

# Climate change and poverty programme

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## Summary of projects funded under JRF Climate Change and Poverty Programme 2009

The aim of the Joseph Rowntree Foundation's climate change and poverty programme is to support the development of socially just responses to climate change in the UK that take account of issues of poverty and disadvantage.

Our first phase of research is examining the social impacts and social justice implications of climate change for the UK. We are interested in both the direct effects of climate change associated with extreme weather such as flooding (coastal, fluvial or pluvial), heatwaves and drought, sea level rise and coastal erosion and the indirect implications of climate change, for example, relating to resource use and the need for a 'just transition' to a low carbon economy and society. The relationship with poverty and disadvantage is an important focus.

The projects chosen for funding listed below were felt to offer some particular innovation and relevance for policy and practice development.

### Summary of projects

The projects will provide:

1. new insights into the emerging risks and vulnerabilities posed by climate change in the UK due to **pluvial (rain related) flooding** in urban areas
2. analysis of the **implications of climate change for deprived coastal communities**
3. conceptual thinking on the **social justice implications of consumption** and how public attitudes on fairness might influence responses to climate change
4. an **assessment of the distributional impacts of climate change mitigation policies** linked to household energy and transport use
5. analysis of the **social justice implications of emerging adaptation responses** to heatwaves and drought
6. a **social justice framework** for considering the implications of climate change and **assessment of vulnerability in relation to fluvial flooding and heatwaves** in the UK.

**1. Donald Houston, University of Dundee, *The invisible hazard: Pluvial flooding in urban areas (Nov 2009- May 2011 TBC)***

This project will identify patterns of pluvial (rain related) flood risk and the responses needed across the UK, linked to concerns about urban sewerage infrastructure. It will provide a baseline assessment of pluvial flood risk against current patterns of urbanisation, examine the relationship with deprivation and then look at how responses can be developed more effectively across England, Scotland and Northern Ireland. The methods involve modelling UKCP09 (UK climate impact) predictions to generate hazard maps for urban areas across the whole of the UK under high, medium and low emissions scenarios for three time periods (2020-49, 2040-69 and 2070-99) with more detailed analysis of specific localities at risk in four local areas – provisionally Renfrewshire, Edinburgh, Belfast and York.

Socio-economic profiling of urban areas at risk will be calculated and compared against areas not at risk, considering housing tenure, ethnicity, household type, age and IMD profiles. This is combined with qualitative work to explore the causes of pluvial flooding, emergency responses, community engagement and longer term strategic responses to reduce risk. Stakeholder engagement will apply at both national level (including with Government officials in England, Scotland and Northern Ireland, the National Flood Forum, environmental regulators and the water industry) and in the four localities to include practitioners with a relevant strategic role (such as emergency planners, flood risk managers and community groups).

**2. Jeremy Richardson, Scott Wilson: *Differential impacts of climate change on deprived coastal communities (Oct 2009- Aug 2010)***

This project will explore climate risks and responses needed in deprived coastal communities. It aims to understand current and emerging climate change vulnerabilities for deprived coastal communities and to highlight policy perception and practice gaps and how communities can improve their own resilience. It will identify: hotspots in terms of climate and coastal change and social and geographic vulnerability; new dimensions of vulnerability; the inequitable distribution of climate change impacts; and community and policy led interventions needed.

It involves a literature review of existing vulnerability in UK coastal areas and interviews with both national and local stakeholders in coastal communities on the social impacts of climate change and potential equity issues. Climate and coastal change hotspots will be identified through reviewing UKCP09 climate scenarios for coastal areas, examining evidence of coastal change through shoreline management plans and erosion maps and interviews with key experts. GIS will be used to map hotspots for different impacts, for instance, sea level rise, erosion and water scarcity to show vulnerable locations. Five case studies with coastal communities will be carried out involving focus groups and interviews with local community

representatives, local planning authorities and coastal partnerships, the Environment Agency and other stakeholders. Focus groups will be run in each site with disadvantaged groups. Drawing on this work, the team will develop proposals for new and existing indicators to assess vulnerability of individuals and communities in coastal areas and will present their findings at a workshop to discuss appropriate responses.

Scott Wilson will lead this work in partnership with the Environment Council and Climate Change Risk Management consultancy.

