Submission to the National Flood Resilience Review – call for evidence

Evidence from the Adaptation Sub-Committee of the Committee on Climate Change

1. The Committee on Climate Change (CCC) was established under the 2008 Climate Change Act, with an Adaptation Sub-Committee (ASC), to advise the Government on the risks from climate change and to report to Parliament every two years on the progress being made to prepare for a changing climate.
2. As part of its statutory roles, the Adaptation Sub-Committee has commissioned various projects relating to current and future vulnerability to flooding in England and the UK. All of the projects below have been published following independent peer review.
3. Recent projects to inform the 2017 UK Climate Change Risk Assessment:
    a. **Projections of future flood risk in UK (Sayers et al, 2015):** this is the first set of consistent flood projections created for all four UK nations, taking account of climate change and population growth, and a range of potential adaptation scenarios. The results suggest that a range of measures will be needed in the built and natural environments to manage the risks arising from 2oC of global warming, and that 4oC of warming will lead to inevitable increases in UK flood risk even if ambitious adaptation strategies are pursued. Long stretches of current coastal flood defence structures in England will be vulnerable to sea level rise, which will make it increasingly more difficult and costly to manage the risk of widespread coastal inundation.
        i. Blog introduction: https://www.theccc.org.uk/2015/10/29/preparing-for-uk-water-extremes-flooding-and-drought/
        ii. Report: https://www.theccc.org.uk/publication/sayers-for-the-asc-projections-of-future-flood-risk-in-the-uk/
    b. **High++ scenarios for UK climate change (Met Office et al, 2015):** this report presents plausible extreme scenarios for changes in the UK climate (heavy rainfall, peak river flows, high winds, cold snaps, etc) that represent low probability but high impact events. The scenarios are designed to be useful for the UK Government, the Devolved Administrations, flood and coastal risk management authorities, and infrastructure operators, to stress-test flood resilience and climate change adaptation plans on the basis of a fuller range of potential climate outcomes this century.
        i. Blog introduction: https://www.theccc.org.uk/2015/11/04/why-its-sensible-to-stress-test-climate-change-adaptation-plans/
        ii. Report: https://www.theccc.org.uk/publication/met-office-for-the-asc-developing-h-climate-change-scenarios/

4. The following projects were commissioned to inform the ASC's statutory report to Parliament in 2015 on the UK National Adaptation Programme:
    a. **Floodplain development (HR Wallingford, 2015):** new residential and non-residential addresses in areas of fluvial, coastal and pluvial flood risk were identified from Ordnance Survey maps in order to track rates and patterns in floodplain development over time. The results suggest that the rate of floodplain development has not abated

by much in recent years and this will increase the future costs of flood damage and prevention.

   i. Report and data: https://www.theccc.org.uk/publication/hr-wallingford-2015-for-the-asc-update-analysis-of-the-number-of-properties-located-in-areas-at-risk-of-flooding-and-coastal-erosion-in-england/

b. **Local authority action on climate change adaption (JBA, LUC, 2015):** this research surveyed a number of local authority Local Plans and other key strategy documents to assess to what extent local adaptation actions are taking place. The survey also considered a sample of planning applications in areas of flood risk to assess to what extent flood risk assessments take account of climate change and conditions are imposed by authorities to manage climate risk (such as sustainable drainage systems, water efficiency standards, etc)

   i. Report: https://www.theccc.org.uk/publication/jba-and-luc-for-the-asc-research-to-survey-local-authority-action-on-climate-change-adaptation/

5. Lastly, a number of relevant projects were also published as part of the evidence base for the ASC's non-statutory progress report published in July 2014:
   a. A survey of development applications within flood risk areas (AMEC, 2014).
   b. A survey of paving manufacturers to assess the take-up of permeable paving (JENCO, Climate Resilience Ltd, 2014).
   c. Estimating the expected annual number of households flooded in England, and by local authority area (HR Wallingford, 2014).
   d. Indicators to assess the resilience of health and emergency planning in England to the projected impacts of climate change (HR Wallingford, 2014).
   e. Indicators to assess the exposure of critical infrastructure in England to current and projected climate hazards (HR Wallingford, 2014).
   f. Accounting for current and future climate hazards in new Nationally Important Infrastructure applications (HR Wallingford, 2014).
      i. All the above reports and datasets can be found here: https://www.theccc.org.uk/publication/managing-climate-risks-to-well-being-and-the-economy-asc-progress-report-2014/

Adaptation Sub-Committee Secretariat