce a UK Climate Change Risk Assessment (CCRA) every five years. The CCRA assesses current and future risks to and opportunities for the UK from climate change.
- **National Adaptation Programme (last version covering 2018-2023)**
In response to the CCRA, the Climate Change Act also requires the UK government to produce a National Adaptation Programme (NAP). The Act also gives powers to the UK Government to require certain organizations to report on how they are adapting to climate change. The National Adaptation Programme (NAP) document - covering England only - sets out a register of actions agreed under the programme, aligns actions being taken with the risks identified in the 2012 Climate Change Risk Assessment (CCRA), and establishes timeframes for actions.

- **Resilience for the future: The UK's critical minerals strategy**
This UK government's strategy on critical minerals centres on three concepts: acceleration, collaboration, and enhancement. It recognizes the needs for enhanced resilience in the low-carbon transition, and to access a steady supply of critical minerals.
- **Jet zero strategy**
This document sets the government's decarbonization vision for the aviation sector in order to enable the country to meet its 2050 net zero target.
- **Boiler Upgrade Scheme (BUS)**
The scheme aims at encouraging property owners to install low carbon heating systems such as heat pumps, by providing grants to help overcome the upfront cost of low carbon heating technologies.
- **Energy Security Strategy (UK)**
This document was released in the wake of rising energy prices notably induced by consequences of the COVID-19-induced economic crisis and the invasion of Ukraine. It builds on policies set out in the "ten-point plan for a green industrial revolution" and the "net zero strategy".
- **The Limited Liability Partnerships (Climate-related Financial Disclosure) Regulations 2022, made under the Limited Liability Partnerships Act 2000**
These regulations impose an obligation on all Limited Liability Partnerships that meet threshold criteria to include information on climate related financial risks in their strategic reports.
- **The Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022, made under the Companies Act 2006**
These regulations impose an obligation on all companies that meet threshold criteria to include information on climate related financial risks in their strategic reports.
- **CCUS Investor Roadmap**
This document reasserts the UK's place on CCUS as a "first mover" and seeks to attract engineers and funders to develop capacity in the country.
- **Hydrogen Investor Roadmap**
This roadmap builds on the UK Hydrogen Strategy and defines how the government seeks to attract investors to develop hydrogen production in the country.
- **Automotive (investor) roadmap**
This document sets the government's roadmap to enable the automotive sector and its entire supply chain to embark on the decarbonization road.
- **The Greenhouse Gas Emissions Trading Scheme Order 2020**
This order established a new UK emissions trading regime as the successor to the E.U. Emissions Trading Scheme following the UK's Withdrawal from the European Union.
- **Net Zero Strategy: Build Back Greener**
This strategy sets out sectoral policies and proposals for decarbonizing all sectors of the UK economy to meet the net zero target by 2050. It sets sectoral targets as well as jobs creation targets. It aims to enable the delivery of the objectives set out in the Ten Point Plan.
- **Greening Finance: A Roadmap to Sustainable Investing**
This document details Sustainability Disclosure Requirements to help businesses prepare for what they will have to report and by when, details the UK Green Taxonomy, Highlight the importance of investor stewardship in green finance and set out the government's expectation.
- **Heat and buildings strategy**
This document sets out the government's vision for high-efficiency, low-carbon buildings, to enable a greener future with enhanced business and job opportunities. The main goals of the strategy are to reduce energy bills through enhanced energy efficiency, create the markets required to the trans...
- **UK Hydrogen Strategy**

This document sets the government's strategy to create an integrated low carbon hydrogen sector in the UK