### **3. Tim Horton, The Fabian Society: *A free ride? Social justice and sustainable consumption (Jan-Nov 2010)***

Climate change has huge implications for sustainable consumption and the shared use of resources. This project will ask what a fair approach would be for ensuring sustainable consumption amongst the population in order to tackle climate change and will consider how to develop a framework which might catalyse public support for such an approach. It recognises the importance of public support for measures to tackle unsustainable consumption in enabling policy reform. It will focus in particular on the collective and cooperative issues at stake, which are often missing in considering 'behaviour change'.

The work involves an initial theoretical phase examining the justice issues involved in sustainable consumption and a review of existing attitudinal and behavioural evidence on how people approach these issues. The research here will also be informed by expert stakeholder interviews. An interim paper will be produced providing a framework for thinking about justice and sustainable consumption, along with hypotheses on how people might think about these issues. This will then be used to inform deliberative focus groups to investigate people's attitudes to the justice issues relating to sustainable consumption and to explore public notions of fairness in implementing change.

### **4. Joshua Thumim, Centre for Sustainable Energy: *Understanding the social impacts of UK climate policies (Nov 2009-May 2011)***

This project aims to understand the distributional impacts of climate change policy options focusing on mitigation policies (ie policies to reduce carbon emissions), especially relating to housing and transport. It involves imputing and integrating data from a number of national surveys to develop a household dataset representing the distribution of household emissions for the whole of the UK – covering household energy use, private road transport, public transport and air travel. It will then analyse the distribution of carbon abatement costs and opportunities in England.

The work involves modelling the effects of selected climate policy scenarios on household emissions in England including policies outlined in the Government's new Low Carbon Transition Plan as well as alternative interventions. A wide range of policies are included for review including EU emissions trading, CERT, the Community Energy Saving Programme, feed in tariffs, smart metering and Warm Front. Alternative policies include personal carbon trading, carbon taxes, rising block energy tariffs and the proposed household energy efficiency loan scheme.

Each scenario's impacts will be considered in terms of a range of socio economic, geographic and demographic factors such as income, age, gender, tenure, dwelling age, type and condition, household and settlement type, and region. The resulting dataset will be analysed to reveal the socio economic, demographic and geographic variations in the impact of policies on English households, identifying winners and losers, the scale of gain and loss, and the impacts on particular groups of interest, eg those at risk of fuel poverty.

The Centre for Sustainable Energy will deliver this work in partnership with Oxford and Bristol Universities.

#### **5. Magnus Benzie, AEA Technology: *Vulnerability, heat and drought: Case studies from the South West (Nov 2009-Aug 2010)***

This project will consider the social justice implications of two early attempts to adapt to climate change risks – introducing water metering and rising block tariffs for water, and the implementation of Heatwave Plans. The south west of England will be used as a case study for three reasons: it has a high number of water customers struggling to pay their bills; South West Water are piloting a new water tariff scheme; and, the region is projected to suffer extreme temperature rises and reductions in summer precipitation from climate change; in these ways, the south west of England is vulnerable to drought and heatwaves.

An initial briefing paper will define vulnerability, identify vulnerable individuals and groups in the south west, review the relevant adaptation policy landscape in the UK and discuss vulnerability to climate change in the context of social and environmental justice. Desk based research, including analyses of relevant strategic documents and interviews, will be carried out to assess the implications of water metering on social vulnerability to drought and the role of heatwave plans in protecting vulnerable people from heat stress. The project will provide policy analysis on the issues in each case and discuss the implications of considering social vulnerability when developing adaptation responses.

**6. John O'Neil, University of Manchester: *Justice, vulnerability and climate change: An Integrated framework (Jan 2010- Jan 2011 TBC)***

This project will set out a conceptual framework for understanding the different dimensions of justice as they relate to climate change in a UK context and will map out and characterise the ethical issues relating to this. It will then use this to inform criteria by which to assess the differential vulnerabilities of individuals and groups to climate change and to appraise policy responses. A second stage of work will involve developing a socio-spatial index of vulnerability for UK heat-related and fluvial (river) flooding hazards, applying this index to identify vulnerable locations and areas most at risk from river flooding and current and future high temperatures in the UK. In addition case study work in Greater Manchester will be used to consider patterns of risk and availability of resources for climate adaptation, with an emphasis on urban form and heat related risk.

For more information about this work programme, please contact Katharine Knox, JRF programme manager on 01904 615912, [katharine.knox@jrf.org.uk](mailto:katharine.knox@jrf.org.uk)

*Katharine Knox, November 2009*