

SPF UK Climate Resilience Programme

Assembly
23rd September 2021



UK Research
and Innovation



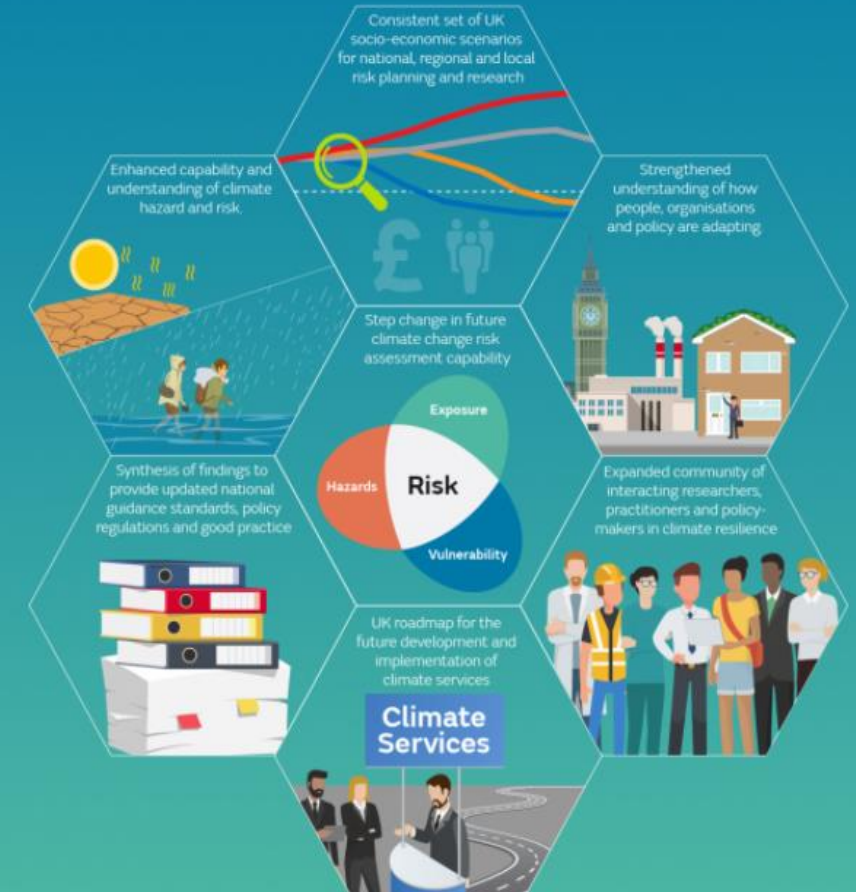
UKCRP Assembly Aims



- **Share findings** of on-going research
- **Align the research portfolio** of the programme
- **Promote knowledge exchange** across the programme on resilience research and practice
- Provide an informal space to **make connections** between people and their research
- **Grow the community of interacting researchers** in climate resilience

UK Climate Resilience Programme - A Lasting Legacy

The programme objectives of i) Characterising and quantifying climate-related risks, ii) Managing climate-related risks through adaptation and iii) Co-producing climate services will result in a lasting legacy through the following outcomes.