- **Transport Decarbonisation Plan**
This plan sets out the government's commitments and the actions needed to decarbonize the UK's transport system.
- **National Planning Policy Framework**
The National Planning Policy Framework sets out the Government's planning policies for England and how they should be applied in the context of local development plans and planning decisions.
- **England Trees Action Plan 2021 to 2024**
This document identifies tree cover as an essential instrument for the UK to mitigate its GHG emissions, adapt to adverse effects of climate change and create economic opportunities.
- **England Peat Action Plan**
This document seeks to make the country's peatlands meet their Net Zero contribution, but also contribute to wider environmental goals.
- **North Sea Transition Deal**
The stated aim of the North Sea Transition Deal is to maximize the "advantages for the UK's oil and gas sector from the global shift to clean growth".
- **Industrial Decarbonisation Strategy**
This strategy, presented to parliament by the Department for Business, Energy, and Industrial Strategy, sets out the UK government's approach to decarbonization in key industrial sectors.
- **Bus Back Better: national bus strategy for England**
This strategy aims to bolster the use, quality, and sustainability of buses across the country. The measures include a simplification and lowering of fares, enhanced service, delivery of 4,000 new electric or hydrogen buses, and end sales of new diesel buses.
- **Net Zero Innovation portfolio**
The Net Zero Innovation Portfolio establishes a £1 billion fund to accelerate the commercialization of new technologies to advance decarbonization in the UK
- **Motor Fuel (Composition and Content) and the Biofuel (Labelling) (Amendment) Regulations 2021**
These regulations modify the existing regime governing the composition of motor fuel and introduce new labelling requirements for biofuels.
- **Carbon Accounting (Provision for 2019) Regulations 2021**
These regulations set out the Carbon Accounting requirements to be used in calculating the UK's 2019 carbon budget and are relevant for the UK's third carbon budget under the 2008 Climate Change Act.
- **Financial Conduct Authority Rules on TCFD**
As of December 2020, the UK's Financial Conduct Authority issued new rules requiring publicly listed companies incorporated in the UK to either comply with the recommendations of the Task Force for Climate related Financial Disclosure.
- **Energy White Paper**
In December 2020 the UK Secretary for Business, Energy, and Industrial Strategy issued an Energy White Paper entitled "Powering our Net Zero Future". The aim of the White Paper is to transform energy, support a green recovery from the COVID19 crisis and create a fair deal for consumers.
- **National Infrastructure Strategy**
This strategy notably aims to enhance the country infrastructures' quality and to enable the overall net zero emissions goal by 2050.
- **Ten Point Plan**

Partners Report

In November 2020 UK Prime Minister Boris Johnson outline a Ten Point Plan for a Green Industrial Revolution.

- ***Gear Change, A bold vision for cycling and walking (Cycling and walking plan for England)***
This document aims fostering walking and cycling in England.
- ***A plan for jobs***
This document is the UK's policy response to the COVID-19-induced economic crisis. It outlines a number of stimulus measures, including a "green homes grant" scheme budgeted at 2 billion pounds aimed at enhancing energy efficiency, and a 1.1-billion-pound plan to decarbonize the public sector.
- ***Marine Strategy Part One: UK updated assessment and Good Environmental Status***
This strategy aims to achieve Good Environmental Status (GES). The 2019 updates of the Strategy's Part One highlights in part 2.3 the importance of blue carbon and nature-based solutions for climate mitigation and adaptation efforts.
- ***Clean Growth Strategy***
The Clean Growth Strategy exposes how the Government intends to foster national income while reducing greenhouse gases emissions and do so at the least possible cost for taxpayers while maximizing the social and economic benefits.
- ***Cycling and walking investment strategy***
This strategy aims at making cycling and walking increasing "natural choices" for short trips and part of longer trips. It also sets short term objectives, details financial resources available, discusses indicators and sets governance arrangements to be put in place in the future.
- ***Carbon Plan***
The Carbon Plan replaced the 2009 Low Carbon Transition Plan. The Plan sets out how the UK will achieve decarbonization within the framework of energy policy - making a transition to a low carbon economy while maintaining energy security and minimizing costs to consumers (particularly those in p...
- ***Low Carbon Transport Innovation Strategy***
The Strategy sets out a wide range of actions that the UK is taking to encourage innovation and technology development in lower carbon transport technologies, including stimulating investment in a broad range of research and development activities.

2.4 AVAILABLE DATABASES:

List (in bullets) the most relevant databases to support CCA, if possible, focused on coastal regions and built environment. Include a short description of each database (no longer than 2 lines per database).

- ***UK climate change statistics portal***
A new UK climate change statistics portal has been launched. It's an accessible one-stop shop for statistics on climate change and related topics, including drivers like energy use and emissions levels, giving clear, accessible, and accurate information.
- ***Met Office- UK climate maps and data***
The Met Office holds the nation's weather and climate records.
- ***UKCP summaries and headline findings***
Summaries of the key information from the latest set of UK Climate Projections (UKCP). Includes data from local, high (2.2 km) resolution to global, coarser (60 km) resolution, in a range of formats.

