Policy response research brief: Policies to address food system vulnerabilities to climate change in the UK

Summary

The Maximising UK Adaptation to Climate Change (MACC) Hub works across the UK to implement and build crucial evidence on the efficacy of adaptation policy and interventions. The Hub is led by King's College London and is funded by the Department of Environment, Food and Rural Affairs (Defra) and UK Research and Innovation (UKRI). Through its Policy Response Unit, the Hub is working closely with Defra and other UK government departments to coordinate a series of rapid turnaround research projects that will fill critical knowledge gaps relating to climate change adaptation.

This research brief is one of four that are currently being advertised through the Policy Response Unit. The successful candidate will be based at King's College London and will be mentored by a researcher from the MACC Hub team. They will work closely with the Agri-food Climate Adaptation Team within Defra to research what other countries are doing to reduce food system vulnerability to climate change, and how that best practice could be applicable in the UK.

Background

Climate change poses significant risks to the UK's food supply chains and overall food system resilience. Food is one of the UK's 13 Critical National Infrastructures. As Defra's Secretary of State put it at the 2025 Oxford Farming Conference: "Food security is national security".

The third Climate Change Risk Assessment reported that climate change is likely to reduce agricultural production and food supply chain disruptions. Climate impacts are likely to lead to cascading risks that can amplify existing vulnerabilities in the food system. In 2022, the Climate Change Committee (CCC) identified climate-related disruptions to domestic and international food supplies (ID1 in CCRA3) as one of the top eight risks requiring immediate government action. These disruptions can not only

lead to production losses and supply chain breakdowns, but they can also cause substantial financial shortfalls in the agricultural and business sectors.

The policy challenge at the core of ID1 – a high-priority risk – is to have a deep understanding of the international context of climate adaptation. In 2022, the Agri-food Climate Adaptation Team within Defra conducted a science-led evidence synthesis on climate change risks, opportunities and vulnerabilities in the UK and internationally. This synthesis suggested conducting a further phase of comparative research to better define and guide the project outcomes. Learning from policies adopted in other countries to address food system vulnerabilities to climate change is a priority so that Defra can provide strong evidence and assurance to support the policies we propose to address the ID1 risk.

Key responsibilities

The MACC Hub is seeking to recruit a full-time, fixed-term postdoctoral researcher with the specific role of responding to this research gap. The successful candidate will implement a research project that identifies and analyses policies adopted outside of the UK that address food system vulnerabilities to climate change and that could be adopted effectively in the UK. In particular, the research will address the following four aims:

1. Produce an overview of agri-food system climate adaptation policies in key comparator countries

Highlight effective strategies for addressing food system vulnerabilities, and to provide a comparative understanding of different approaches to climate adaptation in the agri-food sector. We would expect this to include:

- a detailed analysis of the climate adaptation policies within the agri-food systems of each selected country (see below)
- insights into international food commodity market regulation and its wider impacts

- evidence of the effectiveness of these policies, drawing out both pros and cons

In particular, Defra wishes to identify any policies that enhance supply chain resilience to climate change. For example, are stockholding policies implemented by the chosen country to protect against climate change? If so, how are these policies implemented and what lessons can the UK learn from them?

2. Identify barriers and challenges to policy implementation

Identify the barriers and challenges faced in implementing climate adaptation policies that address food system vulnerabilities and how these can/have been overcome. Understanding these challenges and solutions will help to formulate more effective policies and strategies for the UK.

3. Identify unintended consequences and areas for future policy

Examine the unintended consequences of climate adaptation policies (e.g. water scarcity, pest control, soil degradation) and outline future steps. This will ensure a comprehensive understanding of the impacts of these policies and guide future policy development.

4. Provide recommendations for how actions taken in other countries might be applicable to the UK

Develop and test with key stakeholders' recommendations for how actions taken in other countries may be applicable to the UK. Note that food is a devolved matter, with policy implementation under the jurisdiction of each devolved government. We anticipate that most of the recommendations will be applicable to all the UK nations but, if any are not, this should be stated in the recommendation.

Net zero targets and measures are out of scope for the recommendations, but any net zero measures identified as part of the research should be noted.

The research should focus in detail on at least four countries (two in the EU and two outside the EU) and should treat the term "international" as international to the UK. Country selection will be agreed in discussion with Defra in the initial month of the project, based on the criteria below. However, we would welcome applications to include provisional suggestions of countries you would recommend focusing on.