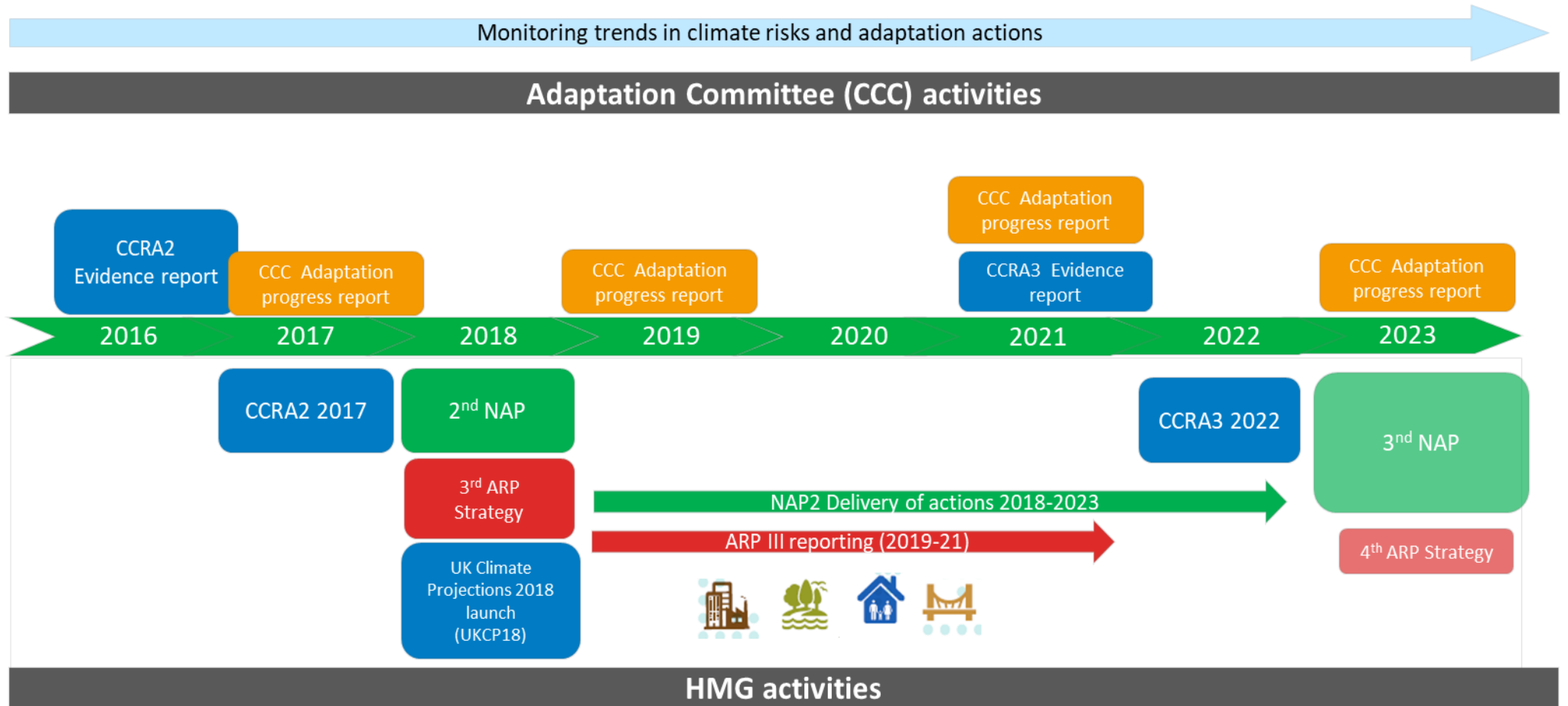




Agenda

Time	Item
09.00	Welcome & introduction to the day
09.15	Scene setting and questions
09.35	PART 1: Reviewing themes across the projects
11.00	PART 2: Enhancing impact and legacy in the final months
11.55	Mechanisms for maximising external impact
12.15	Wrap up - what next?
12.30	Close

The Statutory Framework for Climate Risk



Climate Change Act 2008

The SPF UK Climate Resilience Programme: looking back and forward

Kate Lonsdale & Suraje Dessai SPFUK Climate Resilience Champions, University of Leeds & Jason Lowe, Met Office

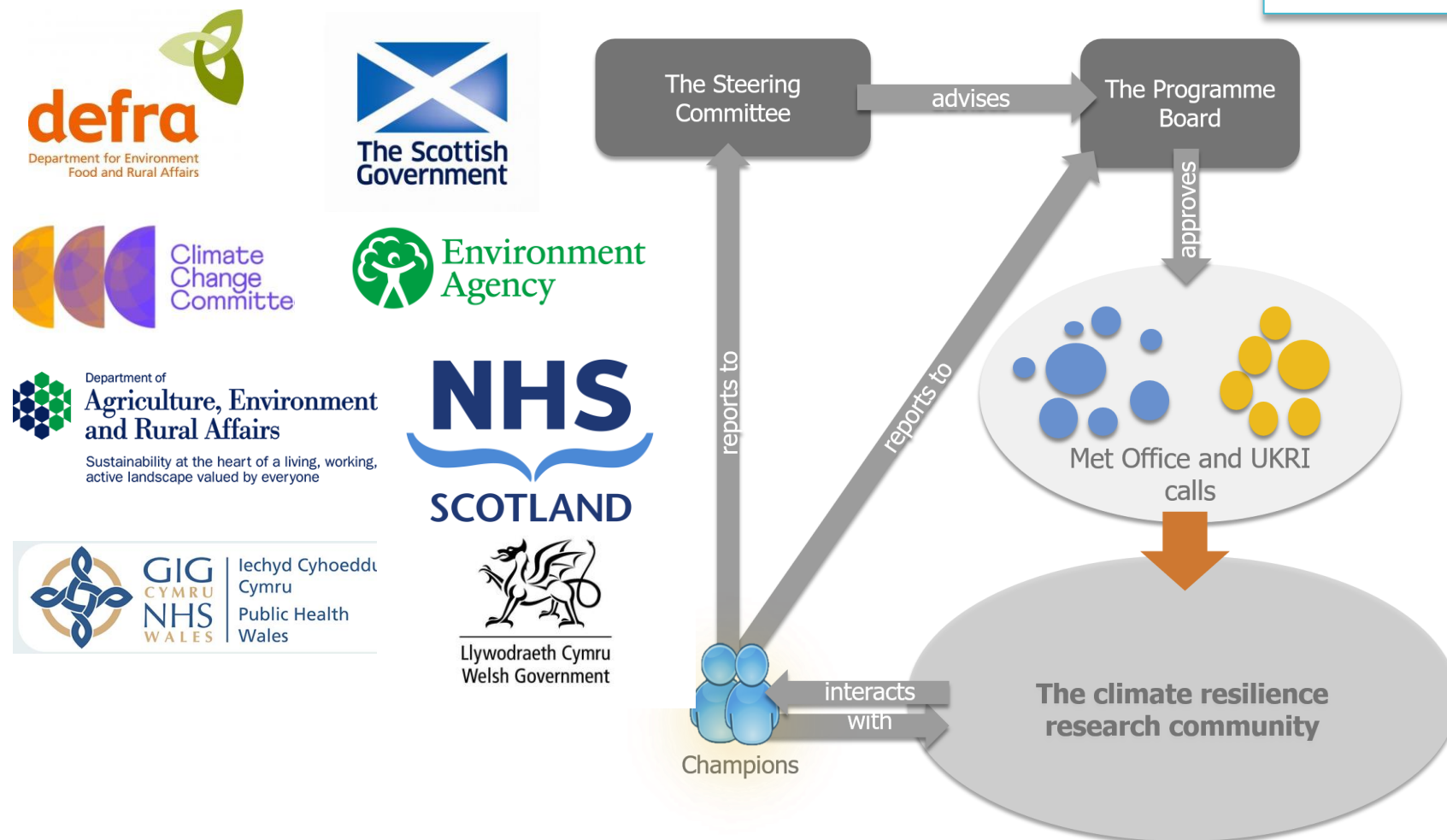
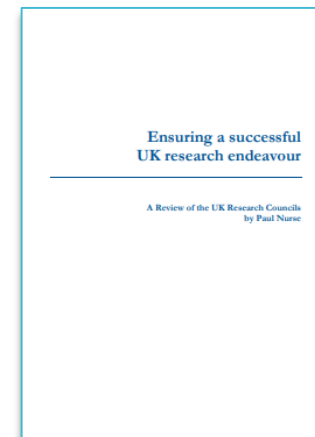