Partners Report

- **Headline findings**
A summary of the most important information from our latest climate projections, with key messages for decision makers.
- **Climate change projections over land**
Pre-prepared images of key results from the Probabilistic Projections for precipitation and temperature changes over land in the UK
- **Marine climate change projections**
Summary material including a spreadsheet for sea-level changes and factsheet on the marine projections for the UK
- **UKCP data**
Through this it is possible to download and customize climate projections for any region in the UK by using the UKCP User Interface.
- **CEDA catalogue**
Access datasets not included in the UKCP User Interface. For example, UKCP Global (60km) and UKCP Regional (12km) data for other parts of the world in the CEDA catalogue could be accessed.
- **UKCP data factsheets**
A collection of documents that provide short overview of the projections for different products and metrics, such as temperature or precipitation.

2.5 AVAILABLE GUIDELINES:

List (in bullets) the most relevant existing CCA guidelines in your country, if possible, focused on coastal regions and built environment. Include a short description of each guideline (no longer than 2 lines per guideline).

- **Guidance for local government on preparing for a changing climate.**
This guide focuses on preparing for the impacts of climate change, a process known as climate change adaptation. It does not cover approaches to reducing emissions of greenhouse gases, which are the drivers of climate change, often referred to as mitigation. This guide is designed for a wide range of officers working to implement adaptation within local government – whether that is a combined authority, district council, county council or unitary authority. This includes those responsible for adaptation planning, managing civil contingencies, and contributing to longer term planning, as well as those who want to make their services more resilient.
- **Preparing for Climate Change: A Climate Change Adaptation Strategy**
Prepared by the Ministry of Justice To provide a clear outline of what is required to enable the Ministry of Justice (MoJ), including Executive Agencies and Non-Departmental Public Bodies, to prepare for climate change.
- **Code for Sustainable Homes**
Building on the recommendations of the Sustainable Buildings Task Group, the Code was developed to support a step change in the building of sustainable new homes. The Code provides a single national standard to guide the industry in the design and construction of sustainable homes.

Partners Report

2.6 SOFTWARE/HARDWARE/SCIENTIFIC FACILITIES:

List (in bullets) existing scientific facilities in your country to support the study and the implementation of climate change adaptation measures. Include a short description of each facility (no longer than 2 lines per instrument).

- **CCWeatherGen: Climate Change Weather File Generator for the UK**
The climate change weather file generator (CCWeatherGen) enables to generate climate change weather files for the UK ready for use in building performance simulation programs. It uses the 2002 climate change scenario predictions provided by the UK Climate Impacts Programme (UKCIP).
- **Climate X**
Climate X has created a platform to monitor and detect extreme weather events and the risks they pose to physical assets.
- **Airex , London - Buildings**
Airex has a mission to end fuel poverty. Aiming to reduce home energy consumption, Airex is an IoT-enabled smart ventilation control that helps reduce heat demand in homes, whilst managing indoor air quality.
- **Boxergy, Edinburgh, Scotland - Energy and Electricity**
Boxergy's mission is to provide home energy cheaper, greener, and smarter by selling it, and the hardware required, as a service. Their Hero platform brings together existing low carbon technologies to maximise efficiency and integrates them with their smart tariff. This allows customers to buy energy when it's cheap and green and use it when they want.
- **Circular, London - Supply Chain**
Circular empowers businesses to fully manage their supply chains and drive responsible sourcing and recycling. Circular creates an immutable record of the chain of custody of materials, linking the end products to their source. This traceability data also enables organisations to make informed decisions to reduce their carbon footprint.

2.7 OTHERS:

3 Selection of country-level most suitable case studies.

Please write a brief text to summarize the adequate categories of CCA measures in your country - according to the stakeholder views- and the main reasons for that. Please not exceed 500 words.

Quantifying current and future climate risks locally is a severe need in the UK. Especially with the year 2021 experiencing both climate extremes in the heat and cold seasons. The transport and power infrastructure planning and operations need to consider the unanticipated weather extremes in the UK.