Defra is interested in the following characteristics of case-study countries:

1. Socioeconomic comparability
    - Developed economy (relatively comparable to the UK)
    - Policy-making structures
    - Dietary patterns (emphasising commonly consumed food items such as dairy products, meat, fish, grains and vegetables)
    - Food and agricultural imports and exports (particularly in food groups that are significant in UK imports and exports)
2. Agricultural characteristics
    - A focus on countries with mixed farming systems, including livestock and arable farming, which are prevalent in the UK
3. Climate risks proximity
    - Facing comparable climate risks to the UK (e.g. flooding, droughts, sea-level rise, growing seasonal shifts)
4. Recognised leadership in climate adaptation in food systems
    - Strong national climate adaptation plan (NAP) or food-specific adaptation strategy
5. Policy transferability
    - Cultural, political and regulatory conditions that would make policy transfer or adaptation feasible for the UK (e.g. EU or Commonwealth proximity or policy compatibility)

The research should review key sources from selected case-study countries, as a minimum national climate adaptation plans, Nationally Determined Contributions, sectoral adaptation strategies or action plans, and national or regional risk assessments, as part of a wider review of the peer reviewed

and grey literature. We expect to agree a structured and systematic approach (e.g. a rapid evidence assessment methodology), but welcome suggestions from candidates as to how they would approach the work.

We also expect the successful candidate to conduct interviews with adaptation professionals and policy makers in the case-study countries, and to consider methods that allow scope for stress testing and enable the work to build on existing knowledge within Defra. To generate recommendations, we also encourage the successful candidate to run workshops with industry, policy professionals and the public to explore what could work in the UK.

The successful candidate will be expected to produce:

- a report (no longer than 40 pages) that covers the areas outlined above, including an executive summary highlighting the key recommendations
- a sharable infographic offering a country-by-country comparison of climate adaptation strategies

The report will provide the Agri-food Climate Adaptation Team, Defra and beyond with a better understanding of the global approaches to addressing food system vulnerability risks arising from climate change and potential practical adaptation policies which could be applied in the UK.

The successful candidate will also be required to convert the findings into a blog post, and will also be expected to present the results in the MACC webinar series and at national conferences. The report will be open access and available to the public published on the MACC Hub website, as part of its working paper series. Subject to policy review and approval, findings may also be published in peer-reviewed literature.

The successful candidate will be recruited through the King's Talent Bank for approximately 80 days at Grade 6 (Research Associate / postdoctoral level). The candidate will work closely with the Agri-food Climate Adaptation Team, and will receive ongoing mentorship, including fortnightly check-ins, with a senior researcher through the MACC Hub. While the majority of the research will be carried out remotely, the successful candidate will be expected to travel to London periodically for in-person meetings and training.

The research will take place between August and November 2025. A timeline will be finalised and confirmed with the successful candidate at the start of the contract, and can be adjusted for part time or flexible working arrangements. Failure to meet confirmed milestones without prior agreement may result in the contract being terminated.

Application process

To apply, please provide the following information in no more than 5 pages (see also the assessment criteria below):

- A description, using the STAR method where possible, of how you meet the essential and desirable criteria (2 pages)
- A proposed timeline and working pattern (1 page)
- A CV (2 pages)

The submission deadline is 08:00 BST on Monday 14 July. Applications should be submitted by email to MACCFlexiblefund@kcl.ac.uk with "Food System Vulnerabilities research project" in the subject line. Candidates will be informed of the outcome by w/c Monday 28 July 2025, with the expectation that the successful candidate will be in role by Monday 11 August 2025.

Please email any questions or queries to MACCFlexiblefund@kcl.ac.uk

Evaluation criteria

Applications will be evaluated using the following criteria:

Essential criteria

- Currently working on a PhD, or holding a PhD, in a relevant field within the UK, or has equivalent experience
- Experience of conducting literature reviews and/or desk-based research
- Qualitative research skills (particularly in conducting interviews, workshops and analysis)
- Experience of producing high-quality outputs to short deadlines
- Ability to tailor outputs and findings to non-academic audiences

Desirable criteria

- Familiarity with rapid evidence assessment methodologies
- An understanding of the policy environment in which the research is situated
- Previous experience of conducting policy-relevant or transdisciplinary research