23 Sep 2021



Strategic Priority Funding and Programme Organisation

- **SPF: high-quality, multi- and interdisciplinary research and innovation that links up effectively with Government departments' research priorities and opportunities**
- Jointly led by NERC (on behalf of AHRC, ESRC and EPSRC) and Met Office - funded under Wave 1 of SPF for £18.7M
- Science plan (2019-23)





UK Climate Resilience Programme

Vision: *To enhance the UK's resilience to climate variability and change through frontier interdisciplinary research and innovation on climate risk, adaptation and services, working with stakeholders and end-users to ensure the research is useful and usable.*

Climate risks

Characterising and quantifying climate-related risks to the UK

Climate adaptation

Managing climate-related risks through adaptation

Climate services

Working with partners to turn climate information and knowledge into action and usable services



Synthesis activities

OpenCLIM Value: £2M; Duration: 28 months

Governing Climate Adaptation

Embedded Researchers

Embedded Researchers

Present & future climate hazard

Living with climate uncertainty

Development & provision of UK socioeconomic scenarios

Phase 1 projects

Phase 2 projects



Programme start
February 2019

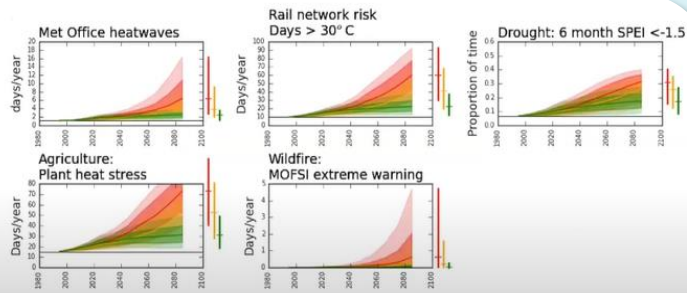
January
2020

January
2021

January
2022

Programme end
Spring 2023

Characterising and quantifying climate-related risks to the UK



South East England

Climate risk indicators: developing user relevant indicators of climate risk using UKCP18 to support risk assessments. The initial dataset includes metrics from sectors that include energy, transport, agriculture and health. New work is producing a web based delivery system for the results



UK Shared economic pathways for climate research and policy (UK-SSPs): developing a set of internally consistent socio-economic scenarios for the UK which will provide the basis for further UK research on climate risk and resilience.