In designing comprehensive climate change adaptation plans as a country, the UK has been a pioneer in many areas. This is evident in each sector's adaptation plans and strategies concerning climate action.

Applying an adaptive management approach has been highlighted as necessary by the different stakeholders. Especially with the inherent uncertainties and their cascading effects, the need to establish baselines, use flexibility as a crucial success factor, and evaluate the underlying assumptions in a given scenario is a must when evaluating adaptation measures for tackling climate risks. Additionally, adaptation spans multiple scales and sectors. Although climate change adaptation tends to be a local process, higher levels often monitor its progress across numerous portfolios. Therefore, applying an adaptive management approach is relevant in developing and implementing successful climate change adaptation plans in the UK context.

Capitalizing on previous efforts and initiatives is another essential top tip agreed by several stakeholders in the UK. Furthermore, the insufficient understanding of the economic aspects of the adaptation measures acts as a barrier to capitalizing on the previous and current initiatives in the areas. Involving local agencies, planning authorities and the local community in the local adaptation process is essential because although climate change is global climate change adaptation is very much local. Therefore it is imperative to understand adaptation from the perspective of the people who are integrating climate change risks and adaptation issues into their day-to-day decisions. Also, exploring the innovative funding mechanisms to use in the climate change adaptation programs is very timely. Despite the extensive national adaptation plans and detailed execution plans in all individual sectors, lack of funding or financial constraints has been identified as a pertaining issue in all recent evidence.

Regarding the coastal complexities, addressing climate change in the UK's coastal regions becomes challenging for several reasons. First, coastal erosion has a significant threat to coastal properties as well as local businesses. Destruction of natural habitats, ecosystems and local farming and agricultural land, loss of archaeologically valuable sites, and damage to coastal infrastructure all link to the deterioration of the coastal economy. Accordingly, analyzing the key inputs from the stakeholders and the current evidence action on climate change adaptation needs to accommodate improved communication of risks and impacts, more adaptive and flexible local institutions with improved capacities and better facilities and provide targeted support for the most vulnerable communities at risk.

Partners Report

Complete the attached excel file, including the responses of each stakeholder group in a separate sheet. Please, remember the key:

UNSUITABLE (0): Not possible to implement because the country is not exposed to the specific climatic hazard, there is no regulatory framework, social acceptance or any other reason that hamper its implementation

MODERATELY ADEQUATE (1): the local framework allows implementation, but some aspects need to be improved.

VERY ADEQUATE (2): the legal and institutional framework promotes the implementation, financial and technical resources are in place, the society accepts this option, etc.

