

## Extreme weather and its impact on Welsh food security

### Introduction

Almost 90% of land in Wales is dedicated to farming. Agriculture is one of the main contributors to greenhouse gas emissions (contributing 15% of the total domestic GHG emissions in Wales) and projected to become the largest emitting sector across the UK by the middle of the 2030s. Further to this, the recently released [State of Nature 2023 report](#) found that one in six species in Wales is still at risk of extinction.

While sustainable agricultural practices have a central role to play in the restoration of biodiversity and carbon sequestration, certain practices have contributed to biodiversity loss, water pollution and soil depletion at a national scale. This has weakened the resilience of ecosystems and thereby their ability to recover from environmental shocks that are liable to increase with climate change.

Increasingly frequent extreme weather events are making it harder for farmers by impacting planning, profits and yields. In 2023, Wales had [one of the driest periods on record for the May and June period, followed by the third wettest July in over 100 years](#). Wales has already experienced changes in climate, and these are projected to continue and intensify.

The UK's first [Food Security Report in 2021](#) concluded that "The biggest medium to long term risk to the UK's domestic production comes from climate change and other environmental pressures like soil degradation, water quality and biodiversity". The report also reported that losses of around £1.2 billion each year (in England and Wales) were caused by issues such as soil erosion, degradation and compaction, reducing the capacity of UK soils to produce food.

Sustainable food production methods like agroecology and regenerative farming – as covered in WWF-Cymru's recent [Land of our Future report](#) – can help to mitigate and address some of these issues by improving soils and increasing biodiversity and farm resilience; both environmentally and economically. Sustainable production systems are essential for the future of Welsh agriculture.

### Research Aims

The aim of this work is to produce an independent report that explores the economic impact of climate-induced extreme weather events on Welsh agriculture that can be presented to Welsh Government and other relevant decision makers. We would like the report to highlight the potential of sustainable farming techniques to help Welsh farms mitigate and adapt. [Research from WWF Scotland](#) highlighted that extreme weather in 2017-18 alone cost Scottish farmers £161 million due to livestock losses and lower crop yields. We would like a similar analysis undertaken for Welsh farming.

This report will be used to help influence the detail of Welsh Government's upcoming Sustainable Farming Scheme, highlighting the risks Welsh agriculture faces if transformative change is not delivered through the Sustainable Farming Scheme. A wider aim of the work is to challenge the perception that the most important aspect of food security is food production alone, especially when the bulk of Welsh production does not serve the Welsh market. Instead, food production's reliance on resilient ecosystems is a core message of our wider advocacy work that we hope this report will support.

### Research approach

A two-pronged approach where a combination of qualitative and quantitative data is used.

## **Interviews**

Brief qualitative interviews with a range of farmers about observations they have made on their farms in relation to extreme weather and its impacts, as well as some techniques and practices that have helped to mitigate against the worst effects of this weather. We would anticipate interviewing farmers who are both using regenerative farming practices, and those who are not.

## **Economic analysis**

- 1) What has the economic impact of adverse weather events been on Welsh agriculture over the past decade, broken down by agricultural sector? This should consider the impact on livestock numbers, food and fodder supplies and crop production.
- 2) Are these economic impacts buffered by those who use nature-friendly farming methods? Can alternative agricultural practices support farm resilience and profitability for the future?
- 3) What potential future costs and impacts could be felt by agriculture and the wider supply chain, as a result of these extreme weather events continuing? How does this compare to non-weather events that have cost the agricultural sector, e.g. Bovine tuberculosis, foot and mouth disease, war in Ukraine?

## **Research outputs**

The research should provide a technical report providing detailed explanations of the methods and results. This should include a succinct and accessible executive summary with limited technical jargon, which will be accessible to an informed but not expert policy audience, highlighting the results of the analysis.

The final report will be used by WWF Cymru in its advocacy work to promote political commitment to a support system for Welsh agriculture that guarantees emissions reduction, nature restoration and sustainable food production, and to engage with the sector. It should therefore be written in such a way as to easily communicate its contents to an interested and informed but not necessarily expert policy audience.

WWF Cymru will work with the successful consultancy in the editing process.

## **Timeline**

The intention is for the research to be commissioned as soon as possible and the report to be finalised and delivered by January 14<sup>th</sup> 2024.

## **Copyright and ownership**

New data, and any written, drawn, intellectual, conceptual and other products arising from this research may be put in the public domain. The final report will become the property of WWF-UK.

## **Contracting with WWF-UK**

It is our requirement that an appointed external partner adopts our standards terms and conditions for engaging with us. These are included within the tender documents. Please confirm you are willing to accept these terms. Should you have any amends you need to make, these will need to be put in a word document and submitted for approval by the WWF-UK legal team.

WWF-UK asks all suppliers to comply with the Supplier Code of Conduct and WWF-UK 3rd Party Expenses Policy. Both documents are enclosed within the tender pack. Please confirm your acceptance of both.

All contracted suppliers are required to register on Panda Purchasing (WWF-UK's PO and invoice system). Should you be successful in your bid, please confirm you will be willing to register on the system.

### **Budget**

Based on similar work commissioned through WWF-Scotland, WWF-Cymru anticipates a total budget, inclusive of expenses, to come to approximately £9,000 (including VAT) for this work.

WWF Cymru will be the party with whom the successful consultancy will have a contract.

### **Responses to call for proposals**

All responses to this call should be submitted to [rlawrence@wwf.org.uk](mailto:rlawrence@wwf.org.uk) no later than 5pm on 25<sup>th</sup> October.

In their bid, consultants should set out and support, with evidence where necessary, their proposed approach and methodology, their relevant experience, an outline project plan and full costs and expenses. We anticipate that the work should seek input or review from relevant experts and farming organisations to ensure that the report highlights relevant examples and experience.

### **WWF-Cymru contacts**

[rlawrence@wwf.org.uk](mailto:rlawrence@wwf.org.uk) Ruth Lawrence, WWF-Cymru Policy Officer