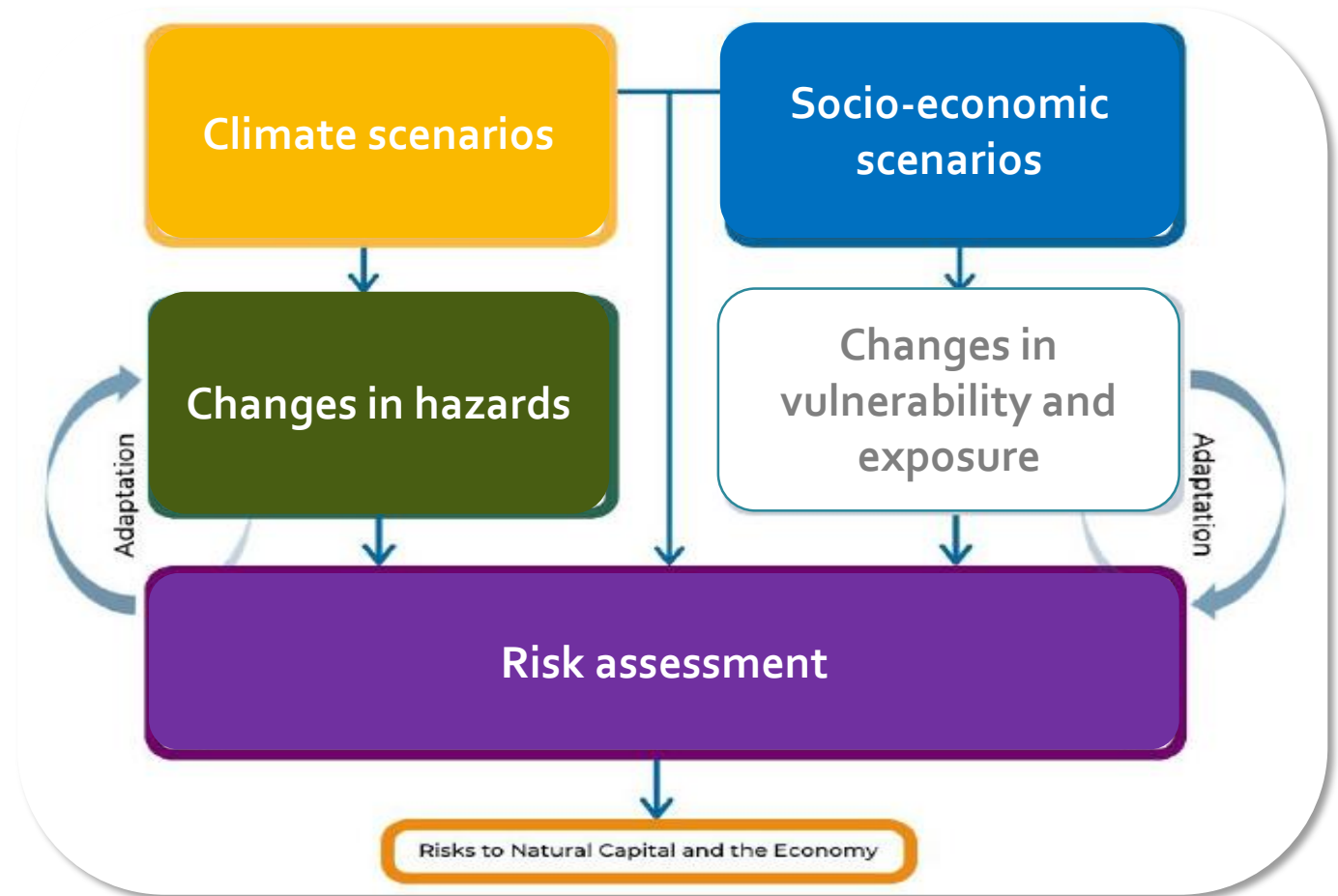
Additional projects have produced risk relevant hazard indicators

- Impacts at warming levels
- IMPRES
- Water: eFLAG
- Agriculture: CROPNET
- Flood: aquaCAT

Characterising and quantifying climate-related risks to the UK



Open Climate Impacts Modelling Framework (OpenCLIM): enhancing the UK's climate risk capability through the development and implementation of an advanced open modelling framework and nurturing a community of developers and users to ensure long term sustainability.



Managing climate-related risks through adaptation



ARID: School buildings adaptation, resilience and impacts on decarbonisation in a changing climate

Daniel Godoy Shimizu

ADAPTATION & RESILIENCE:
Planning & action for Manchester

Dr Paul O'Hare



Developing an urban heat resilience plan for Bristol

Charlotte Brown

Managing climate-related risks through adaptation



Living with Climate uncertainty

e.g. [The Risky Cities project](#), Hull, will develop research-informed learning histories for flood prone Hull. These will then be utilised in community-based arts and heritage interventions and large-scale productions developed in collaboration with project partners Absolutely Cultured and the National Youth Theatre.



Mobilising Adaptation: Governance of Infrastructure through Co-Production (MAGIC) Developing a community-led approach to reducing flood risk, whilst providing opportunities for flood-vulnerable urban residents to improve health and wellbeing, through better engagement with blue and green spaces.



Climacare: governing the climate adaptation of care settings Understanding the human behaviour, organisational capacity and governance to enable the UK's care provision to develop adaptation pathways to rising heat stress under climate change.

Do we need a national framework for climate services?



Review of climate resilience mainstreaming into regulatory and voluntary standards, national guidance, and other sectoral/industry codes of practice

- Provides a broad understanding of current UK standards and guidelines relevant to climate resilience
- Sets out a vision to 2030 for the future for climate resilience standards and guidance

Key Recommendations:

1. Setting up a Climate Change Adaptation (CCA) **Policy Leadership Task Force** with a 'task and finish' theme under the responsibility of the Climate Cabinet Committee supported by UKRI, CCC, Met Office, sector experts including the financial community, regulatory representatives, and industry bodies, along with citizens' representation
2. Task Force should address the **seven priorities** within the NAPF within two years of its formulation
3. Stress testing should be undertaken to get a **systemic picture of weaknesses** in the system



Drivers

Regulatory obligations (inc. Climate Change Act 2008 & Adaptation Reporting Power)
Funding / business case
Recent adverse weather events



Barriers

Experience and understanding of complex science
Need for single design values vs. projection uncertainty
Lack of clarity on target (e.g. 2 or 4 deg warming)
Resources and time
Lack of organisational adaptive capacity



Usability

Case studies
Flow diagrams
Stronger language ('shall', not 'may' or 'should')
Clearer language (resilience or adaptation?; language for engineers, planners, non-experts)
Applicability – sector specific
Prescriptive

Do we need a national framework for climate services?



