

Committee on Climate Change
7 Holbein Place
London SW1W 8NR

21 September 2011

Rt Hon Caroline Spelman MP, Secretary of State
Department for Environment, Food and Rural Affairs
Nobel House, 17 Smith Square
London SW1P 3JR

Dear Caroline

Adaptation Sub Committee: Advice on the CCRA Synthesis Report

I last wrote to you about the Climate Change Risk Assessment in March 2011. At that stage the technical risk assessment was nearing completion, and we provided advice on how to move from the assessment towards the final report to Parliament. Our second progress report¹ set out some broad principles for finalising the CCRA, as we had still not seen the findings of the assessment at this point.

I agreed to write to you again once we had seen the CCRA Synthesis Report. Two members of my Committee have also taken on specific roles in reviewing the report:

- Professor Martin Parry (ASC) chaired an Academic Peer Review of the Synthesis Report and has provided a summary of the panel's review to Chief Scientific Adviser for Defra, Professor Robert Watson.
- Professor Tim Palmer (ASC) attended a Chief Scientific Advisers meeting chaired by the Government's Chief Scientific Adviser, Professor Sir John Beddington, on the science underpinning the CCRA.

We welcome the findings of Academic Peer Review and the meeting of Chief Scientific Advisers. This letter sets out our advice on the CCRA Synthesis Report, building on the findings of these technical reviews.

ASC advice on the CCRA Synthesis Report

The CCRA Synthesis Report is an improvement on earlier versions we have reviewed, and provides a good base on which subsequent assessments could build, and for the development of the National Adaptation Plan. Professor Martin Parry, in his summary of the academic panel's review, noted that this assessment represents an advance on previous UK climate change impact assessments, which relied on reviews of literature integrated with expert knowledge. The CCRA builds on this in the following ways:

- development and analysis of response functions for many fields;
- use of a range of criteria (such as magnitude and urgency) to weight and ultimately identify the potential impacts of importance to the UK; and

¹ Adaptation Sub-Committee. *Adapting to Climate Change in the UK: Measuring Progress (July 2011)*

- interpretation of results through consultation with numerous stakeholders.

However, there are still some outstanding issues to resolve, in order to ensure the report is robust and has maximum impact. These are outlined below and are structured around the three generic principles we set out in our second annual progress report:

1. Providing a transparent comparison of risks

- The Synthesis Report needs to clearly set out that the CCRA is a risk assessment, and not an impact assessment. An impact assessment would analyse the climate risk net of any adaptations that might occur. Whereas the CCRA will be followed by a national assessment of adaptation options.
- The Summary and Executive Summary do not systematically compare or identify the key risks and opportunities to the UK that have emerged from the analysis. There is useful material in Chapter 9 to help do this (for example see Table 9.5 and Figure 9.4).
- The monetisation of risks and opportunities could help with these comparisons, but is also open to misinterpretation. The report needs to clearly set out the methodology for monetising each risk, the assumptions underpinning the analysis, and how the monetised risks were combined to produce an aggregate figure.

2. Characterising uncertainties

- The assumptions underpinning the analysis are not always clearly articulated or applied consistently across all sectors, despite having a significant impact on the overall size of the risk. This is particularly true of the assumptions concerning the level of autonomous or planned adaptation to climate change and socio-economic trends. This makes the comparison of risks difficult and could lead people to draw misleading conclusions. It would be helpful if the synthesis would make clear which risks are calculated based on today's society/economy and which are based on future trends, and what level of adaptation is assumed.
- The CCRA has advanced thinking on how to incorporate the probabilities assigned to particular climate outcomes into decision-making about adaptation. The risk assessment uses some of the probabilities in UKCP09 to calculate the scale of potential consequences, and in doing so provides a method for incorporating climate uncertainty into future risk assessments.
- However, there are limitations with this approach. For example we cannot be confident that the tenth, fiftieth and ninetieth percentiles reported in UKCP09 accurately represent the range of possible climate outcomes. The representation of uncertainties in climate models is an active area of research, and it is important that the CCRA explains that there are still considerable uncertainties about the assignment of probabilities in future climate outcomes. Currently there is no such caveat.
- We suggest that in the next risk assessment, results should be drawn from a range of reputable high-resolution climate models, for example from different European institutes. This should provide more reliable forecast probabilities than those based on a single model, even if the Hadley Centre model is state of the art.

3. Cross-checking results with current climate impacts and risks

- An assessment of the UK's vulnerability to current climate is a good starting point for assessing future impacts, because it draws on what is already known, and establishes a baseline against which changes in risk and vulnerability can be tracked over time. The report, in our view, rightly begins by discussing current climate risks to the UK and how these are likely to change in the future under different possible climate scenarios. However this is not executed consistently across the sectors and themes, and is confusing in some places. For example in the *Summary of Findings* the overheating of buildings and transport systems is described as a current risk in London, but later on in the report summer overheating is stated as a risk that is only likely to emerge by the 2050s.
- We believe that future risk assessments should do more to put this understanding of the UK's current climate vulnerability at the heart of the assessment.

Individual Committee members have also provided specific comments on the CCRA Synthesis Report, which we have sent separately to Defra.

CCRA 2 and lessons learned

We understand Defra are preparing a *Lessons Learned* report that will inform the next CCRA and also highlight immediate research and monitoring needs. In our second progress report, we proposed to review how the CCRA compares with other recent national (and international) assessments, both in terms of the results and the methodology used.

At our next meeting, later this autumn, I would be happy to discuss how the ASC and Defra can work together on our respective analyses of lessons learned, and more generally on communications and media strategy for the launch of the Parliament report.

I am copying this letter to Lord Smith, Chair of the Environment Agency, whom I met recently to discuss our respective work on adaptation, and to Professors Sir John Beddington and Robert Watson. As required under the Climate Change Act, I am also copying this advice to the other national authorities.

As ever

John

Lord Krebs Kt FRS
Chairman
Adaptation Sub-Committee, Committee on Climate Change