4 References

- Abeling, T. J. E. H., & Sustainability. (2015). According to plan? Disaster risk knowledge and organizational responses to heat wave risk in London, UK. *1*(3), 1-8.
- AlHinai, Y. S. J. I. J. o. D. R. R. (2020). Disaster management digitally transformed: Exploring the impact and key determinants from the UK national disaster management experience. *51*, 101851.
- Bolton, L. (2020). The Build Back Better Agenda and COVID-19.
- Bosher, L., Dainty, A., Carrillo, P., Glass And, J., Price, A. J. B. r., & information. (2007). Integrating disaster risk management into construction: a UK perspective. *35*(2), 163-177.
- BPF. (2021). Goal #9 – Industry, Innovation and Infrastructure.
- Brown, J. D., & Damery, S. L. J. T. o. t. i. o. B. G. (2002). Managing flood risk in the UK: towards an integration of social and technical perspectives. *27*(4), 412-426.
- Climate Change Committee (2020), "The UK Climate Change Act", CCC Insights Briefings, No. 1 – <https://www.theccc.org.uk/wp-content/uploads/2020/10/CCC-Insights-Briefing-1-The-UK-Climate-Change-Act.pdf>.
- CCC. (2018). *Managing the coast in a changing climate*. Retrieved from
- de la Vega-Leinert, A. C., & Nicholls, R. J. J. o. C. R. (2008). Potential implications of sea-level rise for Great Britain. *24*(2), 342-357.
- Deeming, H. (2017). Disaster Risk Reduction and the Sendai Framework.
- DENTONS. (2022). The UK's approach to climate change – and how the construction industry can help achieve net zero targets: an overview. Retrieved from <https://www.dentons.com/en/insights/articles/2021/october/29/the-uk-s-approach-to-climate-change>
- Dias, N., Amaratunga, D., & Haigh, R. (2018). Challenges associated with integrating CCA and DRR in the UK- A review on the existing legal and policy background. *Procedia Engineering*, *212*, 978-985. doi:<https://doi.org/10.1016/j.proeng.2018.01.126>
- GOV.UK. (2011). *Climate Resilient Infrastructure: Preparing for a Changing Climate* Retrieved from
- GOV.UK. (2016). *Guidance: Community resilience framework for practitioners*.
- GOV.UK. (2019). *Voluntary National Review of progress towards the Sustainable Development Goals*. Retrieved from
- GOV.UK. (2020). The ten point plan for a green industrial revolution. In: H.M. Government London, UK.
- GOV.UK. (2021). *Build Back Better: our plan for growth*. Retrieved from
- Hemingway, R., & Gunawan, O. J. I. j. o. d. r. r. (2018). The Natural Hazards Partnership: A public-sector collaboration across the UK for natural hazard disaster risk reduction. *27*, 499-511.
- Hesselman, M. (2019). *Access to disaster risk information, early warning and education: Implementing the Sendai framework through human rights law*. Paper presented at the Disaster Risk Reduction in International Law Symposium, University of Reading/Walker Institute, UK-29 June-31 July 2017.
- ICAI. (2018). *Building resilience to natural disasters A performance review*. London
- Kim, H. J. D. (2014). Learning from UK disaster exercises: policy implications for effective emergency preparedness. *38*(4), 846-857.
- O'Brien, G., O'keefe, P., Rose, J., & Wisner, B. J. D. (2006). Climate change and disaster management. *30*(1), 64-80.
- OECD (2022, forthcoming), OECD Environmental Performance Reviews: the United Kingdom 2022, OECD Environmental Performance Reviews, OECD Publishing, Paris.
- Prabhakar, S., Srinivasan, A., Shaw, R. J. M., & change, a. s. f. g. (2009). Climate change and local level disaster risk reduction planning: need, opportunities and challenges. *14*(1), 7-33.
- PWC. (2013). *Stimulating private sector engagement and investment in building disaster resilience and climate change adaptation*. Retrieved from
- Rozer, V., Surminski, S., Laurien, F., McQuistan, C., & Mechler, R. (2021). Multiple resilience dividends at the community level: A comparative study on disaster risk reduction interventions in different countries.
- Saha, A. K., Al-Shaer, H., Dixon, R., & Demirag, I. J. A. A. R. (2021). Determinants of carbon emission disclosures and U.N. sustainable development goals: the case of UK higher education institutions. *31*(2), 79-107.
- UKGBC. (2021). *Whole Life Carbon Net Zero Roadmap :A Pathway to Net Zero for the UK Built Environment*.
- UKGBC. (2022). UKGBC's vision for a sustainable built environment is one that mitigates and adapts to climate change. *UK Green Building Council*.

Partners Report

UKRI. (2022). Infrastructure investments to boost UK research and innovation.

UNISDR. (2015). *The Sendai Framework for Disaster Risk Reduction: the challenge for science*. Retrieved from

5 Acknowledgements

Please, include the complete list of stakeholder consulted.

- National Highways Sustainable Development and Climate Change Department
- Flood Resilience Partnership at Calderdale MBC
- Global Disaster Resilience Center, University of Huddersfield
- Department for Business, Energy & Industrial Strategy, UK
- Foreign, Commonwealth & Development Office, Department for Business, Energy & Industrial Strategy, and Department for Environment, Food & Rural Affairs
- The Climate Coalition
- Climate Change Committee
- Environment Agency - GOV.UK
- Met Office, UK
- Joint Nature Conservation Committee (more commonly known as JNCC),
- Network Rail Infrastructure Limited
- School of Infrastructure and Sustainable Engineering- Northumbria University
- Royal Institute of Chartered Surveyors
- Department of Design & The Built Environment, University of Birmingham
- School of Arts and Humanities, University of Huddersfield
- Centre for Urban Design, Architecture and Sustainability- University of Manchester
- VINCI Construction UK