Investigating the need and form of a UK national framework for climate services (NFCS): This is focused on the practical aspects of delivering national-scale climate services.

Based on the principles of the Global Framework for Climate Services (GFCS) we are consulting on the need for a national framework. This work is identifying key stakeholders in the UK landscape for climate service co-development, co-delivery and use, and evaluating potential formats of a national framework. Consideration will be given to roles for public, private and 3rd sector organisations.



Other projects focused on understanding need for UK climate services:

- Standards for climate
- Valuing climate services
- Understanding upscaling of climate services

Research programmes often produce a number of demonstrator or pilot projects. However, there is often not a clear pathway to applying on national scales to build resilience.

SPF UKCR is focusing on this issue by understanding the organisational barriers and identifying steps to enable upscaling.

Publications



ENVIRONMENTAL RESEARCH LETTERS

ACCEPTED MANUSCRIPT • OPEN ACCESS

The effect of climate change on indicators of fire danger in the UK

Nigel Arnell¹, Anna Freeman² and Rob Gazzard³

Accepted Manuscript online 8 January 2021 • © 2020 The Author(s). Published by IOP Publishing Ltd



Managing extreme weather and climate change in UK agriculture: Impacts, attitudes and action among farmers and stakeholders

Rebecca Wheeler^{*}, Matt Lobley^{*}

Centre for Rural Policy Research, University of Exeter, Launceston, Prince of Wales Road, Exeter EX4 4PL, UK

Climatic Change (2021) 166: 50
https://doi.org/10.1007/s10584-021-03100-5

Future changes to high impact weather in the UK

Helen M. Hanlon¹, Dan Bernie¹, Giulia Carigi^{1,2}, Jason A. Lowe^{1,3}



Enriching the Shared Socioeconomic Pathways to co-create consistent multi-sector scenarios for the UK

Simona Pedde^{a,b,*}, Paula A. Harrison^a, Ian P. Holman^c, Gary D. Powney^{d,e}, Stephen Lofts^a, Reto Schmucki^d, Marc Gramberger^f, James M. Bullock^d



Increase in the frequency of extreme daily precipitation in the United Kingdom in autumn

Daniel Cotterill^{*}, Peter Stott, Nikolaos Christidis, Elizabeth Kendon

Met Office Hadley Centre, Exeter, United Kingdom

ENVIRONMENTAL RESEARCH LETTERS

LETTER • OPEN ACCESS

Evaluating heat extremes in the UK Climate Projections (UKCP18)

A T Kennedy-Asser^{1,2}, O Andrews^{1,2}, D M Mitchell^{1,2} and R F Warren³

Published 5 January 2021 • © 2020 The Author(s). Published by IOP Publishing Ltd



Future climate risk to UK agriculture from compound events

K. Freya Garry^a, J. Dan Bernie^a, C.S. Jemma Davis^a, C.D. Edward Pope^a

MANCHESTER CLIMATE CHANGE AGENCY

MANCHESTER CLIMATE RISK: A FRAMEWORK FOR UNDERSTANDING HAZARDS & VULNERABILITY

DR PAUL O'HARE
APRIL 2021



Grow Green

MANCHESTERCLIMATE.COM
INFO@MANCHESTERCLIMATE.COM
@MCRCLIMATE

Press coverage



BBC LG

NEWS

Home Coronavirus Climate UK World Business Politics Tech Science Health Family & Education

Science & Environment

Climate concerns grow amid wettest February on record

By Mark Kinver
Environment reporter

3 March 2020 | Comments



High chance of 'potato blight' disease increasing in Scotland due to climate change, according to Met Office study

REUTERS

World Business Markets Breakingviews Video More

BIG STORY 10 MARCH 3, 2020 / 10:14 PM / UPDATED 2 YEARS AGO

Top UK worry? Climate change rises up to challenge Brexit

By Laurie Goering

5 MIN READ



Climate change: Cattle heat stress and late blight to 'increase'

March 2021 | by FarmingUK Team | [Animal Health](#), [Arable](#), [Dairy](#), [News](#), [Renewables](#)
[Environment](#)



Programme communications and webinars



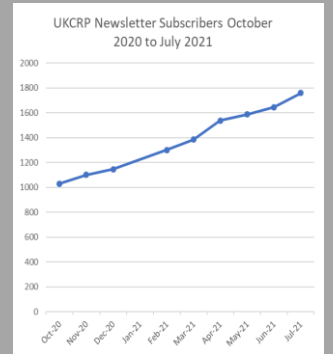
Improved website navigation

Twitter over 1728 followers, 81k impressions (1.6k/day), most 'likes' for comment by Richard Betts in a webinar. Top tweet relates to guidance published by Hayley Fowler and JBA. Top engagement- IPCC WG1 report

YouTube: Views: 755, Watch time (hours): 92 hours. Top video – CCRA3 Webinar (131 views)

Website Users: 2381. Top five pages visited: Home page; projects; webinar listings; SSP products; funding

Newsletter Steady increase in subscriptions. Now stand at: 1567



- Lunchtime webinar series proved incredibly successful with 29 webinars delivered so far
- Range of topics – funded research (pigs to peatland, EA's flood risk management strategy, CCRA3...
- Good uptake from policy, practice and academia



community engagement

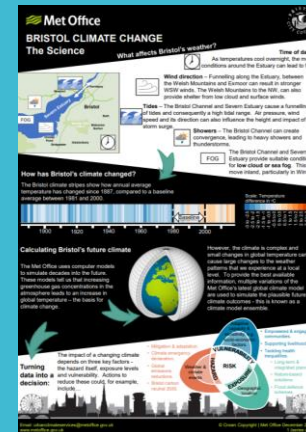
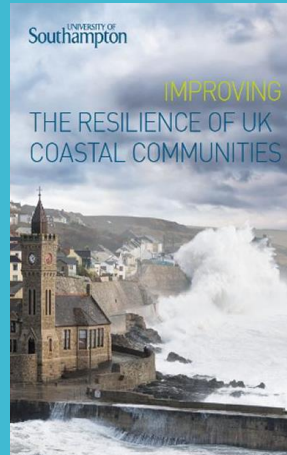
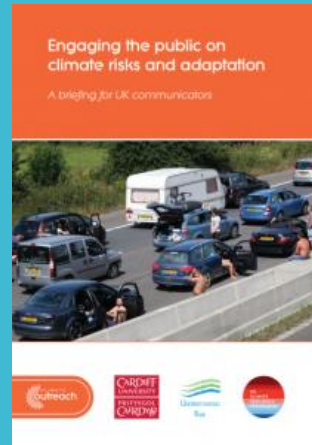


Water histories/ Water futures

A 'sound walk' tour of Hull city centre developed with community and youth groups to tell Hull stories of flood



Project outreach...



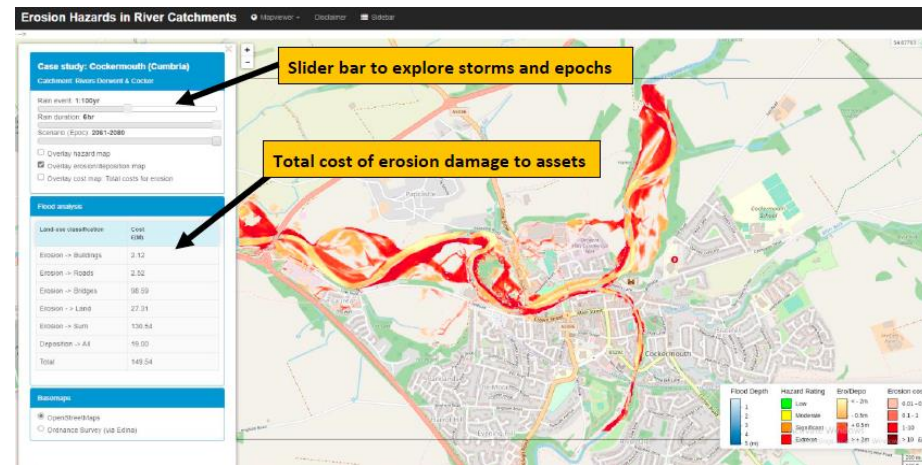
Policy and practice guidance material

animations

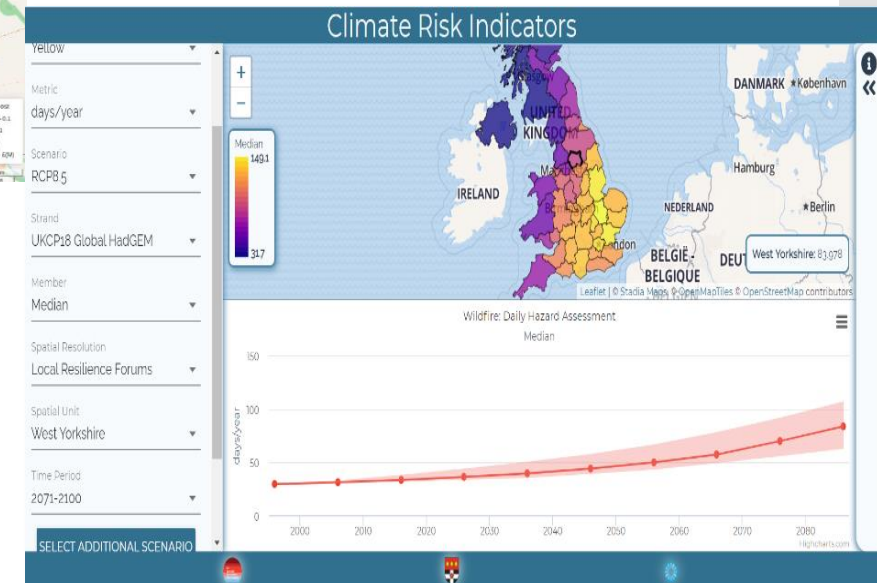


Network and synthesis activities

- Decision-support tool for quantifying and visualising current and future risk posed by erosion hazards, and their economic impacts on critical infrastructure (Cooper and Yu)
- Completion of synthesis workshops on agriculture (Pywell et al.) + videos
- Visualisation/web tool work for the UK indicators (Arnell)
- Synthesis of messages from indicators projects in UKCR (Arnell)



<https://arcoes-dst.liverpool.ac.uk/EHRC/>



Jenna Ashton, University
of Manchester

Urban Animations for Climate Resilience

Many in Manchester

Katharine Steentjes , Cardiff
University

Public perceptions of climate risks and resilience in Northern Ireland, Climate Northern Ireland

Paul O'Hare, MMU

Animating Manchester's risk and resilience

Manchester Climate
Change Partnership
& Creative Concern

Ian Townend
University of Southampton

Enhancing community engagement in the adoption of coastal resilience

Channel Coast Observatory,
British Geological Society

Network synthesis funding

James Cooper
University of Liverpool

Enhancing the climate resilience of the energy network sector: Forecasting the risk and vulnerability of electricity transmission towers to erosion

National Grid

Kate Gannon (ECR)
Grantham Research
Institute

Guiding WineGB's Research and Development Agenda in a post- COP26 context.

WineGB's R&D Group

Alice Harvey-Fishenden,
(ECR) University of
Liverpool,

Climate Change, Community and Cultural Heritage Webinar and Videos

Historic England

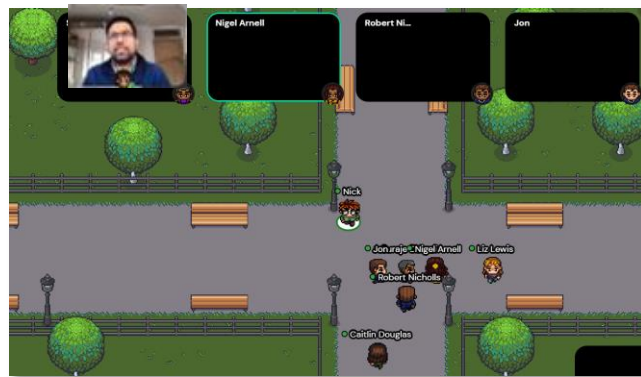
Briony McDonagh,
University of Hull

On the Edge: a co-created exploration of young people's eco-anxiety in the face of climate uncertainty

National Youth Theatre of Great
Britain



Programme Assemblies

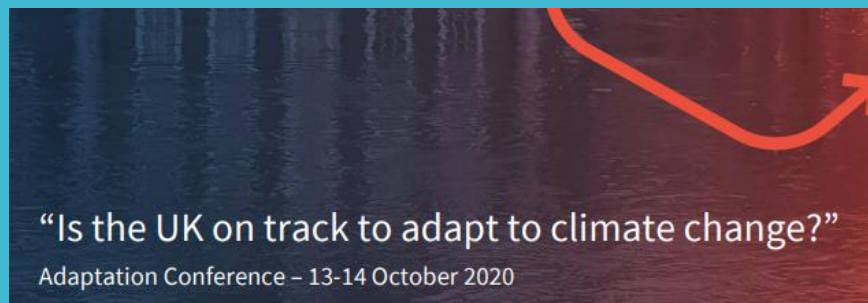


Virtual fora



Public engagement on climate adaptation

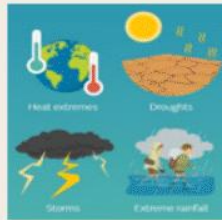
A mini roundtable meeting convened by UKRI's public dialogue programme, Sciencewise.



Programme events & 'flying the flag'

UK Climate Resilience Programme - A Lasting Legacy

UK
CLIMATE
RESILIENCE
PROGRAMME



Climate Risks
Characterising and
quantifying climate-
related risks to the
UK



**Climate
Adaptation**
Managing climate-
related risks
through adaptation



Climate Services
Working with partners
to turn climate
information and
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and usable services

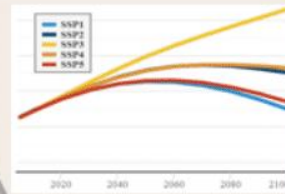
Enhanced capability
and understanding of
climate hazard and risk



Step change in future
climate change risk
assessment capability



Consistent set of UK socio-
economic scenarios for national,
regional and local risk planning and
research



Strengthened understanding
of how people, organisations
and policy are adapting



Expanded community of
interacting researchers,
practitioners and policy-makers
in climate resilience



Synthesis of findings to
provide updated national
guidance standards, policy
regulations and good practice



UK roadmap for the future
development and implementation
of climate services



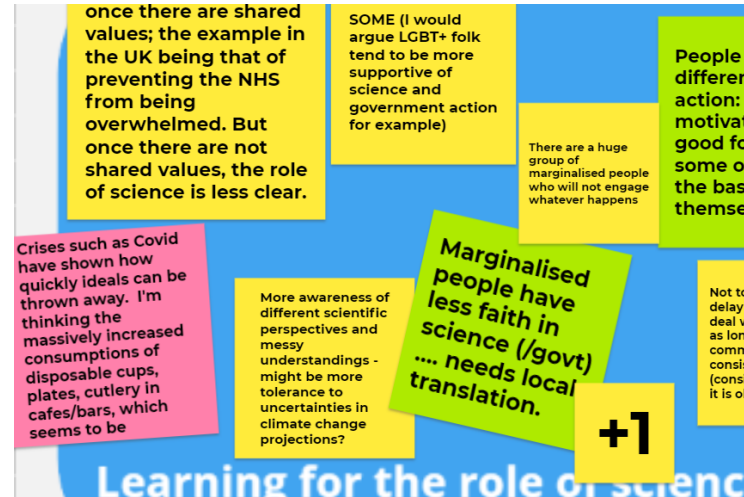


Questions



PART 1:

Reviewing themes across the projects





PART 1: Reviewing themes across the projects

- Review **own project**, revise it/add to it using post-its **(10 mins)**
- Look at **others' projects** and add comments and connections **(20 mins)**

As you look at the work of the programme what do you see that is new, interesting or surprising?



Breakout 1:

1. In your group, share reflections on the work of the programme to date.
2. Based on this conversation, capture anything 'surprising', 'new' or 'interesting' on the next Jamboard slide.
3. In plenary, we will ask for clarification of what is written and discuss what is emerging on the board - no need to formally report back but be ready to share what came up in your conversations!



PART 2:

Enhancing impact
and legacy in the
final months

What opportunities are there to strengthen connections and build synergies externally to the programme?

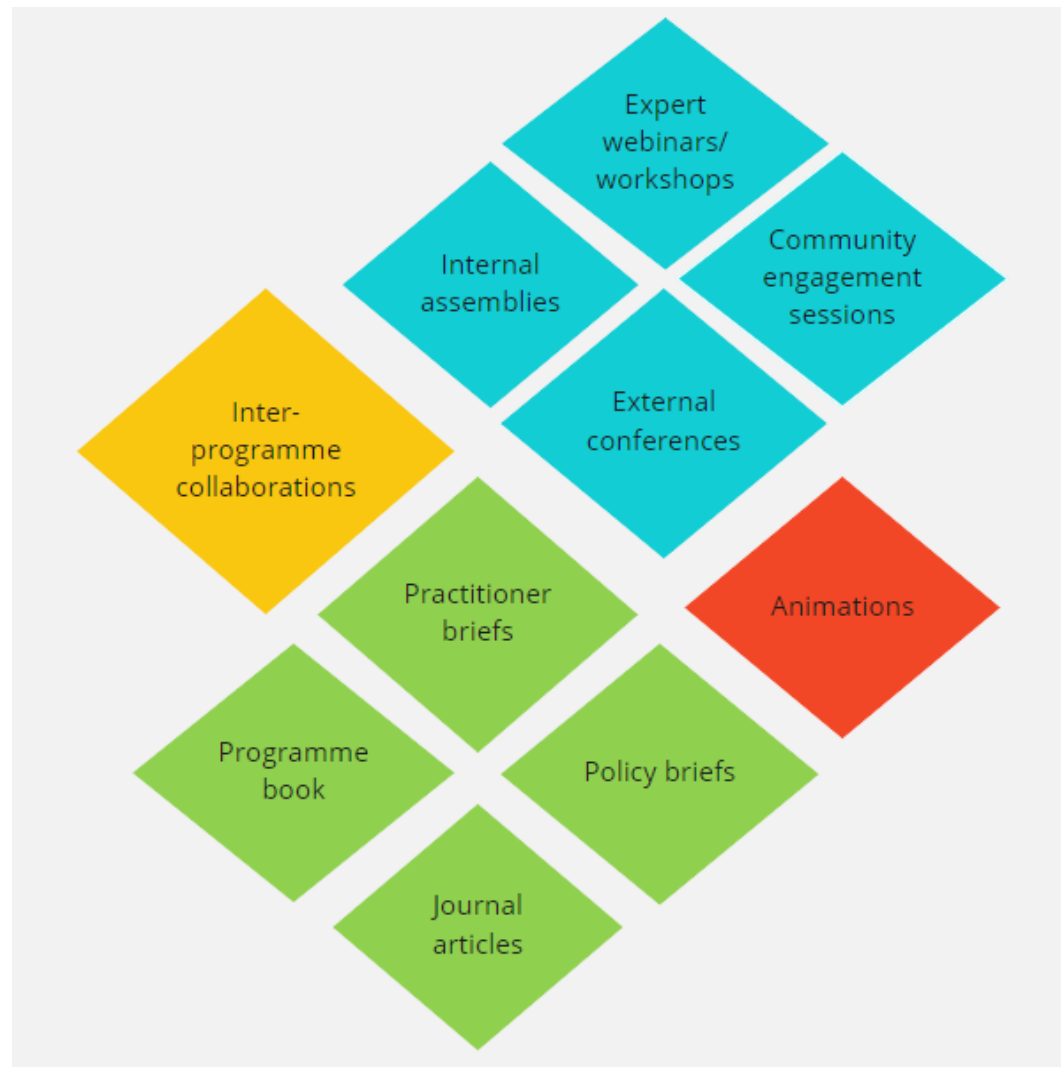


Breakout 2:

1. In your group, discuss what opportunities you see to strengthen connections and build synergies:
 - between individual projects in the programme
 - at the programme level
 - beyond the programme
2. Capture your thoughts on the 3 jamboards (one for each level)
3. In plenary, we will ask for clarification of what is written and discuss what is emerging on the board



Mechanisms for maximising external impact





**Where
next?**

Synthesis activities

Maximising impact

Reflective learning

Final programme conference
(Winter 2022/3)